THE CREATIVE POWER OF EDUCATION

Werner G. Faix
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OF EDUCATION

ON THE FORMATION OF A CREATIVE PERSONALITY AS THE
FUNDAMENTAL CONDITION FOR INNOVATION AND ENTRE-
PRENEURIAL SUCCESS.

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SCHOOL OF INTERNATIONAL BUSINESS
AND ENTREPRENEURSHIP
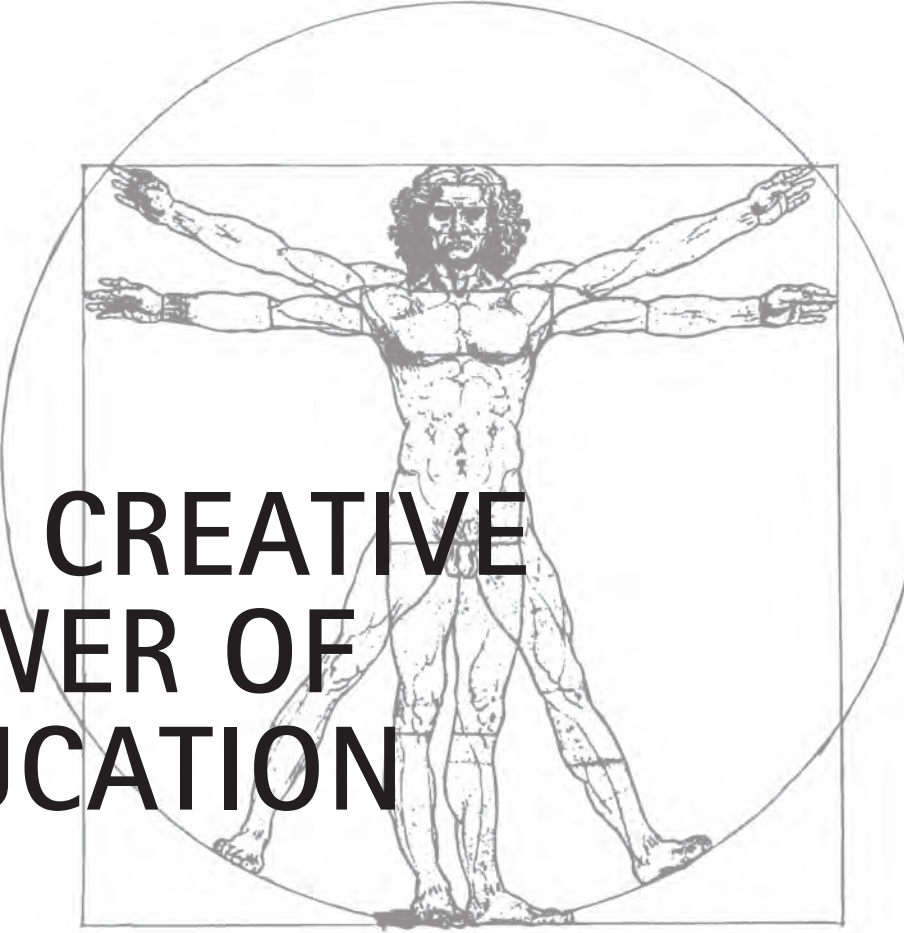
STEINBEIS UNIVERSITY BERLIN

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ON THE FORMATION OF A CREATIVE PERSONALITY AS THE FUNDAMENTAL CONDITION FOR INNOVATION AND ENTREPRENEURIAL SUCCESS.

As demonstrated by the educational model of the School of International Business and Entrepreneurship (SIBE) of Steinbeis University Berlin (SUB).

FOREWORD

This book reveals the close connection between the concepts of innovation, education and personality. It was created in the traditional way by two people recording their knowledge and insights in writing. Like any other scientific publication, its bibliography lists the works of all those who have contributed to the authors' results.

This work is much more than a ‚scientific' paper, however. It is a declaration of what constitutes the innermost core of our university. This core, or essence, is the result of the day-to-day thoughts and actions of all who are involved with our university. Seen in this light, the publications listed in the bibliography make up only a small portion of the reflection that has gone into this book. By far the greatest part of the thought that inspired us to write this book – and inspired us as we were writing it – comes from the people who work at our university. We would thus like to thank them before we continue.

Our special thanks go to Patricia Mezger and Saskia Stanek for their excellent editing and typesetting; Ineke Blumenthal, Annette Horne and Stefanie Kisgen for their critical reading of our texts; and finally, all those who have given us valuable feedback for this second edition of »The Creative Power of Education«.

Herrenberg, Juli 2015

Werner G. Faix and Jens Mergenthaler

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A FREE MAN

Under no circumstances do I want to be merely a ‚common' man. I have the right to be exceptional – if I can. I want opportunities, not security. I do not want to be a citizen who is humiliated and dulled by government support. I want to encounter risk, have desires and fulfill them, suffer disaster and enjoy success.

I refuse to sell my own determination for a pittance. I would prefer to face life's difficulties rather than lead a secure existence. I prefer the exciting tension of my own success to the dull calm of Utopia. I want neither to sacrifice my freedom for benefits nor my human dignity for charity.

I have learned to think and act for myself, to look the world squarely in the face and to recognize that this is my achievement. This is what is meant when we say: I am a free man!

Albert Schweitzer

1   INTRODUCTION

»On the creative power of education« – this title may be vaguely familiar to some readers. In fact, it is related to a widely cited phrase by Joseph A Schumpeter: the power of »creative destruction« (Schumpeter (1942/1975)). The paradox of destruction that simultaneously creates can be understood by considering a further term that Schumpeter was crucial in disseminating, namely, »innovation«. This term started becoming popular with German speakers after the appearance of the German translation (1961b) of Joseph Schumpeter's two-volume work »Business Cycles«, which had first been published in 1939 in the USA. According to Schumpeter, the primary feature of innovation is that it combines »factors [e.g. products or services, purchasing or marketing opportunities] in a new manner or exists due to the implementation of new combinations« (Schumpeter 1961b, Vol. 1: 95). Innovation thus describes the sometimes radical metamorphosis of what already exists – that active power that creates the new by destroying the old.

In our mechanistic worldview, we link every effect to a cause. Logically speaking, we must thus ask what causes an effect that is simultaneously creative and destructive. Here, Schumpeter himself introduced the concept of the »entrepreneur« or »businessperson«. In the pithiest terms, an innovation, i.e. the implementation of an idea, only develops from the idea had by the person who implements it. In terms of Schumpeter's causal nexus, the creative person would then be the cause or prerequisite of innovation; the source of the creative power of destruction.

Our mechanistic worldview is thus characterized by the fact that we assume an infinite series of causes and effects. Likewise, we view every cause as the effect of a previous cause. In vertebrates, a movement such as walking is caused by muscle contractions; these contractions are caused by signals that come from the peripheral nervous system; the cause of these signals is operations that take place in the central nervous system (CNS – the entire spinal cord and brain). In the sciences, this is where the search for the cause ends, or where a more detailed discussion of the operations begins. The last link, the first cause in the scientific sense is thus always something concrete, e.g. measurable and observable activity in the CNS. However, the question of all questions is: What causes operations in the CNS? There is certainly no lack of hypotheses here, i.e. what the first cause or first ‚causal agency' is. An imagined transcendent cause would be – depending what »content« a movement might have – God or the Devil. An imagined immanent cause would be the will (Schopenhauer), the unconscious (Hartmann, Freud), the ego, the self.

Transferred to Schumpeter's causal nexus of innovation, one must now ask the question: What causes a person to be actively creative – i.e., what causes him/her to be the way he/she is? In principle, one might arrive at two possible answers: 1. He/She is creative because he/she was born this way; because creative destruction lies in his/her blood, i.e. his genes. 2. He/She is creative due to dynamic influences on his life. Our view is that it is pointless to consider either one of these possibilities as the absolute, exclusive truth.

> *Nothing can happen in us or with us that our biology does not allow. Our biology does not determine, however, what happens in us. The things that happen in a living system depend on their actual history. This means that the living system develops only in interaction with an operationally independent medium. It is thus completely wrong to speak of biological determinism. We humans are biological creatures who realize our potential in a cultural context (Maturana and Verden-Zoller 1993: 14).*

In our view – and the view of many others – the answer to the question of what forms the human personality lies in a dynamic relationship between two principles: nature – what is innate – and nurture – what is acquired.

As representatives of an educational institution, we will limit ourselves to discussing the acquired part of the personality that we can influence in one way or another – sometimes in an irritating manner. It is now evident why the title of this book, »The Creative Power of Education« can be understood as completely causal: innovations are the result of creative power, whose cause is the creative person. And the creative person is the result of education, among other things.

This work is structured in two parts. The first part discusses Schumpeter's term ‚innovation'. Essentially, he says that on the one hand, an innovation is more than just an idea; it is an idea that has been realized. On the other hand, Schumpeter uses this term to mean more than simply a »new product«. An innovation may also be a new purchasing source, a new distribution channel, a new organizational form or a new way of doing business, for example. The first part focuses on the complementary terms »change« and »innovation«. These terms are complementary not only because change is caused primarily by innovation, but also because innovation is the means that should be used to deal with change.

Innovations are not bolts from the blue and they do not come from nowhere; they are the result of human activity. The condition or cause of human creative activity is – among other things – education. Of course, one cannot argue mechanistically
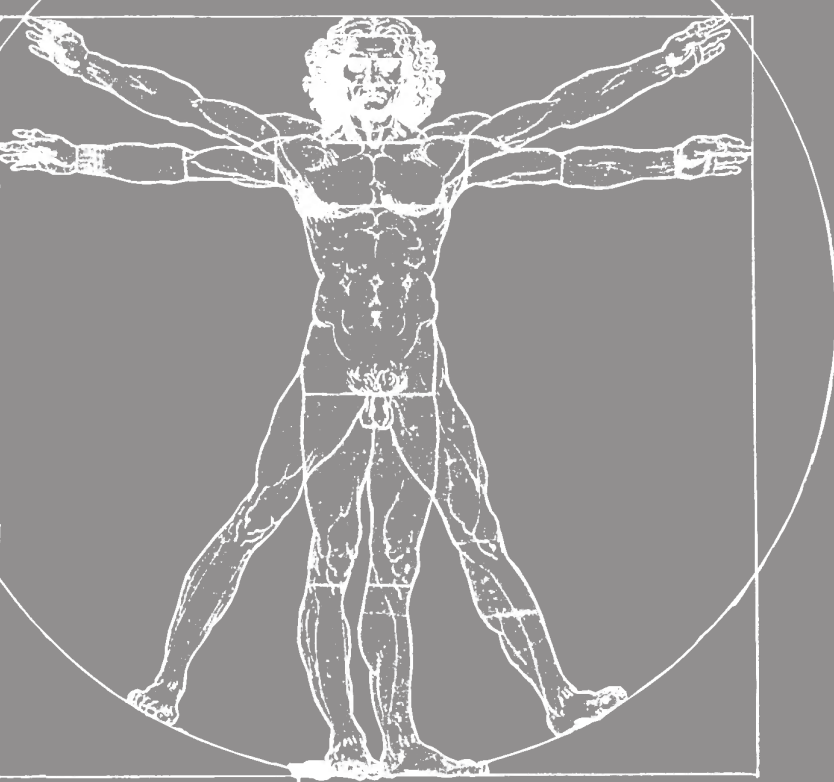
in terms of cause and effect when speaking about people. However, there is no doubt that when a person learns something or changes, he subsequently knows and can do something more-or-less new. This person's deepest mental layers (goals, identity, values etc.) may even have changed. Thus, the second part of this work envisages the contours of an educational model that could enable the development of a creative personality. This model, which we purposely keep at the abstract level, is then concretized based on the example of programs at the School of International Business and Entrepreneurship (SIBE) of Steinbeis University Berlin (SUB).

NOTE TO THE ENGLISH TRANSLATION:

This book was translated from German to English. A translation has always to struggle with the following problems: 1. Terms are used differently in different languages. 2. Some terms are highly discursive, that means these terms are so impregnated with theories, opinions that they bring different associations and images in various cultures. This is true in our view, especially for those three central concepts of this book:

1. The German term »Bildung« is translated in this book with »Education«. However, it must not be overlooked, of course, that the terms »Bildung« and »Education« look back on a long and sometimes very different cultural history. Of course there is a deep connection between the terms »Bildung« and »Education«, which is related to our human nature as »learning beings«. However, the specific configurations differ, what, where, how and why and what is learned.
2. The German term »Persönlichkeit« is not translated with »Character« in this book but with »Personality«. The term »Character« is of course closely connected with the term »Personality« because we consider »Character« as an essential element of the »Personality« is composed. However so our understanding »Personality« means something more than »Character«.
3. The German term »Kompetenz« is not translated in this book with »Skill«, but with »Competence«. The term »Skill« is of course closely connected with the term »Competence«, because we consider »Skills« as the essential building blocks of »Competence«. However so our understanding »Competence« means something more than »Skill«.

We have attempted to define the terms above to make our ideas in this book clear to a reader outside the German-speaking world. As for all definitions our definitions do not claim any universality, too – and that's a good thing, because it would be bad and also harmful if one would no longer argue passionate about the concepts mentioned.

PART 1:

INNOVATION AND CHANGE

1   INTRODUCTION

In the course of history, humanity has not only experienced a great deal, but also a great deal of diversity: radical political, social and cultural turmoil, highly disruptive inventions and new forms of knowledge as well as enormous strokes of fate – caused both by nature and by humans. Without doubt, the world is still undergoing small- and large-scale change; change that is profound as well as fast, and changes that are numerous as well as diverse. Thus, people now live in an age of upheaval in which much – if not everything – is very different from what previous generations were confronted with. This reminds us once again that change was and always is a constant companion of the human race – and will always remain so.

In view of the possibility of change, the person who anticipates change and pro-actively responds to the new in the outside world with something new in the interior world will be at an advantage. In view of the reality of change, the person who changes and responds to the new in the outside world with something new in the interior world is the only person who will have a future. The willingness, ability and determination to creatively face potential or actual change have always been the prerequisite and indicator for the sustainability of organizations and companies, nations and economies and lastly, individuals. In short, this means that »in any epoch of rapid change, those organizations [as well as nations, economies and individuals] unable to adapt are soon in trouble, and adaptation is achieved only by learning« (Revans, 1983: 11). Or, as Charles Darwin writes in his »Origin of Species«,

> *[The ability to better adapt to changing conditions of life is decisive] which individuals shall live and which shall die,— which variety or species shall increase in number, and which shall decrease, or finally become extinct. […] The slightest advantage in certain individuals, at any age or during any season, over those with which they come into competition, or better adaptation in however slight a degree to the surrounding physical conditions, will, in the long run, turn the balance. (Darwin 507-508)*

2   THE NEW NORMAL:
THE OMNIPRESENCE OF CHANGE

The dynamics of profound change have increased (again) in recent decades. Some causes of this will be briefly discussed in the following sections.

2.1   THE ENTELECHY OF THE MARKET ECONOMY PRINCIPLE

The essence of the market economy contributes increasingly to radical innovation in the world. In his theory of economic development, Joseph Schumpeter attributed all developmental tendencies to the essence of a creative entrepreneur whose actions focus on hindering economic equilibrium in the form of full competition. Entrepreneurs are compelled to generate innovations to keep up with the competition or even to leave their competitors behind. Because prospering companies cannot permit economic equilibrium, but must strive to develop and exploit competitive advantages, this means that companies who »stand still« automatically fall behind and may even be forced out of the market[1]. Schumpeter writes,

> *Capitalism, then, is by nature a form or method of economic change and not only never is but never can be stationary. And this evolutionary character of the capitalist process is not merely due to the fact that economic life goes on in a social and natural environment which changes and by its change alters the data of economic action; this fact is important and these changes (wars, revolutions and so on) often condition industrial change, but they are not its prime movers. Nor is this evolutionary character due to a quasi-automatic increase in population and capital or to the vagaries of monetary systems of which exactly the same thing holds true. The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers' goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates.*
> *As we have seen in the preceding chapter, the contents of the laborer's budget, say from 1760 to 1940, did not simply grow on unchanging lines but they underwent a process of qualitative change. Similarly, the history of the productive apparatus of a typical farm, from the be-*

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1   Economically speaking, it can be observed again and again that new technologies have spawned entirely new industries (biotechnology, nanotechnology), fundamentally changed others (smartphones, social media) or extinguished others (e.g. in Germany, nuclear power plants have been replaced by sustainable sources).

ginnings of the rationalization of crop rotation, plowing and fattening to the mechanized thing of today - linking up with elevators and railroads - is a history of revolutions. So is the history of the productive apparatus of the iron and steel industry from the charcoal furnace to our own type of furnace, or the history of the apparatus of power production from the overshot water wheel to the modern power plant, or the history of transportation from the mail-coach to the airplane. The opening up of new markets, foreign or domestic, and the organizational development from the craft shop and factory to such concerns as U. S. Steel illustrate the same process of industrial mutation - if I may use that biological term - that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one. This process of Creative Destruction is the essential fact about capitalism. It is what capitalism consists in and what every capitalist concern has got to live in. (Schumpeter 1942/1975: 82-83)

One result of globalization, i.e. the »escape [...] from the categorical framework of the nation-state« (Beck 1997: 13), is that the pressure to innovate increases even more. Today, companies no longer compete only with their direct regional neighbors, but also with companies throughout the world. It is always more difficult for highly developed industrial nations to assert themselves when they compete against low-wage countries that operate more cost-effectively. An increase in competitive rivalry can also be seen at the industrial and microeconomic level. The long product lifecycles that influenced and characterized corporate strategies in the past still allowed imitators to gain a foothold in a previously cultivated market and profitably follow in the tracks of the innovator through beneficial product consistency.
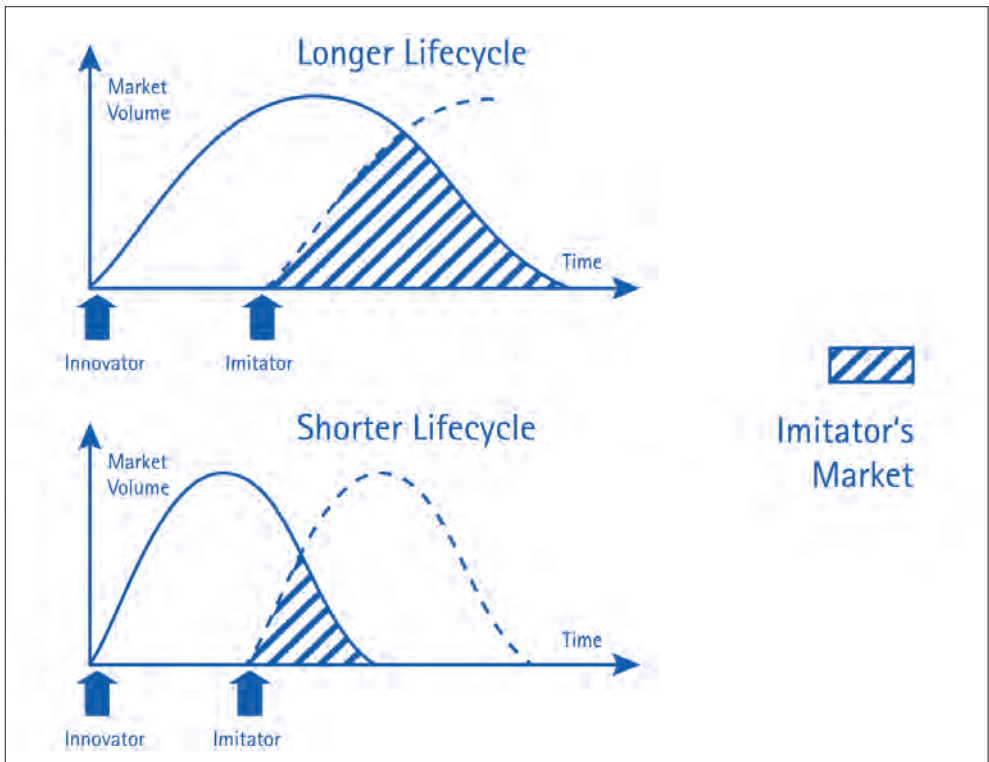
1 | The relationship between the innovator and the imitator. (Nagel 1995)

Today, the imitator in an already developed market has far fewer opportunities due to much shorter product life cycles that increasingly relativize imitation. The role of the imitator only pays for itself if the imitation can be produced substantially more cheaply. Competitive advantages are now measured in months. No longer are smaller companies necessarily swallowed by larger ones; one more often finds that slow, traditional companies are sidelined by fast, innovative ones (Faix 1994).

Possible innovative capacity and actual innovative action are thus the keys to the survival of competing companies. For long-term survival and success, companies must systematically and consciously renew and restructure their value-creation activities. To hold its own on the market, a company must always be one step ahead of its competitors – in terms of both time and technology. This is especially true for companies in western industrial nations, who are at a disadvantage compared to companies from so-called low-wage countries in regard to cost structures. For individual companies, standstill and rest are already the same as moving backwards. They pose a great existential risk in the increasingly dynamic and internati-

onal competition. The principle of »the hare and the tortoise« must be continually applied. A qualitative, quantitative and/or temporal distance from the first imitator of a company's own product/service must be maintained.

However, the ongoing maintenance of such a distance from the first imitator does not only concern product or service innovations. Imitators can also copy production methods, business processes, strategies related to handling sales and supply markets as well as more effective organizational structures. A company can only maintain and expand its competitiveness – thus keeping a little ahead of the competition – by remaining active at all entrepreneurial levels and in all areas. The process of innovation is thus a never-ending development that the entire company must continually pursue.

Only the essence of the market economy creates pressure on companies to innovate. The level of innovation today is greatly multiplying this inherent pressure on the market economy to innovate, i.e.: in the face of the number and speed of innovations achieved today, companies are experiencing this character of the market economy more strongly than ever. One could even say that this trait of the market economy has completely and truly brought about its own entelechy.
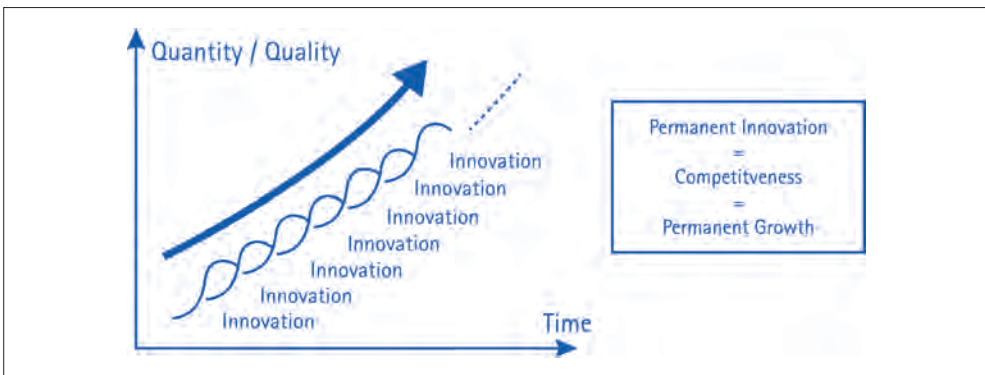
2 | Innovation as the driving force of a market economy. (Based on Faix 2008: 20)

In addition, the inherent pressure on the market economy to innovate has intensified still further due to three logically and causally independent – yet mutually reinforcing – processes. These processes are technical or technological acceleration, the acceleration of the pace of life and the acceleration of social change.
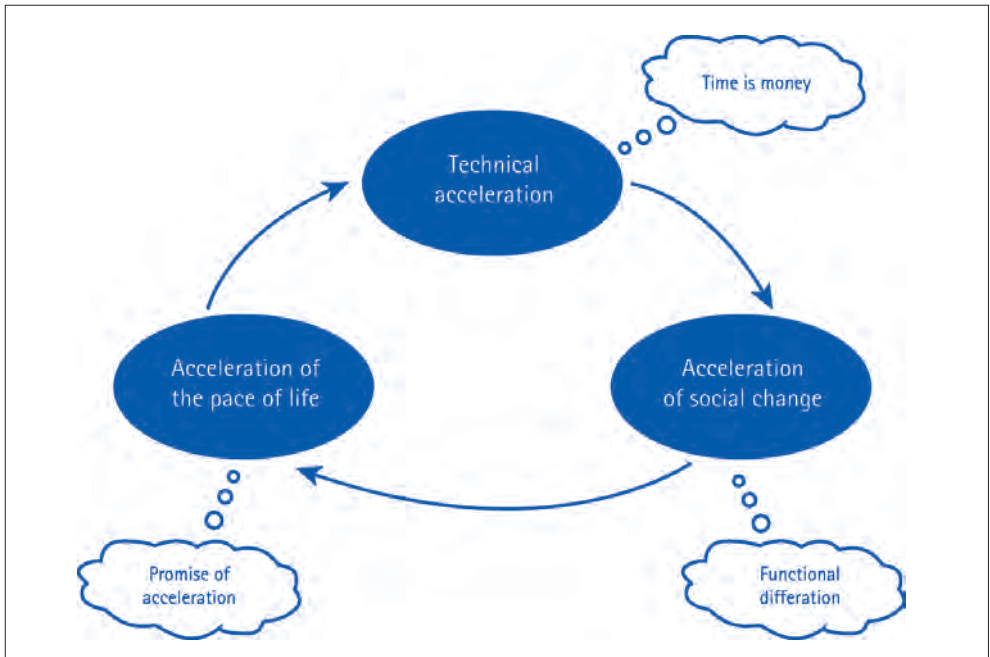
3 | Mutual reinforcement in the triangle of change. (Rosa 2008)

Technological acceleration refers particularly to the areas of transportation, communication and production. Today, distance hardly plays a role anymore. It can be overcome within fractions of a second through the Internet or telephone – or even in a few hours when air travel is involved. Acceleration of the pace of life is understood as a shortage of time despite technology that saves us ever more time. These ‚time savings‘, however, are offset by an exponential increase in the number of tasks and opportunities we face in contrast to temporal increases that are only linear. The acceleration of social change is reflected particularly in a greater forfeiture of actual experiences and expectations, and a reduction of the time available for the respective functions, values and activities in the present.

Finally, it can at least be assumed that the probability of pioneering discoveries and inventions will inevitably increase as a result of the exponential growth of knowledge, increasingly easy access to this knowledge as well as – on average – an increasingly better educated population.

This means that companies can and must continually find new or unconventional answers at faster and faster intervals – truly a Sisyphean task that threatens any num-

ber of entities. In the IBM Global CEO Study, eight out of ten CEOs said that significant changes lie ahead of them. At the same time, however, they see a great discrepancy between the pace of change and their ability to cope with it (IBM 2008a: 7).

> *Constant change is certainly not new. But companies are struggling with its accelerating pace. Everything around them seems to be changing faster than they can. […]Suddenly everything is important. And change can come from anywhere. CEO s find themselves — as one CEO from Canada put it — in a »white-water world«. (IBM 2008: 15)*

Finally, this whitewater ride can only be survived when one does not sit idly by, but grabs the oars. To do this, those responsible for their company and its activities must continually reinvent and optimize it. A company must respond to the perma- nent – sometimes only gradual but sometimes radical – changes in the outside world with gradual but sometimes radical changes in the interior world. New deve- lopments in the environment, or ones that have not been seen yet, must be con- fronted by something revolutionarily different and evolutionarily better. The pressu- re to innovate that already exists is being further increased by the transformation to a knowledge-based society. This change is clearly evident when one considers the loss of importance of the classical production factors of land, labor and capital since the 1990s, and their replacement by the production factor of knowledge.

> *Money returns yields but does not think; machines can perform unple- asant work for people, but they do not invent anything. No matter how valuable natural resources or an abundant labor force becomes, they will not be able to compensate the knowledge created by individuals in the long run (Oelsnitz etc. 2007: 37).*

Electronic mail order houses no longer need any warehouse inventory; customer orders are forwarded directly to the manufacturer, who ships the goods to the customer. Advances in bioengineering produce hybrids that are largely immune to pests and weather. Earlier, more land and hours of labor were needed for the identical crop yield. The bon mot of Friedrich List applies more and more: »The power to create wealth is [...] infinitely more important than wealth itself« (List 1930/1841: 173).

2.2   COMMON HUMAN CHALLENGES

The human race is facing the end of an era of balance. To put it more dramatically: We are standing at the crossroads between the creation of a new world and the twilight of the Gods, on the path to either a fruitful or a disastrous future. This leap into a new era is taking place mainly due to the climate change that is occurring to a measurable extent, the increasing scarcity of resources, the steadily growing global population, growing prosperity in more and more regions of the world and the concomitant changes in lifestyle. Such an epochal leap, however, will only succeed if the following challenges – which are common to all of humankind – are solved:

FOOD SUPPLIES IN THE FUTURE: For years, the UN Food and Agriculture Organization (FAO) has warned about a worldwide food shortage: of the 7.1 billion people living on the earth today, 923 million suffer from hunger. In 2050, the world's population will have grown to 9.2 billion people, of whom up to three billion will be starving. The FAO has determined that to cover the nutritional needs of all people in 2050, food production must double (Blawat 2009). Due to very rapid growth, especially in the BRIC nations, lifestyles are increasingly changing – and food habits are a part of this. However, if we continue to deal with fertile land and water resources as at present, we would need up to five planet Earths for every person in the world to enjoy the same consumption level as a European or American. In view of the threat of climate change, we must soon change our methods of food production, not only in Africa but also in those zones that are still temperate. In the near future, cereals will have to be grown in Germany that yield just much in periods of drought as they do when fields are flooded for weeks at a time. A world that wants to offer all of its inhabitants the basis for a staple diet will need innovative concepts for ensuring food supplies.

WATER SUPPLIES IN THE FUTURE: Over half of the world's population suffers from water shortages today; every fifth person no longer has clean drinking water. The UN estimates that by 2025, 1.8 billion people will live in regions with absolute water shortages. Those most affected by water shortages live in Africa, Asia, and the Near and Middle East. Worldwide, 2.5 billion people also suffer because the water they do have does not meet hygiene standards. A world that wants to offer all of its inhabitants water – the basis of all life – will need innovative concepts for ensuring water supplies.

ENERGY (SUPPLIES) IN THE FUTURE: Since 1990, energy-related CO_2 emissions have risen by eight percent worldwide to 23 billion tons; in 2020, an increase to circa 38 billion tons per year is expected. Western industrialized countries and Japan produce two-thirds of current emissions. If all countries reached the same standard of living as in the OECD countries – positing today's energy supply system – some four planet Earths would be required, both in terms of the increase in emissions and the demand for raw materials. Thus, industrialized countries like Germany also have a responsibility to create innovative concepts for less developed countries.

MOBILITY IN THE FUTURE: In regions outside of Europe, completely new cities are springing up – sometimes within a very short period of time. Because these have developed in some cases as »sprawl«, or uncontrolled growth (e.g. São Paulo), and traffic planning has not been able to keep up with this expansion, new mobility and vehicle concepts must be studied. These include new means of transportation, new ideas for traffic management, new ideas about mobility such as car sharing etc. As Claus Ehlers, Head of the Center for Society, Vehicle Concepts and Human Factors at Daimler AG, notes, »No successful car manufacturer only thinks about cars. Especially not if he wants long-term success on the market. He must think in terms of mobility chains« (2009). In other words, in view of severe traffic congestion in many locations and car manufacturers' environmental responsibility, and in view of the fact that more and more consumers are demanding environmental compatibility, it will no longer be a matter of building alternative cars in the future – either for individual mobility or freight transport – but of completely rethinking mobility.

EDUCATION IN THE FUTURE: In the near future, simple work processes will become increasingly automated even in developing and emerging countries, just as they are in the industrialized countries. Educational systems throughout the world now have the challenge of training not only an intellectual elite or only young people, but of making and keeping entire populations fit for the current and future knowledge-based society. At issue is not simply the transfer and accumulation of static knowledge but providing a framework for developing competencies. Due to the increasingly fast pace of change, people are only capable of active, autonomous public engagement when they have the right skills. Fair access to education for everybody and a paradigm shift from the acquisition of qualifications to the acquisition of competencies are vital. Innovative educational concepts must be developed to respond to these challenges.

MEDICINE AND LIFE SCIENCES IN THE FUTURE: Increasing miniaturization in medical technology means that operations are increasingly easy for surgeons and gentle on patients. The goal of molecular medicine is to research opportunities for preventing and treating illnesses by intervening in genetic material. Researchers hope to be able to cultivate entire organs using stem cells. Neuroprostheses may be able to help the blind see, the deaf hear and the lame to walk. At the same time, medicine is reaching its limits more and more often – limits to the affordability of increasingly expensive and more perfect medicine as well as to ethical limits of intervention on the human body, limits to what is technically feasible and limits to what is desirable or reasonable. The medicine of the future will also be linked to questions of health economics and policy, questions concerning quality and efficiency, and the problem of the »ethics of distribution« of medical services. Against this backdrop, it is increasingly important to discuss possible alternatives and complementary measures that return the whole individual to the center of attention with such methods as behavioral medicine, homeopathy, anthroposophy, naturopathy, prevention and influencing people's behavior. Will medicine accept its helping, advisory role and support individuals in their efforts to maintain a healthy lifestyle? Will preventative measures be used in a targeted manner to prevent specific diseases? Will comprehensive health promotion prevail? All of these aspects make it clear that in medicine, it is not enough to develop innovative technologies; it is (holistic) innovative concepts that are needed (Cf. Kaiser, Siegrist, Rosenfeld, Wetzel-Vandai 1996).

2.3   CONCLUSION

In brief – and with some exaggeration –, we can say that the so-called ‚new normal' is that dramatic change is the rule rather than the exception. Managers worldwide expect that the world in general and the economy in particular will become significantly more dynamic, uncertain, complex and structurally different. (IBM 2010b: 15) As the head of a US government agency in the framework of the 2012 IBM Global CEO summarizes, »There isn't a single day I come into work when I know what will happen.« (IBM 2012: 12)

Of course, being innovative and coping with change has not been relevant for the human race only for the past few years. Recent decades have been characterized by relative stability – at least in western industrial nations. We have become familiar with this world, have become used to the way it is, internalized it as normality. There have naturally been countless innovations, but we have either regarded them as a strategy that companies use to generate growth, and thus profit, or as a nice/helpful novelty that makes our lives easier. Today, we are (probably) experiencing a disruption of this world; in the »new normal«, innovations are becoming what they always were: a principle of life and a basis for the survival of our species.

ON INNOVATION

The world seems to be increasingly on the move– and occasionally, even on the brink of chaos. Companies can only handle this by being constantly prepared to make evolutionary or even revolutionary leaps forwards.

»Today's CEOs face grueling conditions. Buffeted by volatility, they have come to expect the unpredictable. But they know that the return to growth will require more than resilience or sure footing. They need to spring forward with the vigor of Olympic-caliber athletes.« (IBM 2010: 52) In the future, managers will need more than ever before to recognize themselves as creative personalities – and have the willingness and ability to create something new and different, or at least permit its creation. In other words, to assert themselves in a constantly changing world, the categorical imperative for businessmen is to follow the first entrepreneurial principle and maintain the ability and willingness to innovate. What decides the fate of economies as well as businesses is not only thinking about the new and innovative, but constantly transforming it into a reality that adds and enhances value.

3   THE DIMENSIONS OF INNOVATION

There are two principal ways for a company to secure and develop its competitiveness. The first is expansion through the acquisition of a new company. The second is in developing and implementing new ideas, i.e. being innovative. Which of these two ways promises greater success? The results of an analysis of the Fortune Global 500 Companies (Raisch, Probst, Gomez 2007) show that innovation contributes significantly more value than acquisitions: »Most sustainably growing companies rely on an organic growth strategy in which acquisitions play a subordinate role. Their primary objective is to use their own resources to grow faster than the competition.« Ibid.: 44)
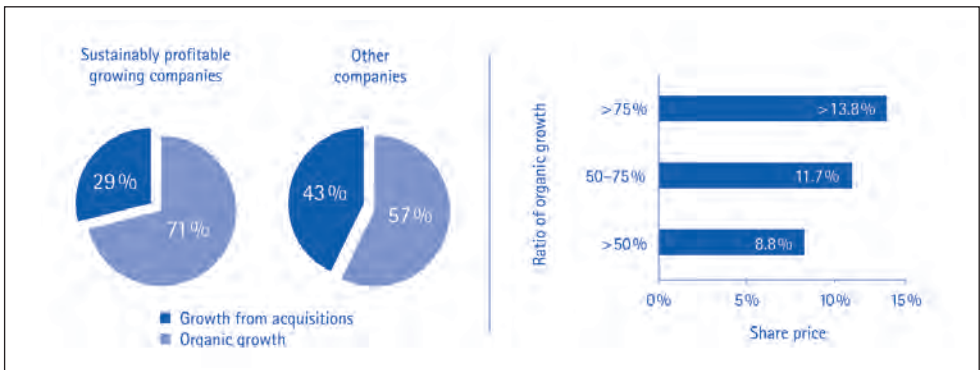
4 │ Ratio of organic growth to growth by acquisition in the Fortune Global 500 Companies (1995–2004). (Raisch, Probst, Gomez 2007: 43)

Acquisitions are not fundamentally wrong: companies that are sustainably profitable clearly emphasize innovation. At the same time, they supplement this with acquisitions in two ways. 1. Successful companies use acquisitions to help them enter new markets to rapidly achieve a competitive size and market position. 2. Successful companies buy or acquire holdings in companies that have greater innovative strength (ibid.: 43). Once again: »Growth by acquisition is the second-best strategy. The best is organic growth. We rely on innovation and see acquisitions as purely complementary.« (Henning Kagermann, CEO of SAP AG as cited in ibid.: 40)

But what exactly is an innovation? Joseph A. Schumpeter defined »innovation« as: »The doing of new things or the doing of things that are already done in a new

way« (Schumpeter 1947: 151).[2] The decisive point in this definition is the verb ‚doing‘:   It's not enough to simply have ideas or visions of a future. At issue is realizing these ideas; transforming new knowledge – or knowledge that has never been applied in a certain manner – into value-enhancing reality. Innovation thus goes farther than an actual idea or invention; it also includes activities that are decisive for its success on the market.

Many people associate the term ‚innovation‘ with technical inventions. Innovation, however, is not only found or introduced in the business world, but in civil society and the State as well. This can be seen particularly in regard to social innovations. The environmental movement, non-marital cohabitation, social security and new pedagogical concepts, for example, are all considered to be innovations. In the area of the economy,

Schumpeter is not only referring to major technological achievements when he speaks about innovation. As more recent studies show, these new technologies do not necessarily guarantee a company an edge over its competitors (Collins 2001: 162). Schumpeter instead points out that the following methods of radical innovation exist, i.e. methods of introducing something completely new.

> *(1) The introduction of a new good – that is, one with which the consumers are not yet familiar – or a new quality of a good. (2) The introduction of a new method of production, that is, one not yet tested by experience in the branch of manufacture concerned, which needs by no means be founded upon a discovery scientifically new, and can also exist in a new way of handling a commodity commercially. (3) The opening of a new market, that is, a market into which the particular branch of manufacture of the country in question has not previously entered, whether or not this market existed before. (4) The conquest of a new source of supply of raw materials or half-manufactured goods, again irrespective of whether this source already exists or whether it has first to be created. (5) The carrying out of the new organization of any industry, like the creation of a monopoly position (for example trough trustification) or the breaking up of a monopoly position. (Schumpeter 1934: 66)*

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2   »To produce other things, or the same things by a different method, means to combine these materials and forces differently. [...] Development in our sense is then defined by the carrying out of new combinations.« (Schumpeter 1934:65-66)

In many companies, the term ‚innovation' is reduced to aspects 1 and 2 of those mentioned by Schumpeter: new products and production methods. According to Schumpeter, the prerequisite for guaranteeing steady business growth is that a company internalize and support innovative efforts in each of its corporate segments. The entire company should be oriented towards innovation.

From today's perspective, we would like to make the following additions to Schumpeter's original definition. Based on today's conditions, we wish to expand the factor »introduction of new production methods« to include the introduction of new business processes, and replace the factor »reorganization of economic sectors« with the factor »development and introduction of new organizational structures«. The latter includes all innovations related to the organizations within a company, such as Mergers & Acquisitions, Joint Ventures, partnerships etc. as well as internal reorganization. The factor »development of new sources of raw materials and semi-finished products« is related to the »development of new (international) suppliers for the development of a new source of raw materials or semi-finished products«. In the view of companies today, radical innovations – according to Schumpeter – are thus:

- Development and introduction of a new product and
  development and deployment of a new service
- Development and introduction of new production methods and
  development and introduction of new business processes
- Development of new markets
- Development of new purchasing markets
- Development and introduction of new organizational structures
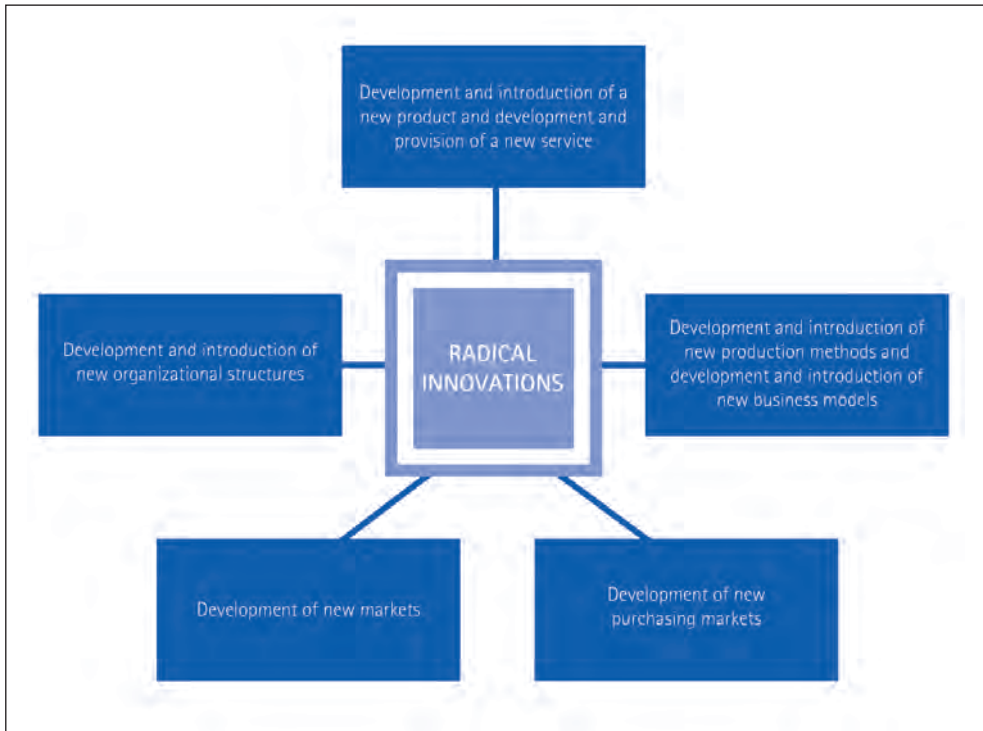
5 | Radical innovations.

Today, these five types could be additionally supplemented by the following in-novations – or in other words, Schumpeter's original types could be further dif-ferentiated. This would first include changes in how an organization handles its human capital (social innovation), i.e. how activities and procedures are structured in comparison with previous practices. A well-known example of social innovation is assembly line work (Gillwald 2000). Furthermore, the important area of financial innovation must also be explicitly noted (e.g. the organization of capital markets, payment options, opportunities and sources of corporate financing etc.). We wish to point out here that we are discussing financial innovations that have to do with the real economy, i.e. the economy that affects the financing of and investments in companies and entrepreneurship. We are not talking about innovations in finance and above all, not about the kinds of obscure speculation objects and business models found in casino capitalism that have profoundly distorted the classical mar-ket economy (short sales, banks that operate with next to no equity and thus, wit-hout any liability). Due to the fundamental importance of the Internet today, infra-structure innovations must also be mentioned (traffic, communication etc.). Finally,

another type of innovation must be discussed when the following key factors of a company's business model are changed: changes to the contribution for a certain customer or supplier group; changes to integral elements of the internal and external architecture of services rendered; changes in the selection or mix of sources that generate a business model's profits.[3]

Schumpeter's innovation types could thus be supplemented by:

- Social innovation: the development and introduction of new structures for activities and procedures
- Financial innovation: the development and introduction of new investment and financing instruments that have not been previously available as well as behaviors of market participants
- Infrastructural innovation: the development and introduction of new instruments and procedures that in the first case, facilitate the mobility of people, goods and information, and in the second case, facilitate the access to or logistics of goods and information
- Business model innovation: the development and introduction of business models (value proposition / value creation architecture / income models)

Schumpeter himself postulated innovation as »creative destruction« (Schumpeter 1946/1993: 136 f.), as the substitution of the old by something that is sometimes radically new. Innovations in this sense are the ‚other', something new that replaces what existed before. Sometimes, such radical innovations cause impressive leaps in growth. The public also recognizes such innovations as »innovation for its own sake«, or innovation in the true sense of the word. This may be the very essence of such radical innovations because they often solve important and/or urgent problems. It could, however, be related to humanity's tendency of being fundamentally interested in all things novel. Yet another reason might be that in

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3   One example of a value proposition innovator is the eBay online auction company. The value proposition of eBay's business model is the provision of liquidity for every type of interchangeable services (Cf. Stähler 2002: 79f.).
     One example of innovation in value creation architecture is Dell, the second-largest manufacturer of PCs. Dell's business model differs from the PC industry's traditional model in two respects: first, Dell sells its PCs directly to the customer, excluding resellers, retailers and system integrators from the sales process. The second change concerns the coordination mechanisms in the production of PCs. While the classical model relies on production based on sales forecasts, and thus maintains warehouse inventories of circa 90 days, Dell produces only after order intake. (Cf. ibid.: One example for innovative revenue models are the pre-paid tariffs offered by many telecommunication providers. Instead of a monthly connection fee followed by bills that cover a specific time period, the customer pays a certain amount in advance, which he uses on phone calls as desired. (Cf. ibid.: 84 f.)

the course of radical innovation, new companies and even new economic sectors develop as a result. Despite this, continual revolution or evolution, i.e. the perpetual creation of radical innovations, is essential for a company's long-term survival and sustained success.

As an analysis of the Fortune Global 500 companies shows (Raisch, Probst, Gomez 2007: 46 f.), another factor is necessary for sustainable economic success, however: the complementary goal of continual reformation or optimization, i.e. the perpetual creation of incremental innovations. In this respect, innovations can be distinguished as either new or better. Although optimization certainly seems less radical than innovation, it is always creative – though less in the revolutionary and destructive sense than in the evolutionary and developmental sense. Optimization is innovation in which what exists is replaced and/or supplemented by (hopefully) an improvement. Following Schumpeter's definition, such innovations involve »the doing of better things or the doing of things that are already done, in a better way«.[4] Following the five paths that – according to Schumpeter – lead to value-added reality, this means that growth develops through:

- The development and introduction of a new product feature as well as the development and deployment of a new service feature
- The optimization of existing production methods and existing business processes
- Penetration/reactivation/expansion of existing (international) markets
- Improvement/reactivation/expansion of existing (international) purchasing markets
- Improvement/reorganization/expansion of existing organizational structures

4 Although Schumpeter himself does not speak of such objectives, his definition certainly allows this conclusion: The first part of the definition, the »doing of new things«, means the introduction of the (radical) new; the second part, the »doing of things that are already done, in a new way«, can be interpreted as restructuring or further development.
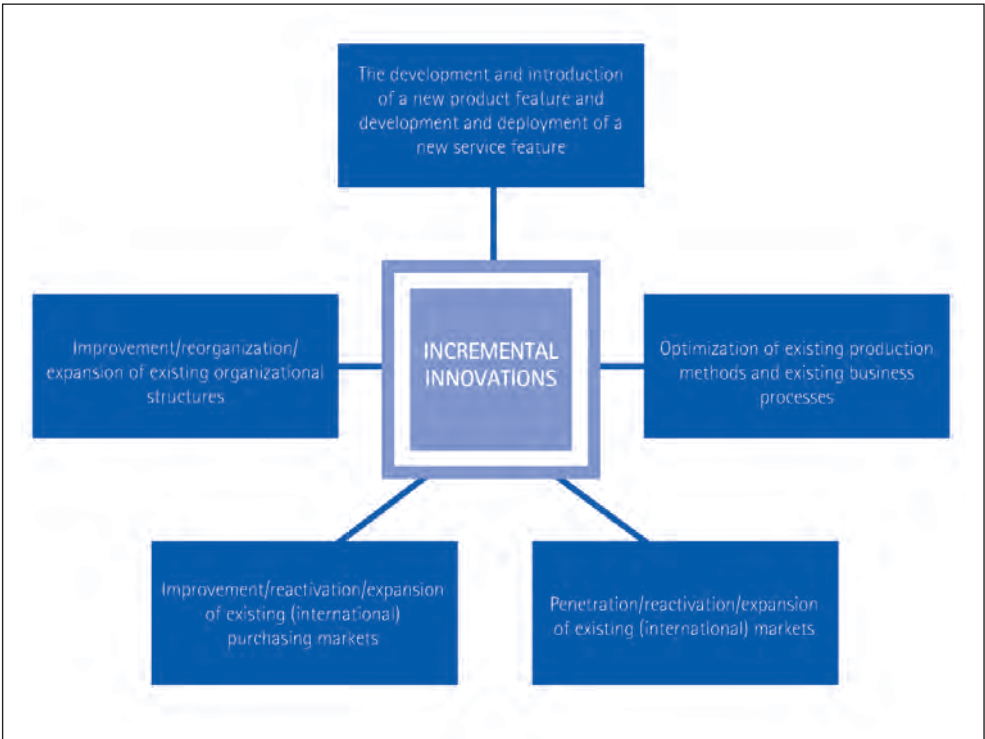
6 │ Incremental innovations.

New companies and enterprises develop when an innovation based on the above-mentioned innovation factors – or a combination of several of them – is implemented. New companies and enterprises are thus the result of changes at the level of business strategies and operational practices that logically follow from the objective [to] »do new things or do things that are already done, in a new way«. It must be noted, however, that the foundation, i.e. the ideas for new companies or enterprises do not necessarily evolve on their own. Thousands of patents have never been marketed; thousands of business concepts could be adapted and developed
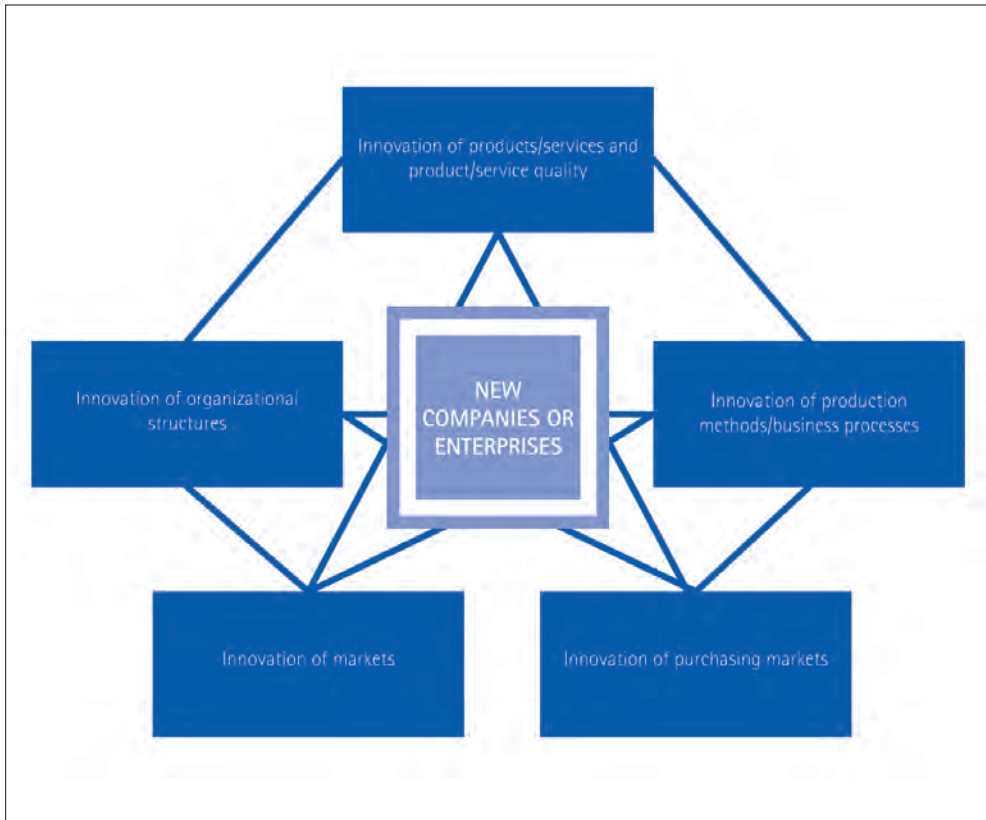
7 | New companies or enterprises.

Schumpeter's definition of innovation means that, in principle, innovation is not only possible everywhere in a company, i.e. at all levels and in all departments, but essential. Even more clearly, active innovative work, i.e. both the »doing of new things« as well as the »doing of things in a new way« must take place in all departments of a company, not only in research and development departments.
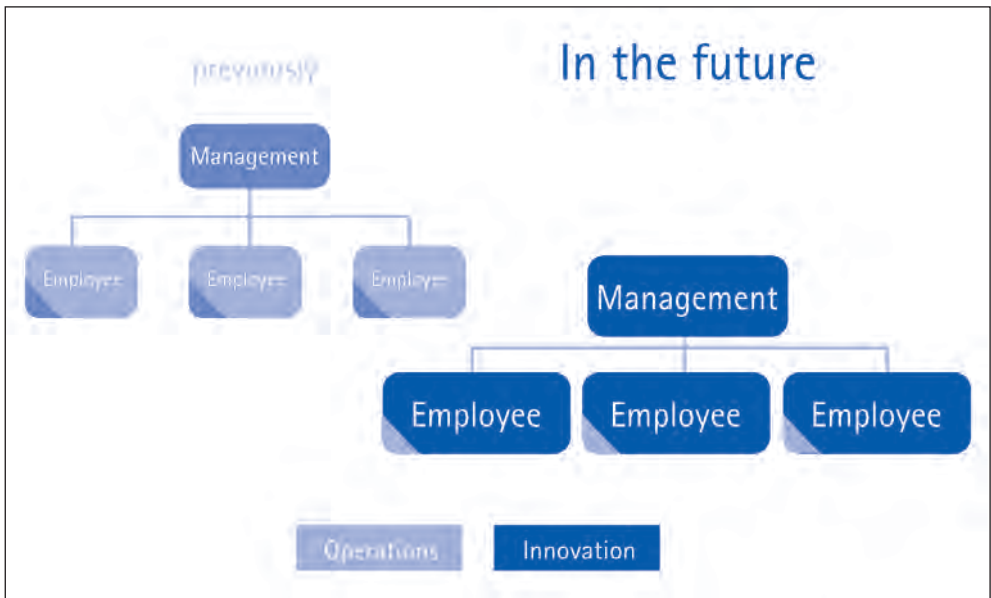
8 | An innovation-driven self-image in all areas of a company.

Being innovative is increasingly becoming the professional survival principle for everyone. An innovation-driven self-image must thus prevail at all levels of an organization.[5]

 The exceptional focus on innovation applies especially to those destined to guide organizations and societies in the future. »The head of a US government agency says: ‚As a manager, one must constantly reinvent oneself. If you think you've arrived at your goal, you haven't.'« In the words of former German Federal President Roman Herzog: »Being a dynamic entrepreneur in Schumpeter's sense is and remains the categorical imperative, the first corporate responsibility and duty [...]: in small, mid-sized or large companies, whether as the owner or as an employed manager.« (Herzog, 1996)

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5   Even in organizations whose hierarchies are traditionally tight and rigid, like the military, the situation is being rethought. Both methods of warfare (small mobile units rather than large armies) and theaters (cities, built-up areas instead of broad fronts) have changed in the last few decades. The principle of self-organiza-tion, i.e. that those in the field must make tactical decisions, are in many cases also being applied in military operations.
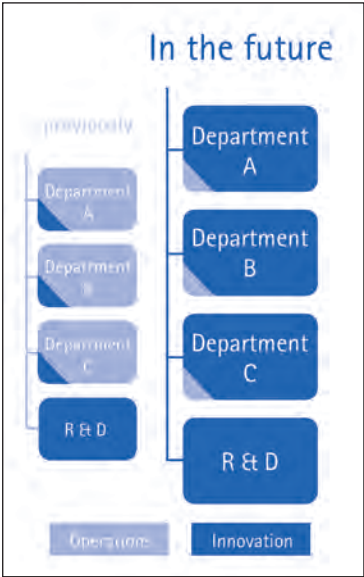
9 | An innovation–driven self–image at all levels of a company.
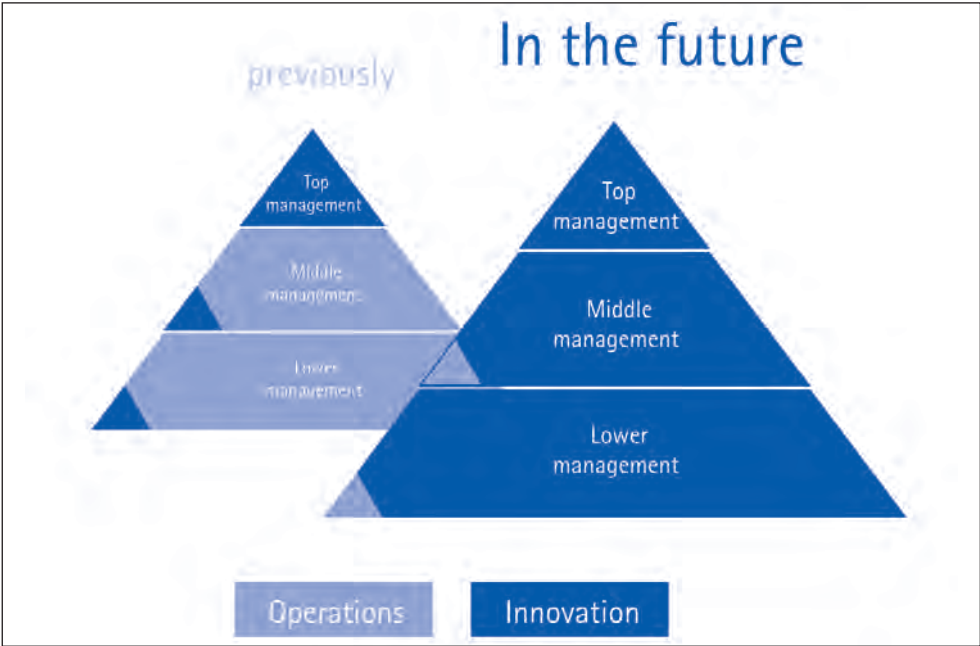
10 | An innovation–driven self–image at all management levels of a company.

3.1   A CALL FOR GROWTH THROUGH INNOVATION

In his work »The Theory of Moral Sentiments« (1759-2010), Adam Smith clearly distances himself from the point of view that people are extremely egoistic. His view is that they are not only driven by egoism, but also by mutual »sympathy«. Fundamentally, people can put themselves in their fellow human beings' shoes and are thus able to share in their destiny as well, or in other words, empathize. Furthermore, »sympathy« gives people the means to exercise self-criticism by viewing their own actions through the eyes of another. In addition to a state's monopoly on the use of force, it is above all this ability to »sympathize« that ensures the cohesion of a society. According to Adam Smith, the principle behind the market economy is thus not the self-interest of the individual. Rather, it is the actions of all market participants, which are driven by self-interest, influenced by sympathy for other humans and directed by the state to follow the most beneficial direction. Such actions in turn lead to general prosperity, to that »wealth of nations« propagated by Smith.

> Originally, ‚market economy' indicated the taming of entrepreneurial selfishness by morality founded on sympathy and the well-established rule of law and order. This original definition is often forgotten by critics of capitalism as well as by the so-called »predator or turbo-capitalists«.
> Capitalism and market economy are not the same. In fact, they are very different, with a relationship similar to that between the domesticated dog and the wolf. [...] The capitalist is the wolf of the world's economic history. The system wrought by him is totalitarian because the economic relationships put their stamp on all other relationships. Money is at the center of all of this species' thought and action – as the word »capitalism« informs us without further ado. The elevation to an »ism« indicates that we find ourselves in a temple of salvation where a concealed door always leads to fanaticism as well. This is where the glorification of profit is preached in all its simplicity. […]
> The market economist has a completely different, and peaceful, nature. He is the domesticated dog who has descended from the wolf. He is the one who has prevailed in the course of a long evolutionary process. The path to a market economy and parliamentary democracy has been reached via the spiral staircase of error. [...] The market economy no longer looks down on people who it sees as merely subjects, but on citizens who determine the course of their own lives. They are the ones who should be allowed to express their freedom on the markets – those places where providers and consumers, where

the needy and the beneficiary, where the educated and those who wish to become so – meet. […]
The market economist does not wish to deprive others, but to be useful to them. He seeks harmony that is determined via price; where one gives what the other needs. However, the market economist knows how romantic this view is. This is why he has created institutions to monitor them: supervisory authorities, regulators and consumer protection laws. Someone who says »market economy« also says »state«. The capitalist also says »state«, but says it with a contemptuous tone. He demands its subordination. The market economist is different. He does not understand private enterprise to mean a private affair. The world »beyond supply and demand« – as Wilhelm Röpke[6] put it – is near and dear to his heart. (Steingart 2013: 56)

To put it even more clearly: In our opinion, capitalism itself can and should neither be the foundation for peaceful coexistence nor should it regulate itself. That is exactly what people throughout the world have done and still do many times over: making capitalism the sole principle for coexistence, making it their religion and judge.

Properly understood, the market economy is not an end in itself but the means to an end: an increase in the »wealth of nations« (Smith 1778/1994). The market economy is the path towards the goal of »prosperity for all«. (Ehrhardt 1957: 9)

Inevitably, the expansion and increase of prosperity is coupled to growth. We call this pairing inevitable for the following reasons, among others: (Cf. for the following Edling 2008: 259)

 –   Principally, growth increases material prosperity, i.e. the supply of
     private and public goods. It thus creates the opportunity for the
     entire population to become materially independent. If and only
     if the production of goods exceeds the amount that secures a
     society's subsistence level can there be a certain degree of freedom
     regarding the means that can be chosen to satisfy needs.

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6   Wilhelm Röpke is considered to be one of the fathers of the social market economy. One of his best known works is »Jenseits von Angebot und Nachfrage« (published 1958). For Röpke, values and norms as well as law and ethics are crucial elements of a social market economy. These elements cannot and must not, however, be constituted and determined by and through the market. Only policy must carry the responsibility for their existence and essence. Accordingly, the weak should be protected, interests should be well balanced, rules set and power limited through social, economic and financial policies.

- Furthermore, the living standards of all the world's population – with its current rate of exponential growth – can only be ensured, maintained and increased through growth.
- The socio-political objective of equitable distribution continues to be easier to achieve through growth, because growth provides additional material for distribution, so that each group, albeit in varying degrees, can receive more. In periods of stagnation, however, distribution conflicts are nearly inevitable.
- In addition, structural change is facilitated by growth and thus, structural unemployment is reduced. Workers who are no longer needed because industries are dying or branches are shrinking can find new jobs in prospering industries or expanding branches.
- Growth likewise facilitates the financing of science, culture, education, technical progress and environmental protection.
- Without adequate economic growth, the social state and its social security systems would reach the limits of their financial sustainability.
- As a rule, the result of growth is that demand for ever higher work quality increases, which likewise increases employment levels as well as the general standard of education.

One could conclude with the words of Ludwig Erhard: »'Prosperity for all' cannot and must not result from a discussion about the size of or distribution of the pieces of the cake; instead, ‚the cake must grow larger'.« (Erhard 1964: 210)

> *[...] all energy available to an economy [must be aimed at] increasing its revenue – not wearing itself out by fighting about the distribution of this revenue and thus letting itself be sidetracked from the only fruitful method of increasing the national product. It is much easier to give everyone a larger piece of a growing cake than to try and profit from the struggle over the distribution of a small cake for in the latter situation, every advantage must be paid for with a disadvantage. (Ibid.: 10)*

Once again: Zero growth is antisocial!

> *We yearn to slow down our lives. And we ask ourselves what ‚growth' actually means. The result is a criticism of capitalism, which only the rich can really afford [...]. There is a mega-issue that unites repre- sentatives of highly conflicting interests and ideological positions: criticism of the pursuit of economic growth and the longing for the deceleration of dynamic economic growth. These two camps – cri- ticism and longing – forge a coalition of saturated conservatism and*

ecologically camouflaged criticism of capitalism. The call from Mein-
hard Miegel, for example, that western culture must loosen its depen-
dence on increased material well-being, is the conservative variant
of the demand by Attac that capitalism must be overcome through
a [reduction of] growth and the contraction of the economy. Nothing
speaks against stiff environmental regulations with tough sanctions
but everything speaks against foregoing productivity advances and
thus, possible increases in income. Productivity increases and growth
provide leeway for political structuring and distribution, and income
growth provides new leeway for individual decisions. It would be aso-
cial to do without these. (Rürup 2011)

Many intellectuals, on the other hand, call for an end to growth. The thinking be-
hind this is that if everyone on the planet was as prosperous as we are, we would
not need only one earth, but many, to satisfy the thirst for resources. Their demand
is thus: Down with growth! There are many fallacies behind this demand, including
the conventional thinking that all growth is the same, and the naiveté that the de-
mand »Down with growth!« does not only have economic, but also far-reaching
social consequences as well.

Our current condition is strangely schizophrenic. The arts and fea-
tures sections of our newspapers are full of calls for the end of econo-
mic growth, while the politics and financial sections of often the same
newspapers untiringly recommend how to maintain or strengthen
growth. [...] Nearly everyone desires more long-term growth for
Greece, Portugal and Spain, and many simultaneously demand an
end to growth in Europe.

This contradiction has many causes. A central one is the understan-
ding of what growth is – for an economy and a society. Critics of
growth hold the unison credo that growth is essentially a quantitative
phenomenon. The economy produces increasing amounts of goods
and services that become an enormous tower of things that satis-
fy people's material needs but that also consume enormous resour-
ces. [...] In highly developed economies, growth is not quantitative,
but qualitative. In a country with a stagnating population, economic
growth only develops through the implementation of new ideas into
marketable goods and services – [through] »creative destruction« [...].
While bitterly poor countries need more of everything, the primary
focus in Germany is the transformation of technical characteristics [or
according to Schumpeter, other innovations]. [...] This fundamentally

changes the picture. A society without growth is actually nothing other than a society without marketable ideas. […]
Such economic difficulties go hand in hand with social problems. It is an illusion to believe that economic and social innovative power can be clearly separated. After all, broad areas – e.g. art, culture and the welfare state – are financed by income from the market economy, including taxes, levies and contributions. In addition, the urban world of creativity in a modern society is intimately linked to commercial applications. If true market economy incentives are lacking, this economic weariness rubs off on the creativity of the entire civilization [...]. Soon, innovations are no longer rewarded monetarily, but only morally – via a state that provides the necessary education and control. Anonymous market forces no longer create incentives, but the state. It is hard to believe that this doesn't have consequences that extend far beyond the purely commercial. (Paqué 2013: 38-41)

3.2   CONCLUSION

In light of the world's still exponentially growing population, Ludwig Erhardt's postulate »prosperity for all« constantly gains new dimensions. Prosperity and growth are closely related. The world's inhabitants increasingly demand prosperity; the natural resources needed for growth, however, are becoming ever scarcer. Overexploitation threatens to destroy the planet in the long term and prosperity for all subsequent generations forever. Our opinion is that growth through radical and thus resource-conserving innovations seems to be the only way to simultaneously avoid distribution conflicts and the decline of our world.

4   ON THE SUSTAINABILITY OF COMPANIES

Successful companies throughout the world take up Schumpeter's concept of innovation and the resulting implications. To illustrate this, the following section presents the results of the so-called »Global CEO Studies«. The American IT and consulting company IBM has carried out the »Global Chief Executive Officer (CEO) Study« since 2004. The main focus of these studies is to identify the future challenges and plans of CEOs and to recognize trends. The studies are carried out by IBM employees – primarily senior managers – who hold personal interviews with global CEOs and senior executives from many areas of the private and public

sector. In the most recent study from 2012, over 1700 managing directors and management board members throughout the world were interviewed. The studies take place every two years; so far, studies from 2004, 2006, 2008, 2010 and 2012 have been published.

4.1   IBM GLOBAL CEO STUDY 2004: YOUR TURN[7]

The majority of CEOs emphasize growth through innovation based on a sound cost-benefit awareness. One CEO said the following:

> *Revenue growth is the key. Our company, like most players in our sec-*
> *tor, is beyond the cost-cutting stage. That has been the trend of the*
> *past two years. Now it is about growing the top line while keeping the*
> *bottom line in check. In other words, we are seeking managed growth*
> *with an eye on costs. (IBM 2004: 10)*

For most of the CEOs surveyed, growth through innovation means introducing new products and services as well as developing new markets. (IBM 2004: 13) Two other responding CEOs said:

> *»In order to grow and differentiate the business, the only way is for*
> *us to develop new products and services and in spaces that we have*
> *never dealt in before.« [...]*
> *»The main characteristic of our industry is fast change, so it depends*
> *upon who can develop new products and services quickly. If that can-*
> *not be ensured, then it is impossible to survive in this industry.« (IBM*
> *2004: 14)*
> *»You must look at new markets to drive better margins and maintain a*
> *competitive edge,« said [the other one]. »We are looking for new and*
> *unique, never thought-of channels to unserviced markets [...].« (ibid.)*

To even develop or plan these innovations, however, additional innovations are necessary in advance, e.g. the organization of collaboration within the company and with other companies.

> *When we asked CEOs to identify the actions that their organizations*
> *needed to take in order to achieve their new product development*

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7   456 CEOs and senior executives from various regions and sectors participated in the 2008 study.

goals, they focused on two particular aspects: cycle time and increa-
sing the voice of the customer by involving them more in the product
design processes. They believe this speed and customer intimacy
can only be achieved if they improve their organizations'
responsiveness and agility […]. CEOs fear that their organizations will,
in the words of one of them, get »slow and ripe« if they do not grow
faster than their competitors. (IBM 2004: 13)

According to the CEOs surveyed, these organizational innovations also help imple-
ment innovations as effectively and thus as cost-consciously as possible.

The practice of »cutting off the tail« has resulted in companies wor-
king with fewer but larger distribution partners. Redundancy programs
have been implemented. Supplier networks have been consolidated.
Processes have been outsourced and automated to achieve higher
degrees of operational excellence. Shared services have enabled
back office costs to be reduced. Payment collection has become a
military discipline. CEOs appear to be paying more attention to struc-
tural innovation with respect to internal cost structures by creating
internal shared services (e.g. in the areas of finance, HR or IT). (IBM
2004: 12)

The majority of surveyed CEOs indicate that in the future, organizations will incre-
asingly need the capacity to anticipate changing market conditions and risks and
to respond effectively to them.

Responsiveness is as much about reacting to a threat as it is about
recognizing an opportunity. […] From security and terrorism to cur-
rency fluctuations and product warranties, from pension obligations
to the threat of class action and legal liability, CEOs have hundreds of
threats to which their organization has to respond. But how? And by
how much? (IBM 2004: 19)

The CEOs all agreed that they must be agile, flexible and fast to satisfy the needs
of their customers.

Around the world, CEOs are grappling with the dilemma as to how their organiza-
tion can best respond to the riptides of these customer and consumer dynamics.
We live in a real-time world and CEOs have realized that they need to shift their
expectations. Decisions that could take weeks now require action in days. (IBM
2004: 21 f.) For greater »responsiveness«, companies must always be ready to
put their business model to the test and be able to change radically.

*With CEOs looking upward and outward for revenue growth again, but
with powerful market forces – notably competition – altering the busi-
ness landscape and with innovation becoming a sterner imperative,
organizational and strategic change is bound to occur. In order to be
able to address the next wave of growth successfully, cautious shifts
in business models are also foreseen by many CEOs; this will help
enable organizations to be more responsive. (IBM 2004: 24)*

In a fast-changing world, a company's employees and investments in their training
are the sine qua non for success.
CEOs have set their sights on agility and responsiveness – and ultimately growth –
and they recognize that it is the skills of their people [and] their capacity for change
and leadership that will ultimately determine the outcome.

*»Macro issues are sensitive but we have neglected people,« acknow-
ledged one CEO. »We must now invest in recruitment and training as
priorities.« (IBM 2004: 25 f.) If the workforce cannot be responsive
to its customers, then the business will die a slow death. »People,«
summarized one CEO, »will define the speed that the company can
adapt to change.« (IBM 2004: 26 f.)*

The speed and sustainability of entrepreneurial growth essentially depend on the
ability and willingness of people to carry out innovation.

*CEOs recognize that in order to lead successful change management
and business transformation programs, they need to call upon the
commitment and drive of their people – as well as their talent. […]
Companies that have been through the fire of restructuring recognize
that their way forward is through people and [they] are now placing
their focus on developing their capabilities. Companies that are shif-
ting their business models acknowledge that it is cultural and change
issues that will determine success. »The quality and dedication of the
people,« said one CEO, »is the only factor that makes a real diffe-
rence in finding the path to growth.« (IBM 2004: 26)*

A significant contribution to the success of a company is certainly and primarily
made by those people who initiate innovations, push them through in the face of
resistance, plan and guide them.

If there is one insight that is shared as universally as the recognition that only people can deliver on the growth agenda, then it is that people are the principal obstacle to achieving the organization's goals. More precisely, it is the deficiency of leadership and managerial skills that encumbers organizations. It is a mark of just how crucial the issue of human capital has become that CEOs cited »workforce issues« as an external barrier to change and »limited internal capabilities and leadership resources to manage change-related projects« as a major internal barrier. (IBM 2004: 26)

4.2   IBM GLOBAL CEO STUDY 2006: EXPANDING THE INNOVATION HORIZON[8]

Increasing numbers of CEOs recognize that competitiveness is determined more and more by the ability and willingness to implement innovations. Many of the CEOs surveyed emphasize, however, that innovations are not limited to the introduction of new products. More and more CEOs focus increasingly on new services as well as new sales and sourcing markets.

In many industries – such as media, consumer goods and fashion – a regular stream of product/service/market innovation is fundamental. »Innovation is our business,« explained these CEOs. As one consumer goods CEO put it, »last year's products are last year's dollars.« After all, products, services and markets form the core of the business. (IBM 2006: 16)

To increase the effectiveness of the company, CEOs also analyze innovations that are based on fundamental business processes and functions.

One CEO explained: »Although the main focus is strategically on revenue generation, we first need to create the operational and technological foundation for that growth so that product and customer strategies are sown on fertile ground.« (IBM 2006: 15)

With the increasing degree of technological advance as well as globalization, companies are finding that their innermost core, i.e. their business model, is coming under increasing pressure. CEOs must reflect on what their company will look like tomorrow.

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8   765 CEOs from various regions and sectors participated in the 2006 study.

> *Four out of every ten business model innovators were afraid that
> changes in a competitor's business model would upset the competi-
> tive dynamics of the entire industry. One CEO described his predica-
> ment in dire terms: »Since 70 percent of our business is based on a
> service that will no longer exist as we know it, we need to adapt our
> enterprise to survive.« (IBM 2006: 12)*

Many of the surveyed CEOs indicate that the ideas for innovations essentially
come from three main sources: 1. From their own company; 2. From their custo-
mers; 3. From business partners.

> *According to one CEO, »Some of the boldest plans under considera-
> tion within our company work by leveraging the collaborative potential
> of service providers in other domains.« Speaking from the perspecti-
> ve of one of those partners, another CEO saw his firm as »the R&D
> arm« of its clients. (IBM 2006: 21)*

Providing the impetus for innovation, pushing through ideas against resistance
and finally, steering the innovation process in fruitful directions are the tasks and
challenges for all areas and levels of an organization.

> *In case there was any doubt about whose responsibility it is to foster
> innovation, CEOs cleared that up quickly. Their most frequent res-
> ponse was, »I am.« The CEOs' second most frequent answer, »no
> specific individual,« essentially reflected the same sentiment. The re-
> sponsibility was simply too massive to rest on one person's shoulders
> – unless it was their own. »Leading, setting the direction, laying the
> cultural groundwork that stimulates innovation – it's essential work for
> a CEO,« acknowledged one executive. (Noticeably absent was any
> sizable mention of R&D, with less than three percent suggesting that
> the General Manager of R&D was responsible for innovation.) (IBM
> 2006: 29)*

For a company's workforce to be – and want to be – innovative, the surveyed
CEOs said that first and foremost, a corporate culture that promotes innovation
must be established.

> *The majority of CEOs described their creativity cultures as highly col-
> laborative, collegial and team-oriented – as opposed to being focused
> on individuals or pre- dominantly confined to specific subgroups. It is*

*also worth noting that companies in which the CEO orchestrates a
more team-oriented culture were decidedly more profitable than or-
ganizations with segregated pockets of innovators. (IBM 2006: 31)*

The surveyed CEOs also said that a corporate culture that promotes innovation
must also be willing to try out and integrate new ideas in the company.

*CEOs view business and technology integration as integral to inno-
vation – or as one CEO put it, »as important as water is for sea traf-
fic.« Because of the unprecedented pace and breadth of technolo-
gical change, CEOs realized its strategic impact on all areas of the
business. Most saw these advances as opportunity. They spoke of
technology enabling »daring ideas« – a way to consolidate physical
offices into virtual ones, to discover customer insights that drive pro-
duct and brand extensions and to spot emerging trends that compe-
titors miss. One CEO described how his organization avoids being
blindsided: »We get involved early on – in infancy – […] across a
range of technologies relevant to our capabilities and the needs of our
customers. We maintain a portfolio of technologies, never knowing for
certain which technology will take off next, but always having a hand
in as many relevant areas as we can identify.« (IBM 2006: 32)*

4.3   IBM GLOBAL CEO STUDY 2008: THE COMPANY OF THE FUTURE[9]

*Nearly all of the CEOs surveyed see that their companies will go
through great changes during the next few years. These changes do
not only come from market factors like customer trends, market shifts
and competitive behavior. CEOs must increasingly deal with socio-
economic and socio-cultural factors (e.g. demographic and value
changes) as well as ecological and geopolitical factors. The ability and
willingness to change – sometimes very rapidly and radically – is what
determines the future of a company. The company of the future is thus
built on the following principles: (Cf. for the following IBM 2008: 18 f.)*

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9   1130 CEOs and senior executives from various regions and sectors participated in the 2008 study.

- The company of the future accepts as self-evident the fact that it must continually change. Its company culture is shaped by transformation and the constant unpredictability that results. Values and objectives ensure orientation and cohesion.
- The company of the future positions and rewards innovators and agents of change. Thinking laterally and differently or simply being ahead of one's time, radically questioning the old, and developing new or visionary models and assumptions are fundamental virtues. Senior managers should not only regulate and control, but also give direction and inspiration.
- The company of the future initiates and accomplishes inner change in a deliberate, planned fashion. Such companies rely on Structural Change Management, which must be »a core competency at all levels and [...] promoted as a professional discipline, not an ‚art'.« (IBM 2008: 19)
- The company of the future functions like a venture capitalist: It sets up processes and structures that transform the company and uses active management to promote an investment portfolio of useful and future-oriented innovation projects.

Companies are faced with increasingly informed customers who expect their individual needs to be addressed. The company of the future will not only satisfy expressed needs but also anticipate these desires by providing »products, services and experiences that customers have never asked for, but which meet precisely these desires.« (IBM 2008: 28) The company of the future is thus built on the following principles: (Cf. the following ibid.).

- The company of the future will search for potential markets, niches and market gaps in order to respond to culture-specific and individual customer needs.
- The company of the future knows which offers are more innovative than customers expect and which offers demand too much of them.
- The company of the future connects employees at all levels of the company – from the developer to the warehouse worker – with the customer. »This allows it to work proactively with its customers and take a partnership-based approach to its customers' companies.« (IBM 2008: 29)
- The company of the future knows the value of information from various channels and sifts through them for findings concerning changes to its customers' preferences and demands.

Most of the surveyed CEOs completely embrace innovation. To differentiate themselves from the competition, they cannot only introduce new products and services,

but must also concern themselves with innovative business models (new corporate models, new sales models, new branch models). The company of the future is thus built on the following principles: (Cf. for the following IBM 2008: 54)

- – The company of the future does not only call its product range into question, but its innermost core as well.
- – The company of the future looks for trends that are changing other branches and considers how these can be used with respect to itself and its own business model.
- – The company of the future provides entrepreneurially-minded employees the circumstances under which they can also think about and implement radical changes.
- – The company of the future does not only experiment with new business models in the »lab«, but also on the market.
- – The company of the future finds the right balance between adaptation and innovation: »New and already established business models frequently contradict each other, which leads to tension in the company. Even when these models are not oriented to the same customers, they claim the same resources and the same attention. The company of the future actively manages these potential conflicts. In this manner, it can test bold business model innovations and simultaneously ensure that its existing business model continues to deliver the desired results.« (IBM 2008: 55)

4.4   IBM GLOBAL CEO STUDY 2010: CORPORATE GOVERNANCE IN A COMPLEX WORLD[10]

In the face of a dynamic, increasingly complex world characterized by upheaval and new beginnings, new questions continually develop for which previous answers do not really seem to fit. »The CEO of a Brazilian telecommunications company gave the following forecast: ‚In five years, services that currently account for 80 percent of our sales will only be our second most important revenue stream.‘« (IBM 2010: 14) In more positive terms, this world is an environment that truly embraces change. The leadership qualities considered by the surveyed CEOs to be crucial for this kind of environment are creativity and integrity. In particular, creativity enables people to make new or different things. The authors of this study therefore make the following recommendation: (Cf. for the following IBM 2010: 32)

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10   1541 CEOs and senior executives from 60 countries and 33 sectors participated in the 2010 study.

- Promoting creativity in every possible manner: Here, barriers must be overcome and partnerships entered that promote knowledge-sharing and collaboration in- and outside the company. Senior managers, especially CEOs, play a special role because they act as designers and role models.
- Using opportunities for new business models: Here, the entire management must be motivated to reassess and redesign its established company, sales and branch models. »Pursue the Green Field approach – what would you do if you were new and knew nothing of a company's ‚legacy issues'? Question seemingly undisputed industry practices. Even if you think you already know the answer, ask ‚why' yet again.« (IBM, 2010: 32) Performance and trends in other branches can serve as inspiration.
- Throw traditional leadership styles overboard: Here, employees' abilities to organize themselves must be encouraged and pushed, creativity must be established as a central element of the company and finally, less formal, flatter communication channels must be put in effect.

In a rapidly changing and complex environment, successful companies of the future will give the following factors high priority: Flexibility in meeting customer requirements, sensitivity to specific cultural characteristics (»glocalization«), streamlining customer processes, rapid decision-making, iterative strategic processes and the ability to implement rapidly. (IBM 2010: 55) The authors of this study therefore make the following recommendation: (Cf. for the following IBM 2010: 58)

- Simplifying operations whenever possible. To do this, the complexity of interactions with customers and their access to products and services must be reduced as much as is possible and necessary. Despite the necessary and desirable underlying complexity, customers should be able to deal with processes, products and services that they can intuitively handle.
- Managing systemic complexity: Here, companies must systematically identify, quantify and reduce complexity and inefficiency throughout their organizations and along the entire value chain.
- Attitudes that promote speed and flexibility: First of all, the insight that one can never »know everything« and that decisions in a dynamic and complex environment are always connected with a certain amount of uncertainty. Second, barriers due to procedures or guidelines must be eliminated and employees at the appropriate levels must be furnished with the authority to act and make decisions.
- Thinking and acting »glocally«: Here, the right balance between global and local must be found. Cultural differences sometimes play a major role in the success or failure of products and services. To react quickly, cooperation with local partners is a crucial success factor.

4.5   IBM GLOBAL CEO STUDY 2012: LEADERSHIP THROUGH NETWORKING[11]

Without a doubt, control will continue to be necessary to promote standardization, avoid inefficiency and guarantee compliance with legal provisions. But nonetheless, most of the CEOs surveyed make it a priority to enable employees to contribute their own ideas and take responsibility as well as act on their own initiative. In the tension that can arise between control and openness, a focus on corporate values and clear goals serves as the foundation for decisions and actions.

> *In an open environment marked by constant change and increased complexity, organizations need a new way of enabling everyday decision making. Employees must instinctively know how to handle unexpected situations. Their choices and actions are best guided by shared beliefs and values. (IBM 2012: 24)*

This type of corporate culture requires other management systems and organizational structures.

In a rapidly changing world, we must promote unimpeded communication and eliminate hierarchical levels to act quickly, explained the CEO of a Japanese provider of professional services. The CEO of an insurance company in the Caribbean was even blunter: »We need to blow up the hierarchy so ideas can flow up more easily.« (IBM 2012: 23)

Such a culture also requires employees who – against the backdrop of constant change – can act under the premises of »operational control« and »responsible use of freedom«. The consensus of CEOs across all sectors is that the »future-oriented employee« has the following personal qualities: the ability to work in a team and to communicate; creativity, flexibility and the willingness and capacity to constantly reinvent oneself and learn new things as well as a mentality that makes one feel comfortable in a world of change. (IBM 2012: 20 and 21)

»For CEOs, it's no longer a question of should the organization become more open and collaborative? But rather, it's how do I run an open organization?« (IBM 2012: 24) When training employees to deal with this kind of openness, leaders do not ask the question: »How can I teach my employees to be ‚fit for the future?« The much

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11   The approximately 1700 CEOs who participated in the 2012 study come from different-sized companies and organizations from 64 countries and 18 sectors. 86 percent of these are in established markets; 32 percent are in growth markets. Circa half of these CEOs (52 percent) are the directors of global or multinational companies; the remaining 48 percent focus on individual countries. The answers of the CEOs were weighted based on the real gross domestic product from 2010. (IBM 2012: 58)

more important question is: »How do I create an environment in which employees can develop their ‚fitness for the future?«

The majority of the CEOs surveyed seek cooperation with partners to keep up with the growing complexity and dynamics of the world. In recent years, many companies have undertaken quite significant steps to increase their openness and transparency towards customers and employees. This kind of openness and transparency with partners, however, is still difficult.

> *»We tend to see everyone as a competitor," admitted a banking CEO from Vietnam. "We need to see them as partners. We need to find win/ win solutions and share profits. But this is a cultural shift; it's hard to change.« (IBM 2012: 45)*

Although there are still major hurdles, more and more companies are deciding to partner with other companies in order to come up with innovations. »Ironically, the need to be unique in the marketplace — to differentiate — increasingly requires organizations to work together.« (IBM 2012: 46)

4.6   CONCLUSION

According to Joseph A. Schumpeter, an innovation is a – sometimes radical – (re-) shaping of an existing, so-called »process of creative destruction«, which creates something new by eliminating something that has previously existed. At this point, we would like to emphasize that the CEOs in the studies described above understand the term ‚innovation' exclusively in the sense that Schumpeter used it, namely that being innovative always means more than simply introducing new products. To sustainably secure and develop competitiveness, an organization's corporate development measures must be oriented to all five of Schumpeter's factors.

Another key finding that the overwhelming majority of the CEOs agree with is that innovations neither develop solely in their research and development departments nor are they solely the result of decisions made by top management. Opportunities for optimization or renewal are available in every area and at every level. It is up to every employee and every manager to help create a better and new reality.

Ultimately, the CEOs agree that in a world full of risks and uncertainties, the only companies that will have long-term success will be those that innovate constantly, in all areas and to the utmost possible extent.

5   THE SUSTAINABILITY OF ECONOMIES

The results of three studies by the German Institute for Economic Research (DIW Berlin) confirm the positive link between innovation in a country and its economic situation and/or labor market. (Lachenmaier, Woessmann 2004; Lachenmaier, Rottmann 2007a and b). The authors of these studies conclude thus: »Industrialized countries may have to continually innovate if they want to remain competitive on global markets and maintain their living standards.« (Lachenmaier, Woessmann 2004: 25)
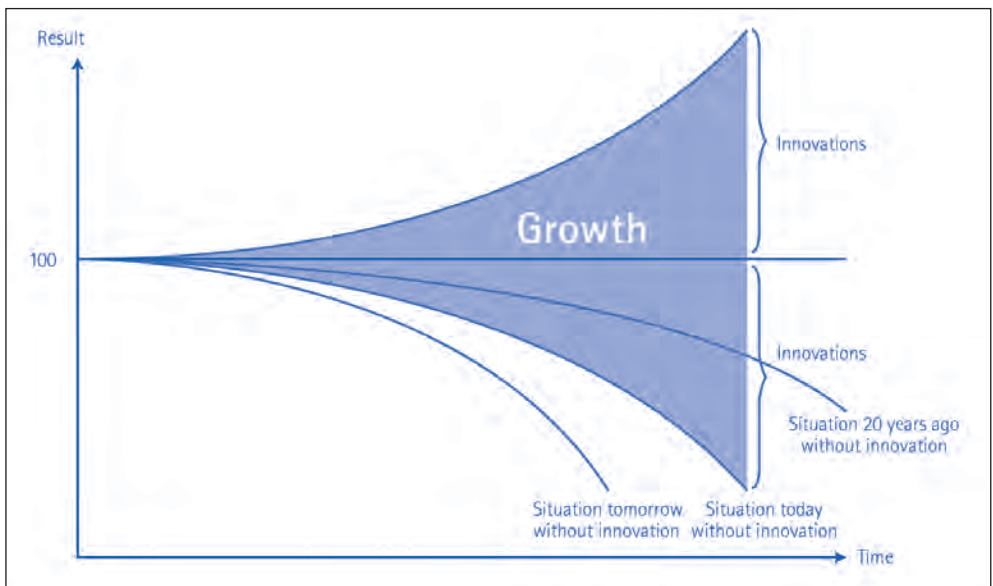
11 │ Growth through Innovation. (Faix 2008: 20)

The following chapter examines the innovative competitiveness of four economies. The crux of the issue in this chapter is the question: How do these countries perform when we investigate their ability to conceive of new and/or better ideas and create added value? We will focus on the USA, Germany, Brazil and China. These countries were selected for the following reasons:

−   The USA is the supposed world champion in regard to »radical innovation«
−   Germany is the supposed world champion in
    regard to »incremental innovations«
−   Brazil and China are two emerging economies in
    transition to becoming supposed world powers.

We will compare the innovation performance of these countries, based either on innovation reports or innovation rankings. Innovation reports use indicators to compile and compare different aspects of the ability to innovate, as well as of innovation performance. The individual indicators or individual findings are not, however, prioritized and merged to obtain a total index or overall picture. Well-known examples of innovation reports are the OECD Science, Technology and Innovation Scoreboard or the German federal government's annual report from the Expert Commission on Research and Innovation (EFI). Innovation rankings reduce the complexity of the results by calculating several sub-indices and a total index. Several individual indicators are prioritized and summarized in sub-indices. The sub-indices map different influencing factors, conditions, inputs and outputs. The sub-indices are also prioritized and in turn summarized into an overall index.[12] This method focuses on changes that must be made to framework conditions for innovation and to the effort being put into innovation. For an overall impression of the innovative capacity of the above-named countries, the results of the following three innovation rankings will now be presented.[13]

−   Global Competitiveness Report (GCR) (WEF 2012)
−   The Global Innovation Index 2011 (Dutta 2012)
−   Innovation Indicator for Germany 2012 (BDI&DTS 2012)

5.1   GLOBAL COMPETITIVENESS REPORT

For more than three decades, the World Economic Forum (WEF) has examined the competitiveness of national economies in its annual Global Competitiveness Report (WEF 2012). This report defines competitiveness as follows:

> *We define competitiveness as the set of institutions, policies, and factors that determine the level of productivity of a country. The level of productivity, in turn, sets the level of prosperity that can be earned by an economy. The productivity level also determines the rates of return obtained by investments in an economy, which in turn are the fundamental drivers of its growth rates. In other words, a more competitive economy is one that is likely to grow faster over time. The concept of*

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12   These areas are often described in English-speaking studies as »pillars«.

13   Two further innovation rankings are: »A new ranking of the world's most innovative countries« (Economist Intelligence Unit 2009) and »The innovation for Development Report« (López-Claros 2011). The former ranking is somewhat older (2007 or 2009); in regard to the latter, no ranking was available for 2012 at the time this work was written.

*competitiveness thus involves static and dynamic components: alt-
hough the productivity of a country determines its ability to sustain a
high level of income, it is also one of the central determinants of its
returns to investment, which is one of the key factors explaining an
economy's growth potential. (WEF 2011: 4)*

The Global Competitiveness Report (GCR) does not further define the concept
of »innovation«. The selection of the individual GCR indicators in general and
the selection of indicators used to create the sub-index »Innovation« (see below)
in particular, however, does allow us to reach the following conclusion: The term
»innovation« tends to be reduced to technical and technological innovations or im-
provements. In other words, the GCR uses »innovation« primarily in Schumpeter's
sense of the development and introduction of a new product and/or a new pro-
duct quality; the development and introduction of new, or optimization of existing
production methods as well as the development and introduction of new and/or
optimization of existing business processes.[14] The overall index of the reports,
the so-called »Global Competitiveness Index (GCI)« is based on three indices. In
calculating the aggregate indices, these are weighted differently: »Basic require-
ments« (weighting of 20%), »Efficiency enhancers« (weighting of 50%), »Innovati-
on and sophistication factors (weighting of 30%). These indices, in turn, have a to-
tal of twelve sub-indices, the so-called »competitiveness pillars«, that are intended
to convey a comprehensive picture of a country's competitive situation.

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14   In regard to the maturity level of marketing, it is probably the development of new and/or the optimization
     of existing markets that is being addressed.
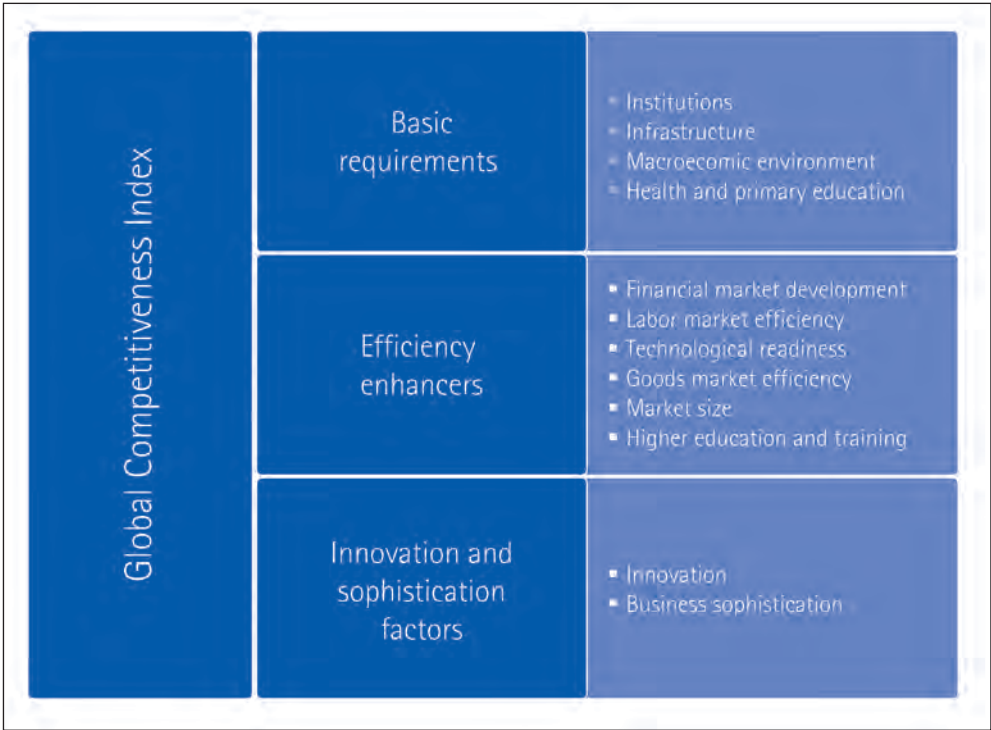
A country's respective assessments and classifications are based both on evaluations of publicly available »hard« facts as well as on the results of the Executive Opinion Survey, a comprehensive public opinion poll carried out each year by the WEF. More than 14,000 business leaders in 142 countries were interviewed for the GCR presented here. Altogether, the global ranking is based on over 110 individual indicators. Both the overall index as well as the results of the sub-indices and the individual indicators are the result of a rating scale from 1 to 7, with 1 always representing the lowest value (least agreement with a proposition) and 7 reflecting the highest value (highest agreement with a thesis). In the Global Competitiveness Report surveys, Brazil, China, Germany and the United States developed as follows:[15]

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15   The associated table can be found in the Appendix to this work.
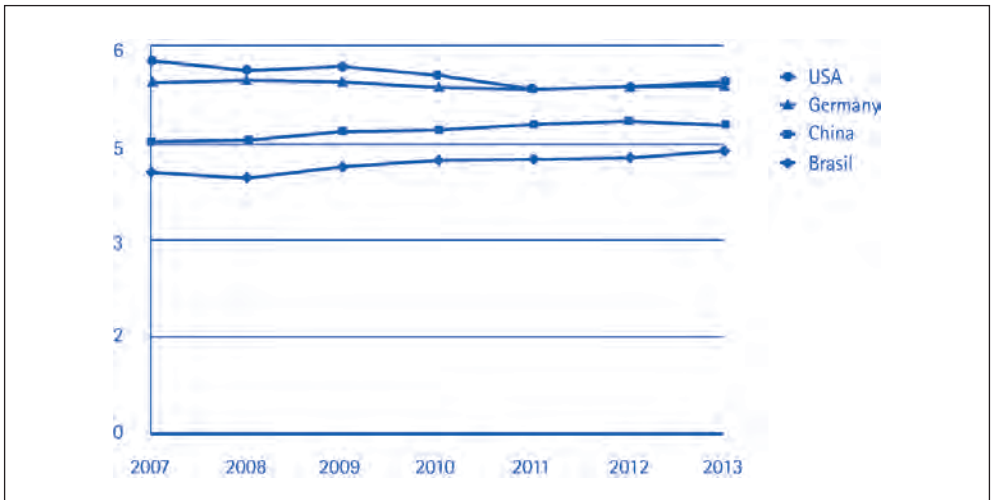
13 | Development of Brazil, China, Germany, USA in GR overall index. (2007 to 2013).

5.2   THE GLOBAL INNOVATION INDEX

The Global Innovation Index (GII) has been produced out by the INSEAD business school and other partners since 2007.[16] It examines the innovation capacity and performance of 125 countries. The GII combines hard facts and qualitative data from various studies, such as those from the World Economic Forum, the United Nations, the World Bank and the OECD. The GII defines the concept of »innovation« broadly and in three ways: 1. the nature of innovation (radical and incremental innovations), 2. the innovation forms mentioned by Schumpeter, and 3. the location in which an idea becomes a reality (business, society etc.):

> *Innovations are no longer restricted to R&D laboratories or published scientific papers [...]. New or significantly improved product, processes and methods in the provision of services; in business and organizational models; in low-tech industries; through creative imitation and technological catch-up; at the public level or at the level of society, all constitute innovations. (Dutta 2011b: 1)*
> *An innovation can be new to the world, or new to a sector or market, or new to an agent. [...] Innovation also occurs when a firm introduces a product or process to a country for the first time. It occurs when*

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16 Booz & Company, Alcatel-Lucent, Confederation of Indian industry and the UN World Intellectual Property Organization.

other firms imitate this pioneering firm. Moreover, it occurs when the
initial or follower firms make minor improvements and adaptations
to improve a product or production process, leading to productivity
improvements. In short, innovation occurs through 'creative imitation'.
(Dutta 2011a: 4)

The GII is based on the two indices Innovation-Output and Innovation-Input[17], which effectively map a country's circumstances and effective innovation performance. The Innovation-Input index builds on five sub-indices; the Innovation-Output on two. These sub-indices are in turn divided into several areas comprised of individual indicators. Altogether, the GII is comprised of 84 individual indicators.
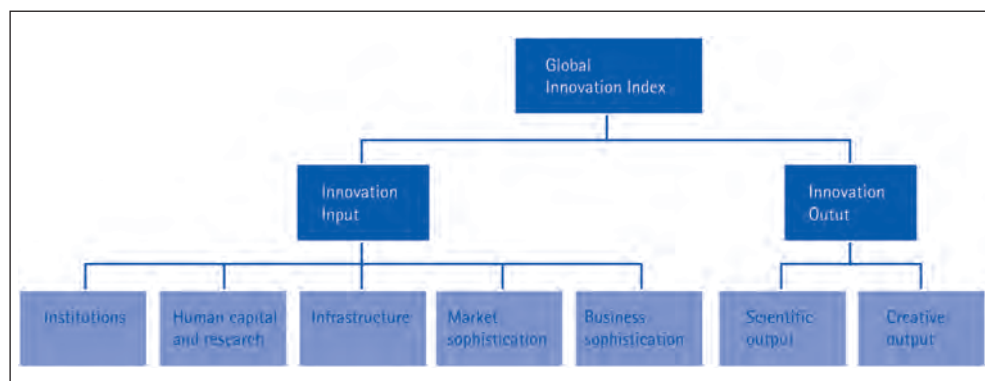
14 | The pillars of the »Global Innovation Index« overall index. (Cf. Dutta 2011a: 9).

The individual indicators are based either on hard facts, on surveys of experts or are »composite indicators«, i.e. the result of the combination of several other indicators. The individual indicators, sub-indices and indices can be rated with a value between 0 and a maximum of 100.[18]
In the Global Innovation Index, Brazil, China, Germany and the United States have developed as follows:[19]

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17 In the first version of the GII (2009), the Innovation-Output indices were collected using other sub-indices,
    i.e. different indicators than in subsequent versions. For this reason the year 2009 is missing in the following
    tables and charts referring to the development of the Innovation-Output indices.
18 The 2009 GII version uses a scale of 0 to 10. These values were converted in the following tables.
19 The associated table can be found in the Appendix to this work.
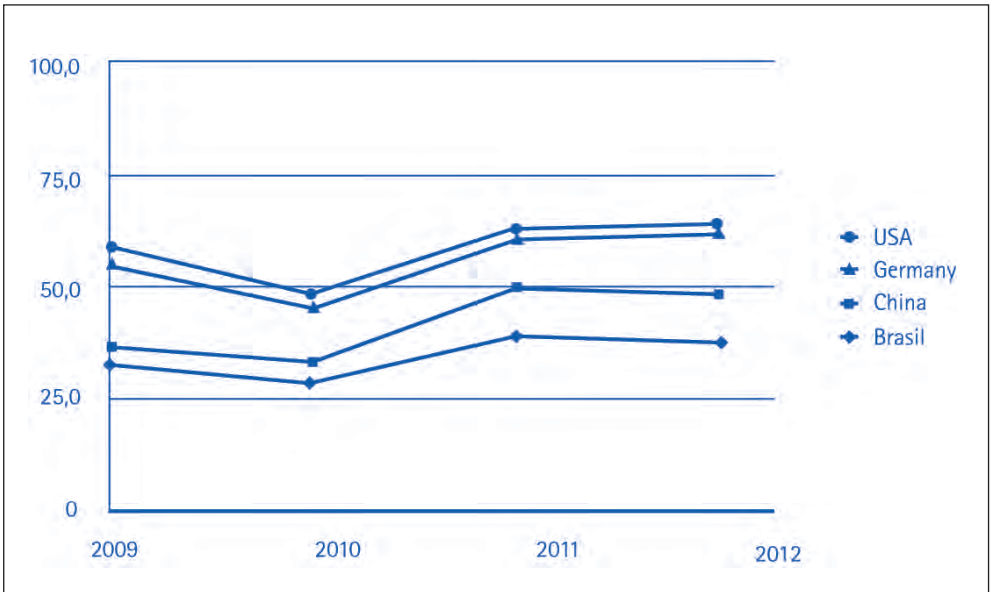
15 | Development of Brazil, China, Germany, USA in the GII indices. (2009 to 2012)

5.3   INNOVATION INDICATORS

The report »Innovation Indicator for Germany« has been produced every two ye-
ars since 2005. The innovation indicator is developed by a consortium of three
institutes. The chair of the project is held by the Fraunhofer Institute for Systems
and Innovation Research (Fraunhofer ISI). This Institute is in turn supported by the
Center for European Economic Research (ZEW) and by the Maastricht Economic
and Social Research and Training Centre on Innovation and Technology, Maast-
richt University (MERIT).

The innovation indicator takes a »decidedly German perspective« (BDI&DTS 2011:
10) on the one hand by taking into account the requirements of the German in-
novation system and on the other by going into Germany-specific political and
economic questions and needs. (Cf. ibid.) In this respect, the innovation indicator
shows the relative strengths and weaknesses as well as the relative position of a
total of 28 economies[20] that are oriented to science, technology and innovation. In

20   In view of the smaller selection of countries – in comparison to the previous studies – the following will use
     no benchmark in relation to a comparison group.

other words, the innovation indicator always maps the position of a country relative to all the other countries surveyed. In the best Schumpeter sense, a standstill in innovation always means a step backwards. (BDI&DTS 2011: 18)

In the innovation indicator, innovation is defined as:

> *[...] the implementation of new ideas; i.e. innovation processes are seen holistically – from the initial idea through research, development and systematization to market development, market launch and to market success. Innovations are not exclusively of a technical nature. The provision of services, methods or processes can also be innovative and have the goal of creating something new or doing something better. (BDI&DTS 2011: 19)*

Although this definition of innovation appears to be very broad, the individual indicators listed below provide a different impression. It must be noted that although the innovation indicator is not restricted, it significantly over-emphasizes product or production innovations. The theoretical basis of the innovation indicator is the heuristic concept of innovation systems. According to this concept, it is not just the actors themselves, but also their interaction and mutual influence that make a system – for example, a whole economy – successful. The most important actors are shown in the following figure.
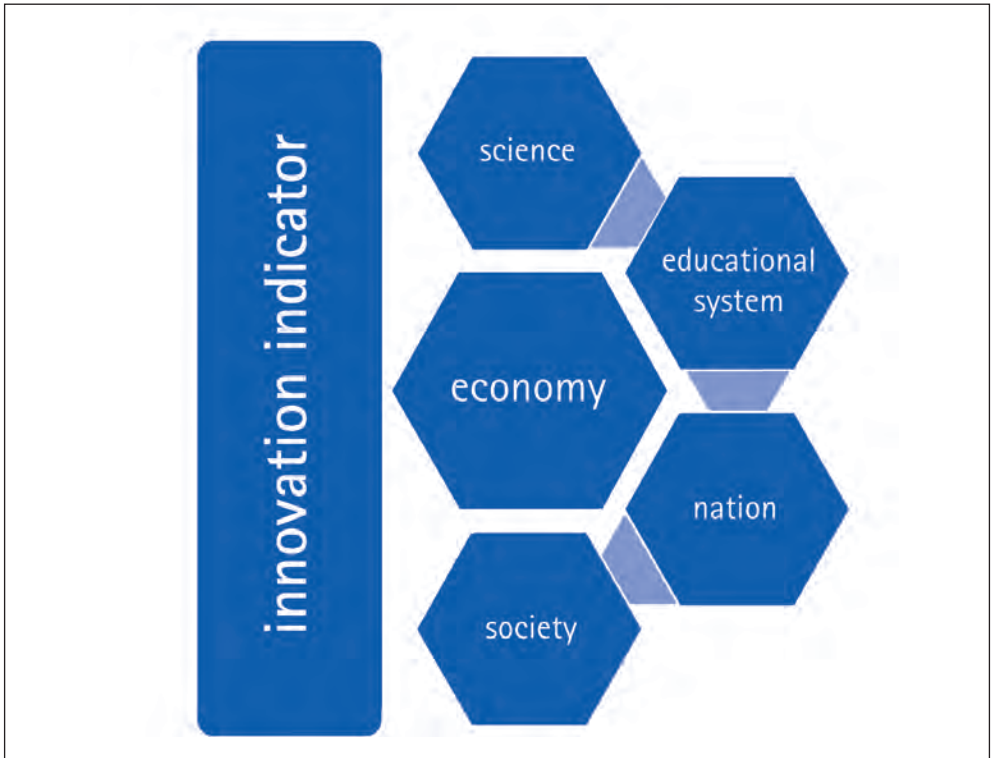
16 | Model of the innovation system in the innovation indicator. (Cf. BDI & DTS 2011: 11)

At its core, the economy is the main actor that brings about innovations, i.e. that transforms ideas into competitive, value-adding innovations and improvements. This innovation performance is made possible through, among other things, the involvement of the subsystems science, education, nation and society. The scientific system drives, for example, the basic research on which new technologies are based. The educational system gives people the basis for innovation, e.g. the skills needed to use knowledge in a productive manner. Nation and society create important framework conditions or define values. (Cf. BDI&DTS 2011: 11 f.)

If we take as our background the economic model of interdependent innovation systems mentioned above in addition to the definition given of innovation, we can see that indicators for research and development processes are not the only ones that industrial companies need to consider. Indicators related to implementation, demand or political and legal frameworks are also proving significant and thus relevant for describing a country's innovative power. The focus of the 38 individual

indicators is on »hard facts« (74%) supplemented by opinions and subjective fore-
casts (26%). (BDI&DTS 2011: 85) In the surveys of the innovation indicator, Brazil,
China, Germany and the United States developed as follows.[21]
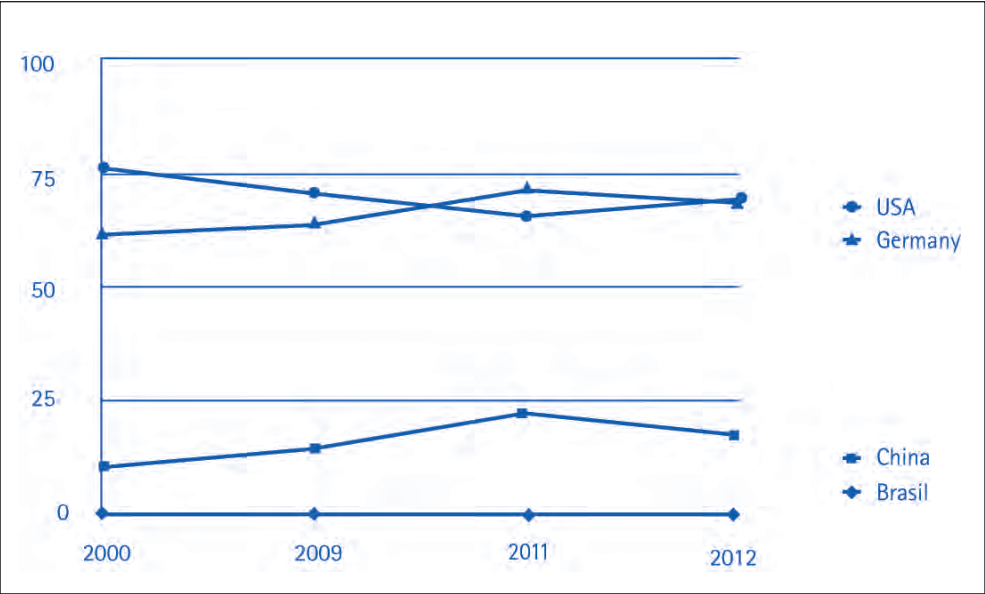
17 | Development of Brazil, China, Germany and the USA (2000, 2005, 2011, 2012);
innovation indicator for the overall ranking

5.4   INTERPRETATION OF THE RESULTS

The rankings and reports listed above use similar methodological approaches. Ne-
vertheless, the individual studies reach more or less different results regarding the
position of individual countries.

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21   Over the years, the authors of the innovation indicator often used other survey methodologies and designs.
In the current version for 2012, the data for 2000 and 2005 were processed to enable a comparison with
data from the 2011 and 2012 studies.
The results from Brazil cannot be compared to those of other countries because none of the Brazilian in-
dicators reach even the lowest value of any other countries in the benchmark group. Each of the Brazilian
indicators thus has an index value of zero. The associated table can be found in the Appendix to this work.

This is due primarily to the following reasons:

- The overall indicators are composed of differing and/
  or a varying number of indicator areas
- The indicator areas consist of a combination
  of different individual indicators
- The indicator areas are differently weighted in
  the respective overall indicators
- The individual areas were differently weighted
  in the respective overall indicators
- To the extent that »soft« indicators based on interviews with experts
  or other assessments were used, it must be borne in mind that those
  providing the information had different information about the individual
  countries or indicator areas, or gave a specific answer for strategic reasons

These are the main reasons why some countries – including Germany – have been rated near the leading group in some rankings, but only fall in the upper middle range in others. Nevertheless, some of the results prove extremely constant across all studies:

- Switzerland always holds a leading position in the country rankings.
- In spite of a certain downward trend, the United
  States is always among the top 10 countries.
- The respective top 10 places in the rankings are
  primarily dominated by European countries.
- Despite a more-or-less sizeable upwards trend, the emerging
  countries Brazil, Russia, India, China and South Africa are clearly
  behind the developed industrialized countries in all rankings.

Switzerland is the leader in many areas, but its absolute contribution to global development is limited due to the size of its economy. No matter which indicator is examined, Switzerland's innovative capacity and activity is astonishing and enviable. This does, however, raise the question as to what degree can the undoubtedly successful structures and processes in the »small« and »free« country of Switzerland serve as a model for large countries such as the USA, China and Brazil, or for countries such as Germany which are organized into supranational entities. In regard to the results of the innovation rankings, the United States and Germany are good in many areas, but no more than that. The crises of the last decade have also afflicted the United States, but it is striking that the United States is always faster to recover than other OECD countries. In our view, this is because the US

economy and its innovative capacity and activity are highly diversified. Despite all prophecies of doom, the United States still remains an impressive economic power that is based on a broad foundation.

Although Germany and its economy have been admired worldwide in recent times, we have to agree that the above-mentioned economic diversification could be Germany's weak point. The focus of research and innovation by companies within the OECD countries lies on cutting-edge technologies and services. Germany exhibits a substantially different structure: the focus here is on »superior applied technologies«. In the case of expenditures for R&D and patenting, for example, the technology fields of chemistry, vehicle construction, mechanical engineering, »classical« electrical engineering and high-quality instruments are disproportionately represented (BMBF 2007: 44). Legler und Krawczyk (2006: 33) summarize: »In the most dynamic economic sectors, Germany's presence is both weak (quantitatively) as well as not very research-intensive; usually the one causes the other.« Harhoff (2008: 55) writes: »Loosely formulated, while other countries and regions are putting increasing R&D capacity into services and cutting-edge technology in order to participate in the above-average growth in these areas, Germany continues to concentrate on the mature industries of chemicals, machinery and automobiles.«

In short, this means that »as a national economy, Germany's orientation is on incrementalism. The economic successes of German companies (and, hence, the prosperity of the country's citizens) are based on the mastery of less mature technologies« (Harrhoff 2008: 49). Once again: Germany is without doubt as economically strong as it is due to – and precisely because of – its focus on the so-called »old economy«. At the same time, we ascertain that Germany's prosperity is based on a twofold constriction: 1. restriction to mature technologies and 2. limitation to the optimization of this technology.

Brazil and China are already forging ahead, but nothing more. There can be little doubt now that, above all, these two nations will strongly influence the coming century, due both to their size and to their ever-growing innovative capacity and activity. Both countries have immense economic dynamism, which is of course related to their rich mineral resources and great pool of (still) cheap labor, but that's not all. Both Brazil and China have recognized the importance of innovation and are orienting their economic future to it. Despite the tremendous efforts of the two countries to develop their innovative capacity and activity, they still have the same problem to contend with: the sheer size of their countries.

5.4.1   INTERPRETATION OF THE RESULTS FOR BRAZIL

For more than a decade, Brazil has been doing a great deal to get ahead economically – and the results are impressive. Despite the fact that Brazil was long notorious for its fiscal inefficiency, it succeeded in reducing the government debt compared to its gross domestic product (GDP) to a relatively low level; its debt ratio is lower than that of many European countries and the United States. The country is also attractive for investors due to its huge internal market, which is the seventh largest in the world.

Nevertheless, Brazil – in comparison to the other BRICS states – suffered the largest crash in the rankings. This is above all due to structural weaknesses that will continue to demand long and intensive effort from the country. First of all, there is the problem that Brazil shares with all the other BRICS countries: its sheer size and the challenge of even beginning to build an infrastructure. A further problem that Brazil shares with many other emerging nations is excessive bureaucracy and the associated paperwork, for citizens as well as companies.

The figures from the World Bank's »Doing Business« report that were used in the rankings show that business start-ups in Brazil require a great deal of effort. Add to this the fact that Brazil is still affected by the plague of corruption. According to Transparency International's Corruption Perception Index, this problem has only worsened in the past ten years.

De Brito and de Mello (2006), however, state that »Brazil's poor record in educational attainment is among the key obstacles to the generation and diffusion of innovation«. (de Brito and de Mello 2006: 23) One of the main reasons for this is the imbalance in the allocation of resources in Brazil. The country spends much more money on generous pensions than on education. To put it bluntly, Brazil invests much more in the past than in the future – a phenomenon that is not only found in Brazil, but in many emerging economies and industrialized countries!

5.4.2   INTERPRETATION OF THE RESULTS FOR CHINA

Without a doubt, China is conspicuously seeking to attain first place in the world. Although up to now China's competitiveness has been driven by low wages and the associated price advantages, it has already become apparent that China understands the significance of innovation and has rejected plagiarism. The Chinese government's five-year plan from 2011 suggests that in the medium term, China

wants to strengthen its own technologies and lessen its dependence on technological imports from industrialized nations. It is significant that the huge country of China, which has actively developed its innovation system for only a decade or so, has been able to leave a number of western industrial nations in the dust.

China has major ambitions for rapidly modernizing itself via innovation. In regard to its absolute contribution to global technological development, however, China will play an important role in the future (in addition to the USA, Japan and Germany) not only due to its size. But it can only realize its ambitious objectives if it gives top priority to the education and training of its population as well as the development of its research and science infrastructure. China is thus investing enormous sums at breathtaking speed.

Even if there is no automatic connection between investment in research, well-qualified employees and innovation, it is highly probable that China will not only become the largest customer for new technologies in coming decades, but also one of the largest suppliers. This applies not only to labor-intensive products based on technologies developed elsewhere, but also to products based on Chinese inventions.

Despite this, it must be noted that China still has a long way to go, because only those people living on the eastern edge of this vast empire really participate in the country's growing prosperity.

5.4.3   INTERPRETATION OF THE RESULTS FOR GERMANY

Overall, it can be noted that Germany has a very well-balanced portfolio of innovative goods and technologies destined as exports to world markets, above all in the automotive area, mechanical engineering, the electrical industry and some areas of the chemical industry. In many parts of the world, products »Made in Germany« still have a very good reputation.
Unlike other countries – in particular, emerging industrial nations such as South Korea, India, or even Singapore and Taiwan – the German economy is very internationally oriented and less focused on the broad North American market.[22] In Schumpeter's sense, this means that Germany's strength is due to its strong innovative drive in creating market outlets, among other things.

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22   This may also explain why Germany achieves a top position in transnational patent applications, but not in patent applications with the US Patent Office.

A further strength of Germany is the intensity of its local competition; this makes the demanding national markets – in addition to international markets – an additional driver of continuous innovation.

The largest deficits, however, still remain in the field of education. Although Germany holds a leading position in terms of the proportion of employees with at least an upper secondary-school education (»Abitur« and/or vocational training) or training as master craftsmen (»Meister«) or technicians, this is one of the few positive exceptions. There is no doubt that the German education system needs some basic reforms to match the quality of education systems in other countries. Discussions on large, nationwide structural reforms, however, have been broached hardly or not at all in recent years. The activities of some individual federal states have remained experimental half-measures until now, and are not based on a clear concept.

5.4.4   INTERPRETATION OF THE RESULTS FOR THE USA

In current surveys, the United States is now ranked only in the middle range. Its slide from the top to a place in the upper middle range is certainly due partially to the banking and economic crisis, which began in the USA and also had the strongest impact there. However, this development also reflects structural problems that threaten to keep it in this place in the medium- to long-term.

The biggest weakness of the United States and the main reason for its drop in the overall ranking appears to be its science system, in which ever less is invested, leading in turn to increasingly poor performance. This may be a surprise and may even be doubted in view of such beacons of excellence as MIT or Stanford University, which are undisputedly among the most important and best scientific research organizations in the world. But considering the whole academic system in the US is considered, i.e. the overall breadth of academic institutions, any impression of ideal conditions fades. In terms of the size of the country or of the number of its employees, for example, total investment in science and research tends to be below average in international comparisons.

Without a doubt, the leading US universities and research institutes are absolutely first- rate. But due to the almost obsessive focus on these institutions, the bulk of US universities and research institutions are in danger of slipping even below the international midfield.

5.5   CONCLUSION

In this chapter, we attempted to take as broad a view as possible of the innovative capacity and activities in different economies. In general, we criticize the related innovation rankings for their excessive focus on technical innovations – even though some rankings claim the opposite. We emphasize once again that innovation should not be reduced to this one dimension. Undoubtedly, new products provide important impulses for securing and further developing competitiveness. However, when a country limits itself solely to marketing better and newer products, it cannot fully exploit the potential of these products. To these ends, we need new purchasing and sales markets, new production methods and organizational reforms.[23]

The rankings use objectively verifiable patent activities of companies as an indicator. We criticize this approach because patents today are not only used to secure intellectual property rights, but are in many cases also a weapon for use against competitors – recall, for example, the battle between Apple and Samsung in recent years. We close our criticisms by agreeing with Schumpeter, when he says:

> *[…] the inventor produces ideas, the entrepreneur 'gets things done'. […] an idea or scientific principle is not, by itself, of any importance for economic practice. (Schumpeter 1947: 149)*
> *The new combinations are always present, abundantly accumulated by all sorts of people. Often, they are also generally known and being discussed by scientific or literary writers. In other cases, there is nothing to discover about them, because they are quite obvious. […] It is this "doing the things", without which possibilities are dead, of which leader´s function consists. […] Economic leadership in particular must hence be distinguished from "invention". As long as they are not carried into practice, inventions are economically irrelevant. And to carry any improvement into effect is a task entirely different from the invention of it, and a task, moreover, requiring entirely different kinds of aptitudes. […] it is, therefore, not advisable, and it may be downright misleading, to stress the element of inventions as many writers do. (Schumpeter 1934: 88-89)*

This point of view is empirically confirmed by a large-scale survey by the Booz Allen Hamilton consultancy. It found no connection between efforts for R&D and patents, and key figures such as sales and earnings growth, profitability and mar-

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23   In addition, many so-called »social innovations« are needed to solve the major social problems and challenges of our day (e.g. demography, the future of democracy etc.).

ket capitalization. Ultimately this means that »there is no correlation between the number of patents and financial performance« (Scanlon, 2006). A patent is no more than a legally protected idea; such an idea suggests no more than the possibility of innovation and thus, the possibility of economic growth.

To the extent that an innovation is accepted as being more than simply a »new product« or something other than the blueprint for a new product, a further inadequacy of previous innovation rankings can be seen. In some rankings, although the indicators »human capital« and »education« are recognized, they are restricted to sciene or engineering. This reduction is problematic for two reasons. 1. It suggests that the knowledge and transfer potential of other disciplines and the huge amount of knowledge that graduates of these subjects have play no role in ensuring the economic viability of nations. 2. It pretends that technical innovations arise solely because the population is well educated in science and technology.

We would like to state once again that an innovation is an idea that is implemented. For this, it is not enough to be technically or scientifically oriented. It's also not enough to acquire a certain amount of management know-how to complement one's expertise. Schumpeter's basic position is that the implementation of an idea requires the knowledge, ability as well as the desire to take advantage of it.

An interpretation of the results shows that education is a more or less significant problem in almost all countries surveyed. On population growth, John Maynard Keynes wrote:

> *Unquestionably a stationary population does facilitate a rising standard of life; but on one condition only – namely that the increase in resources or in consumption, as the case may be, which the stationariness of population makes possible, does actually take place. (Keynes 1937: 16)*

Only a short time later, Alvin Hansen made Keynes' rather incidental argument a central element of his own theory of »secular stagnation« (Hansen 1939 and 1941). In essence, he states that the previous economic growth – in this case, growth before 1940 – was in particular based on three factors: 1. the discovery of new territories and resources, 2. population growth 3. innovation. The growth-promoting effect of new resources and territories needs no explanation. Growth through innovation was discussed in detail above. According to Hansen, population growth directly stimulates consumer demand; to an even greater extent, it indirectly stimulates investment and thus, economic growth. Accordingly, an economy

without essential natural resources, an aggressive territorial policy or population growth can only achieve economic growth through innovation. This means that economic growth, and thus a higher standard of living for the population, can be achieved through a correspondingly higher rate of innovation in terms of economic goods and the related investment.

Betting on »growth through innovation«, however, requires that particularly talented people, i.e. those predisposed to innovate, always need to be better trained. After all, education – the acquisition of knowledge and the development of skills and personality – is the necessary condition for innovation. In other words, insofar as innovation should drive economic growth, education must be given top priority.

> *A father who sacrifices his savings to give his children an excellent education sacrifices value – but significantly increases the productive power of the next generation. In contrast, a father who invests his savings for the purpose of collecting interest [to protect it from inflation] while neglecting the education of his children, increases [or retains] the exchange value of these monies, but at the expense of the productive power of the nation. (List 1927/ 1837: 193)*

6   ON THE SUSTAINABILITY OF INDIVIDUALS

The world is changing – this is a platitude that has always been true. The fact that people in leading positions in politics, society and the economy must grapple with the phenomenon of »change«; that they must reactively and proactively define and communicate innovative goals in the face of constant change is nothing new, nor is it original to or typical of our time. What is new, however, is that now, being innovative is no longer the duty and privilege only of people in leading positions.

> *[Everyone must] constantly adapt to a world that is unstable, provisional and losing its stability, and that is characterized by constantly shifting currents and trajectories. The clarity of the social and political game has disappeared. These institutional transformations convey the impression that every person, even the simplest and most fragile, must take on the task of choosing and deciding everything.« (Ehrenberg 2004 222)*

Both the »doing of new things« as well as the »doing of things in a new way« are increasingly becoming the new professional survival strategy for every human being.

6.1   FUTURE REQUIREMENTS FOR PROFESSIONAL LIFE

A world in which change (again) belongs to everyday life requires people to make the following paradigm shift: away from firmly held premises and rigid patterns of thought and action and towards fluid, self-organized thought and action. The increasing dynamics of change inevitably correspond to an increased cancellation or reduction of activities, experiences and expectations and to decreased time for the respective functional spheres, value systems and spheres of action in the present. Philosopher Hermann Lubbe calls this latter phenomenon the »shrinking of the present«: »The chronological age of the obsolete is decreasing. In other words, in a dynamic culture, outdated things are becoming younger and younger.« (Lubbe 2003: 1) Because progress is happening at a faster and faster pace, our acquired knowledge and views – in short, our knowledge of the world – apply for a significantly shorter period of time.

Insofar as this knowledge is canonical and mandatory for the pursuit of a given profession, we generally refer to it as »qualifications«. Erpenbeck and Sauter (2007a) define qualifications as »in the strict sense, a clearly outlined complex of knowledge, skills and abilities that persons must have when exercising their professional activities so that they can orient their actions to completing required tasks.« In short, a qualification is the canonical bundle of knowledge and skills that a person must have in order to carry out a canonical bundle of professional activities. The problem is that we are faced with a future that tends to be increasingly dynamic, and in principle, this canonical bundle must be constantly reexamined and questioned.

> *For years, organizations have been embroiled in the so-called war for talent. The challenge has historically been a shortage of particular skills. But today, it's virtually impossible for CEOs to find the future skills they will need — because they don't yet exist. Bombarded by change, most organizations simply cannot envision the functional capabilities needed two or three years from now. Conventional training faces some of the same challenges. By the time courses are designed and delivered, the subject skills are already becoming outdated.*

To persist in the face of the »new normal«, the ability to think and act heuristically is increasingly necessary, i.e. the ability to deal with the new and different.

Living with the conditions brought about by the knowledge-based society will require a creative approach to [...] information and knowledge. To do this, schools and universities must create the corresponding conditions now. In the future, it will be less important for educational institutions to convey knowledge and more important for them to convey a practical approach to knowledge that enables individuals to constructively handle this knowledge. (Küppers 2010: 170)

In view of this new complexity, people will not become truly capable until they develop personal strategies for dealing with new situations and challenges. It is no longer enough to have knowledge in one's head or to regurgitate it in a test; the point now is to transfer knowledge – to create something new and real with this knowledge (Cf. Achatz, Tippelt 2001 and Tippelt 2013b: 239). The aim is for people to take the initiative in a goal-oriented manner based on their knowledge and experience.

When one can't know what professional requirements will be needed in the future or one must adapt to very different cultural conditions, the development of a strong personality and the competence to act and make judgments responsibly is of paramount importance. (Nida-Rümelin 2006: 44)

The ability to be innovative has always played a role, of course, although it may not always be explicitly stated as a requirement for exercising certain activities, such as the profession of manager. Today we are (probably) experiencing a break with this world; in the »new normal«, innovations and the ability to create them are becoming both general and individual prerequisites for ensuring future viability. The ability to proactively and self-productively confront change is what keeps individuals and organizations fit for the future.

In the attempt to create a pan-European educational system, the so-called Bologna Process, more and more people are demanding that universities make their course content relevant to the job market.[24]This demand is bundled into the term »employability«. Higher education, however, cannot and must not be reduced to

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24 Employability is – in contrast to how it is commonly described – not an explicit objective of the Bologna reforms. Nevertheless, employability has landed on the agenda of university debates. Reasons for this might be that on the one hand, many students are increasingly demanding more practical and vocational relevance from their studies. On the other hand, larger groups such as companies and organizations are interested in and need a more practical approach to university studies.

regarding university study as nothing more than a more elaborate form of vocational education.

In the higher sense, »employability« must and should mean »the abilities needed for professional success«.[25]

The goal of [...] academic training is not providing vocational skills so that a graduate can immediately enter a specific work situation as a fully competent employee. It is providing graduates with the ability to adapt permanently to specific, but often-changing professional requirements as well as the ability to develop independently in everyday practice, due to a good foundation that is based on scientific criteria. Concrete, i.e. vocationally oriented training wears out very quickly; if this training is science-based and at a high level, however, it does not wear out. (Weber, Merx 2005: 21)[26]

As useful and correct as the distinctions concerning the concept of »employability« are, the individual and business definitions of »employability« are also simple. From the point of view of an individual, employability means becoming and remaining »able to earn one's living«, i.e. having the ability to develop and exploit some source of income in order to achieve, maintain and extend a self-defined standard of living. From a business perspective, employability means that a person is capable of providing the following:

1. The ability to transform knowledge and skills into actual, active work.
2. Work that benefits the organization in some manner or fashion.
3. Value to the organization that seems much higher than the wage and labor costs incurred by that employee.

Innovations are the greatest possible contribution that can be offered to the entrepreneur because they secure and expand a company's current and future competitiveness. The biggest contribution to increasing one's own professional abilities or

25 It should be noted at this point that the German concept of employability (translated above as »the abilities needed for professional success« [translator's note]) better reflects the actual professional requirements of the future than the English concept of employability. Given an increasingly dynamic economy, resumes of the future will also be more and more dynamic and colorful, including such items as freelance work in a project (crowdsourcing, open innovation), permanent positions, partial or full independence – a prototypical resume could look like this in the future. Anyone who wants to be successful in the future labor market needs to be prepared to not always have a job and must be prepared to implement his own actions and judgments sometimes or permanently, or become self-employed, with all its legal ramifications.

26 Cf.: »Because you did not learn all of these things for the purpose of exercising them commercially so that you would one day be a master at them, but for the purposes of your education, as a free man – who lives entirely from his own resources and his own purposes – ought to.« (Plato, »Protagoras:«, in: Complete Works Vol. 1: 61)

earning capacity is thus strengthening one's disposition to innovate and demonst-rating this disposition through innovations. In all reforms of our educational system that are specifically aimed at preparing students for professional life, a special focus should thus be placed on the ability to innovate: on »innovatability«. After all, »Those who show that they are in a position to team up with others to solve the problems of tomorrow and beyond will be hired today.« (Jesenberger 2006: 50)

6.2 THE INNOVATOR AS A PROTOTYPICAL PART OF THE KNOWLEDGE–BASED SOCIETY

One of the key developments of past decades in developed economies such as Germany is the transformation from an industrial to a service and on to a know-ledge-based economy. This structural change has led to the expansion of the service sector, but with a simultaneous decline of agriculture and industry.

This structural change has also shifted job structures. Labor demands for production-oriented activities and primary services, which accounted for three-quarters of total demand in the 1990s, only accounted for two-thirds of total demand in 2010. Similarly, secondary services such as counseling, consulting, teaching, management as well as research and development will grow in importance.
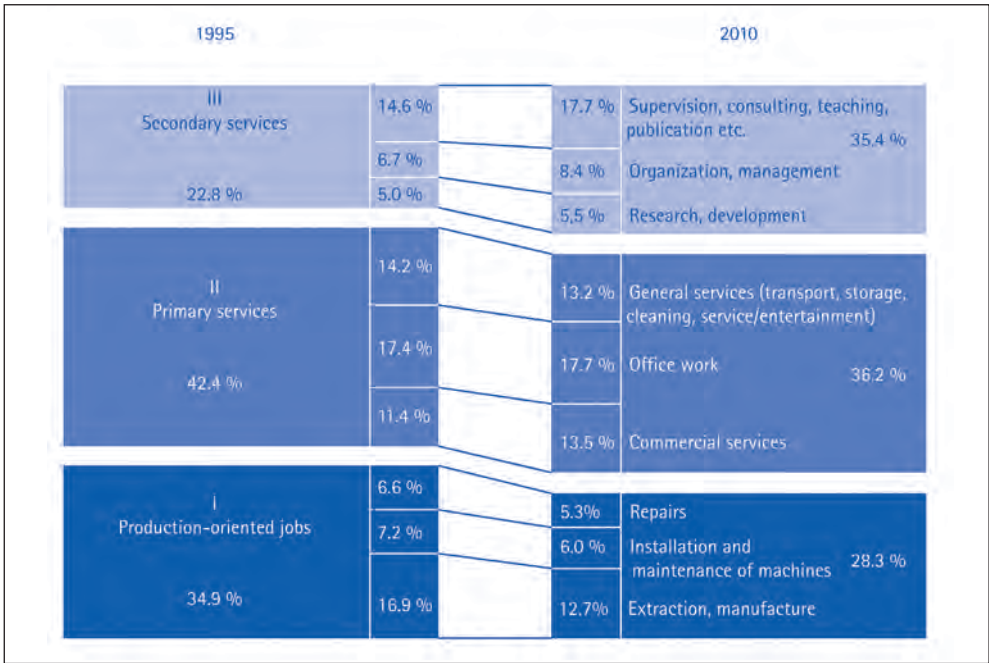
18 │ Jobs in Germany: Developments according to activities, 1995–2010 (bmbF 2009: 17)

With the structural change from an industrial to a service economy, the required skill level of the labor force is likewise rising. In 2010, the proportion of higher-qualified activities (management, organization, qualified research and development etc.) already amounted to over 40% of all professional activities; the proportion of medium-qualified activities remained broadly stable, but the proportion of simple (auxiliary) activities dropped.

> *We customers handle the simple tasks. [...] For the things we cannot do on our own, however, we expect assistance from someone who is truly more capable than we are.*
> *– Tax office: The people who used to enter our data into the computer have disappeared; only the tax experts remain.*
> *– Insurance companies: The people who used to enter our data into the computer have disappeared; only the sales pros and specialists remain. […]*
> *– Travel agencies: We carry out bookings and google hotels ourselves; the only thing we still need is specialized advice on and/or customized travel arrangements [...].*
> *One can go on endlessly. The gap between simple and complex tasks*

in the service industry is widening. It is increasingly splitting profes-
sions into a premium segment – which requires a great deal of expe-
rience and knowledge – and normal tasks, which we do ourselves or
pass on as simple labor to the low-wage sector. This is where semi-
skilled workers do their jobs. But their jobs could just as well be done
by students, pensioners or »mini-jobbers«. (Dueck 2010: 88)

In short, this means that »the relevant form of work in developed societies will thus be knowledge work!« (Oelsnitz, etc. 2007: 37)

Large service systems segment individual work steps into fully au-
tomated processes that run on computers, and residual work steps
that still need to be done manually. Systems will control the world of
work. Plants with wireless sensors indicate to the building manager
that they need to be watered, neon tubes indicate that they are broken
[...]. The manager [...] waters plant 17 and changes the neon tube. [...]
More and more, people become mere henchmen of the system. They
fry a Big Mac when it's shown on the display, they bring a latte mac-
chiato to table 10 because a customer has pressed the button for it.
This is the part of our future that depresses you every day at work
because for years, you have felt that everything is going to happen
to you like this. You used to be an employee; soon, you will only be
someone who handles tasks. The whole time, you think that things
can't go on like this. People are important! Where is there room for the
person? – is the frequently asked question. What should we all do?
Will we become slaves to the computer, as many films suggest and/
or dramatically depict?

This concern is unfounded, however, because there truly is a great
deal to do. An incredibly large amount of work and intelligence is ne-
cessary to design and set up all of these systems that provide us with
fully automatic services. […]

These are, of course, the dream jobs of the new knowledge society!
The new professions include a great deal of negotiation, management,
design, planning, design, renewal, development and marketing. The
point is freeing energies that bring change and create new things.
Needed for this are ideas, negotiating skills, political sensitivity, moti-
vation, creativity, persistence, conviction and enthusiasm, i.e. a good
personality and a great deal of knowledge. Once again, employees
and foremen are necessary – those who simply complete tasks are no
longer needed. (Dueck 2010: 54-55)
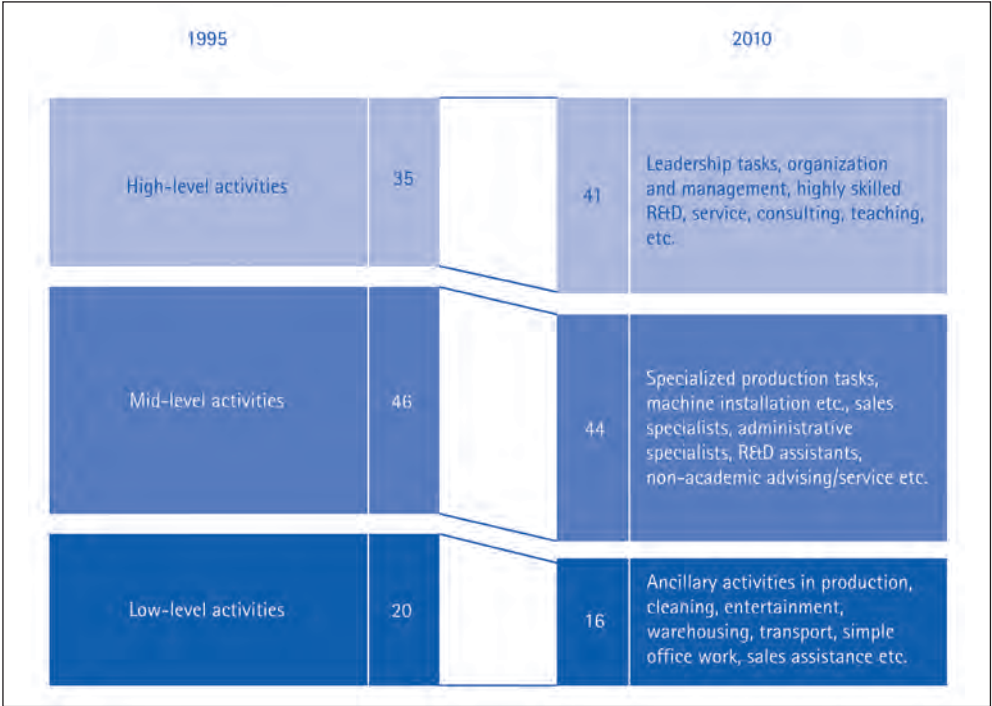
19 │ Jobs in Germany: Development based on skill level 1995–2010. (bmbF 2009: 17)

The knowledge worker is the chief protagonist of advanced societies in the 21st century. Nonaka and Takeuchi (1997: 171) initially distinguish three types of knowledge workers.

1. Practical knowledge workers, who form the »operating core« of knowledge work due to their expert status, special experience or external contacts. 2. Knowledge engineers, who are the interface to practical knowledge workers and ensure that knowledge can also be used. 3. Knowledge managers, who grasp the scope of the objectives and framework for managing knowledge, i.e. who coordinate the other two groups of knowledge workers. A fourth group should be added: knowledge brokers, knowledge consultants and knowledge creators. These provide »symbolic analytical services«, i.e. non-standardized products based on symbols (data, words, audio-visual presentations).

This type of knowledge worker includes scientists, lawyers, journalists, PR managers, asset managers and business consultants, i.e. people who solve problems, provide or convey advice and thus, carry out activities that are done with analytical or rhetorical »tools«. (Cf. Reich 1993: 194 f.)[27]

A differentiation is still occasionally made between »knowledge workers« and »creative workers«. This distinction, however, is more analytical than real. Creative workers do not create something out of nothing. Creativity means the ability to think creatively, i.e. the ability to come up with ideas. If one does not accept the notion that ideas come to humans through divine intervention or waft their way into human consciousness from some Elysian landscape, it must be assumed that inspiration is the result of a process in which a person connects the knowledge he/she already has in a new or as yet never-tried-out manner. The difference between the »classical« and the creative knowledge worker thus lies in the fact that first, they deal with knowledge in different ways, and second, each type of knowledge worker engages with the innovation process at different points. Creative work takes place before the innovation process, if this process is defined as the realization of ideas. Important as a creative worker is, an idea – be it ever so spectacular – remains without impact or consequence as long as no one picks it up, pushes it and helps it become reality.

We thus understand innovators to be all those knowledge workers who set innovation processes in motion, shape them and thus lead to an end that creates value. Seen in this manner, the term »innovator« is in accord with the concepts of »entrepreneur« and »entrepreneurship«. In the narrower sense, entrepreneurship means the process of founding new companies. In the wider sense, as well as in this work, entrepreneurship generally means entrepreneurial thought and action. In our opinion, such thought and action primarily arises through innovation in Schumpeter's sense. In other words, entrepreneurial thought and action is the »imagination, development and realization of one's own goals and visions in an environment that is determined by competition« (Diensberg 2001: 65). In our view, entrepreneurs are above all (potential) »agents of change« (Fueglistaller, Müller, Volery 2008: 3) who recombine all kinds of resources and bring them to market.

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27 The Institute for Employment Research of the Federal Labor Office estimated the share of ‚knowledge workers' in 2010 to be 40% (iAB 1999: 3). An OECD report suggests growth rates in European Union countries and the United States of 3.3% per year (OECD 2001: 56) (Cf. Dostal 2003: 1480). Oelsnitz and others (2007: 35) assume that around one third of these jobs can be described as knowledge-based, and the trend is rising. The »Zukunftsinstitut« thus forecasts that in the near future, only one third of jobs will be »traditionally« organized, i.e. according to the industrial society model; but some two thirds of all jobs will be associated in some way or another with the production factor »knowledge«. (Keicher/ Brühl 2007: 25 f.)

Our understanding of entrepreneurship depends neither on position or status:

> *»Entrepreneurship is a process by which individuals – either on their own or in an organization – pursue opportunities without regard to the resources they currently control. [...] It is typical of the entrepreneur to find a way.«* (Stevenson, Jarillo 1990: 23)

The following illustration more precisely details this concept of an »innovator«:

20 │ Innovators and innovation: a nuanced perspective.

Innovators can be categorized as »high-potential employees« and »high performers«. The difference between these two groups is that high-potential employees are people who have indicated that they could have what it takes to be an inno-

vator, that they could be innovative if given the chance.[28] High performers are people who have already proven their ability to innovate (multiple times), i.e. they have initiated, led and been responsible for innovation processes on a number of occasions.

In addition to distinguishing the degree to which people have been innovative, the role in which they have done so can also be examined. First, we can differentiate between people who are actively involved in the innovation process and those who actively lead these processes. On the one hand, we have the people who are members of a team or hold a staff position and use their knowledge, skills and desires to bring about innovation. On the other hand, we have the people who initiate, manage and lead innovation processes, i.e. who ultimately hold responsibility for innovations. The members of the first group (team members, staff positions etc.) can ideally be distinguished based on when and/or where in the innovation process they are actively involved. In regard to product or service innovations, the following phases of activity could be posited for innovators engaged in such areas: idea generation or brainstorming (scouting), idea evaluation, development, testing with customers, marketing, sales. We wish to reiterate here once again: innovations are needed at all levels and in all areas and departments, both in larger as well as smaller ones, both in the sense of improvements as well as in renewals of the existing. Every – and I mean every (!) employee, no matter in what department or what position or role – should address or encourage innovations, not only in the interests of the company, but in their own interests.

The second group (people who initiate, manage and lead innovation processes) can be divided into intrapreneurs and entrepreneurs. The intrapreneur is an »innovation manager« – the »entrepreneur within the company«. Such people innovate for the company and although they are dependent on it, they face no existential risks. In contrast, the entrepreneur in the narrower sense is understood as a businessperson who realizes ideas in his/her own company and also carries the existential risks. (Higgins, Wiese 2009: 240) To put it bluntly, while intrapreneurs are primarily characterized by the fact that they look for large and innovative challenges within the company, the entrepreneur scours the world on his/her own for such opportunities.

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28   A characteristic of high-potential employees is their lack of much work experience. During and shortly after their education, they often face the question of whether they are actually in a position to innovate, and whether their role – for example as a student in a work-integrating curriculum (on-the-job course of study) – gives them enough authority to actually implement innovative projects. Due to the many positive experiences with our students, we concur with Tom Peters' – admittedly somewhat melodramatic and not always easy to implement – provocation: »To set something in motion, you don't need ‚power' or ‚position', but passion, imagination and persistence.« (Peters 2007: 203)

7   THE TRUE »WAR FOR TALENT«: ON THE DEARTH OF INNOVATORS

At the end of the 1990s, the McKinsey & Company consultancy concluded that the search for the best entrepreneurs, employees, graduates and scientists would be »a critical business challenge and fundamental driver of corporate performance« in the future (Chambers et al. 1998). This is also a little sensational, but at the core of the study was an appeal to win the »war for talent« – i.e. the demand for upwardly mobile employees.

7.1   DEMAND FOR YOU–KNOW–WHO

It is worth noting that in German intellectual history, the term »talent« has a completely different – and quite negative – significance than it does in English.[29]
Furthermore, it should be pointed out that the inflationary use of the concept »talent« may be a passing fad, a temporary trend (»buzzword«) that may soon be considered trite.

At this point, we would like to note additional objections to the term »talent«. The term »talent« carries – at least in German – these meanings: talent is often seen in things that one was always good at. It designates skills that were practically apparent at birth. Of course, this is a heavy legacy. Our conviction, however, is that people can learn certain skills over time, even if this takes a great deal of persistence and self-discipline.
The German word »talent« also implies that skills »slumber«, that they may even be »hidden« over a lifetime, i.e. be present and show themselves through quiet desire, but not in deeds – not in »performance«.

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29 The reduction of the concept of »talent« in favor of the concept of »genius« has a long tradition. »Genius differs from talent less in terms of the quantity of new thoughts as in the fact that it [genius] makes these ideas fruitful and ensures that they are always at the right place at the right time; in a word, genius unifies everything, while talent, however, only produces parts, albeit beautiful ones.« (Grillparzer as cited in Eisler Vol. 1: 373) For Schopenhauer, genius is the excessive ability of the intuition that allows a person to comprehend the world in a more objective and purer sense; the strength of talent lies »more in its greater fluency and clarity when it comes to methodically handling [...] knowledge of the world«. If the work of a genius derives from contemplation, the work of a talented person results from terms, i.e. from »partial concepts«, and thus remains tied to »current needs« and the »contemporary«, thus making it merely subjective. (Schopenhauer, Die Welt als Wille und Vorstellung (The World as Will and Representation), Vol. 4: 445 f.) In brief: a genius's holism demonstrates »the productive force that creates deeds that can stand before God and nature and thus have consequences that are of duration«. (Goethe, Conversations with Eckermann, 03/11/1828) Although a talented person, on the other hand, does create amazing things, these are only short-lived and limited to a particular area.

Despite this, insofar as one accepts the term »talent«, the question must be raised: who are talented persons and where they can be found? First of all, it could be presumed that such »talents« possess something very valuable but are very rare. It can also be assumed that the value of such talented employees is due to the fact that they have exceptional skills and (can) thus achieve out out-of-the-ordinary performance. However, there are innumerable ways to understand the term »talent« because there are innumerable areas in which exceptional ability can be shown, such as in the following small selection:

− Technology
− Craftsmanship
− Science and education (teaching and research)
− Medicine (doctors, nurses etc.)
− The socio-political area (policy, organizations that
  work for the common good, NGOs etc.)
− Culture (music, painting, literature, film, theater etc.)
− Sport
− Companies (managers, entrepreneurs, specialists, and senior executives)
− etc. ... That is to say: everywhere.

Just as innumerable are the talents/skills that could be described as »exceptional«. Even more than the related term »intelligence«, talent can occur in many different forms.[30] Talented people are considered to be those who are extremely skilled (or gifted), those who make an extraordinary difference by doing extraordinary things – this seems to be the most general of all possible definitions.

As stated above, the future of companies and economies can only be secured and extended when they respond to change both reactively and proactively through innovation. Innovations are of immense importance for all organizations (companies, administration, political parties, trade unions, NGOs, churches etc.), of course. Each organization and each society is faced with the challenges of dealing with a changing world, which means that the life and survival of every organization stands or falls with its innovative acts as well as those of its members. Once again: there should no longer be any doubt about the immense importance of innovations for the future viability of organizations. Innovations, however, are not anonymous operations. To be able to develop and execute projects in the sense of Schumpeter's concept of business development, people are needed who can identify, carry out and complete the innovation process. Thus, in the »war for talented employees«, great attention should be paid to innovators who work according to Schumpeter's meaning of the concept.

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30   One sometimes speaks of »multiple intelligences«; in addition to the traditional intelligence quotient, which stands symbolically for analytical skills, at present up to 120 different forms of intelligence have been identified

7.2   THE WAR FOR TALENTED EMPLOYEES:
ABOUT THE REAL PROBLEM ON THE »SUPPLY SIDE«

The title of this chapter suggests that we will discuss the lack of innovators. Above, we said that there is an increasing demand for innovators:

- An inherent urge to grow is inherent in the market economy.
- Sustained growth is organic growth, i.e. growth through innovation.
- The already existing pressure to innovate due to the nature of the market economy has increased even more, due among other things to such phenomena as the acceleration of the pace of life, the knowledge-based economy, the scarcity of resources and globalization.
- In this situation, the demand for innovators increases even more strongly.

The demand for talented, upwardly mobile employees has arisen primarily because the supply of highly qualified and highly competent people in general, and the supply of innovators specifically, has decreased both quantitatively and qualitatively.
In the following section, we will first look at demographic development in Brazil, China, Germany and the USA. These demographic data come from the 2010 World Population Prospects of the UN (United Nations Department of Economic and Social Affairs: Population Division, Population Estimates and Projection Section).[31]

The average age of the population of Brazil, China, Germany and the USA is expected to develop as follows by the year 2100.[32]

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31   http:\\esa.un.org\\wpp
32   The associated table can be found in the Appendix to this work.
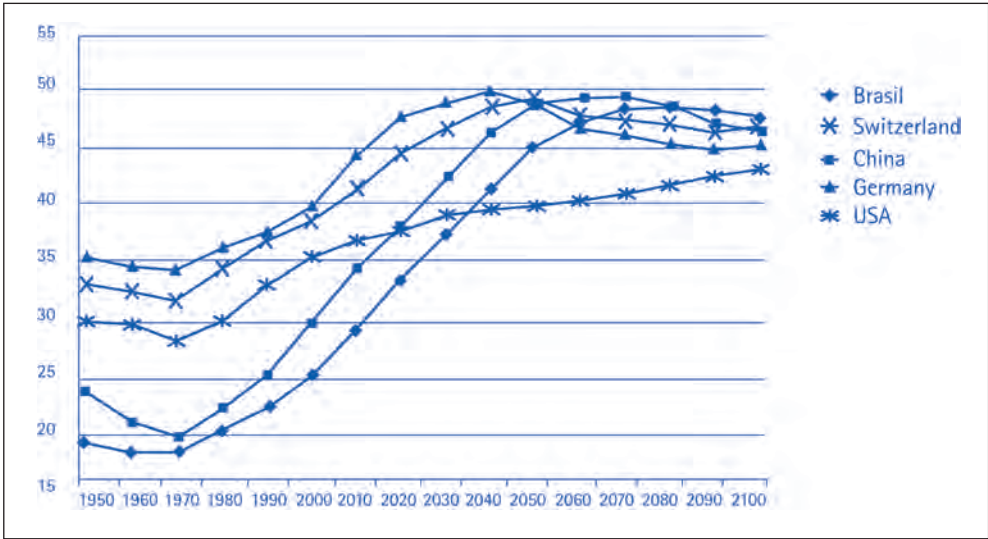
21 | Average age of the population of Brazil, China, Germany and the USA by the year 2100.
The societies of these countries exhibit the following age distribution at the distinctive measuring/
forecast points 1950, 2010, 2050 and 2100.

The societies of these countries exhibit the following age distribution at the distinctive measuring/forecast points 1950, 2010, 2050 and 2100.[33]

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33 The associated tables can be found in the Appendix to this work.
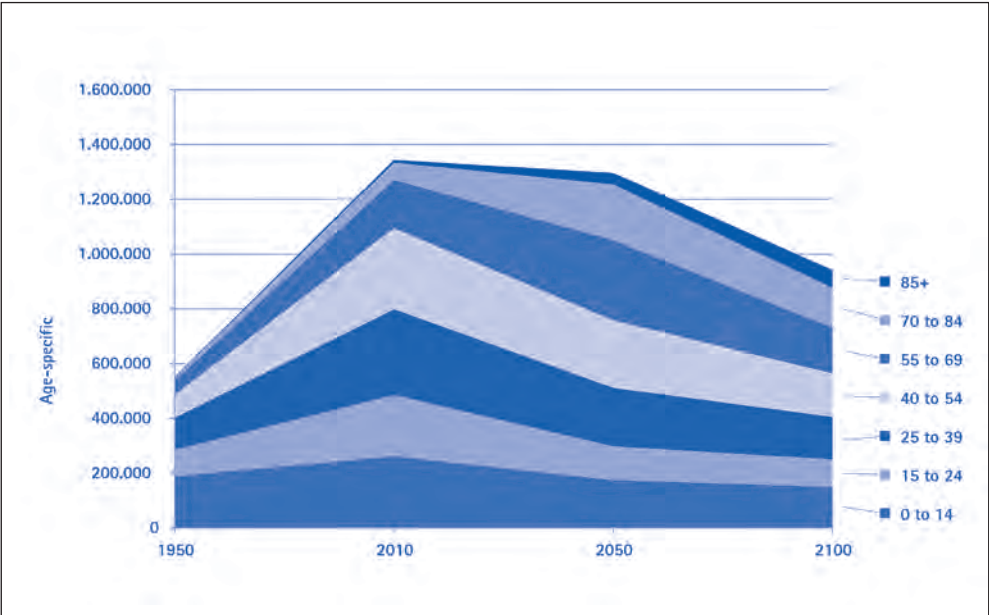
22 │ Age-specific composition and quantitative development of the population of Brazil in 1950, 2010, 2050 and 2100 (expressed in thousands).
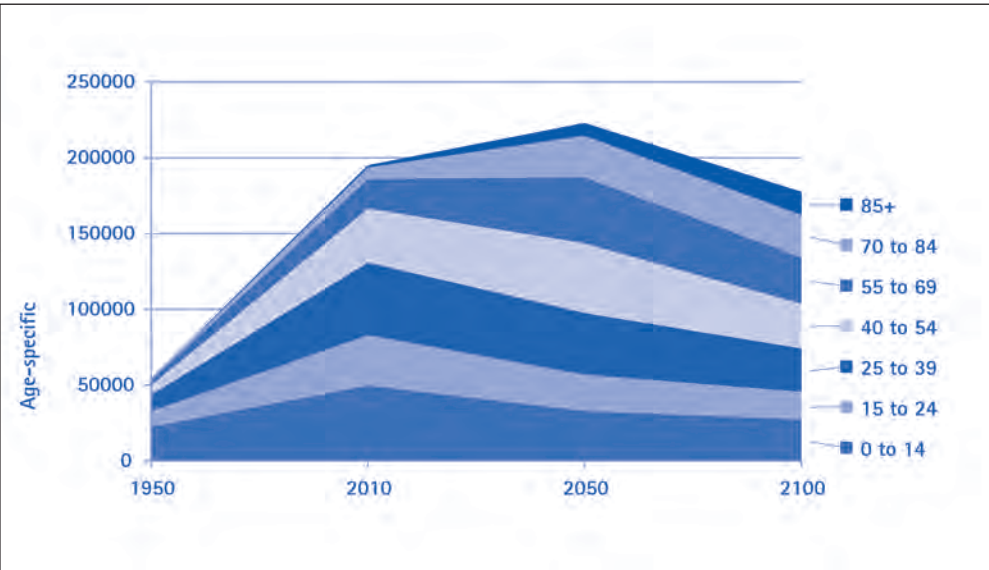
23 │ Age-specific composition and quantitative development of the population of China in 1950, 2010, 2050 and 2100 (expressed in thousands).
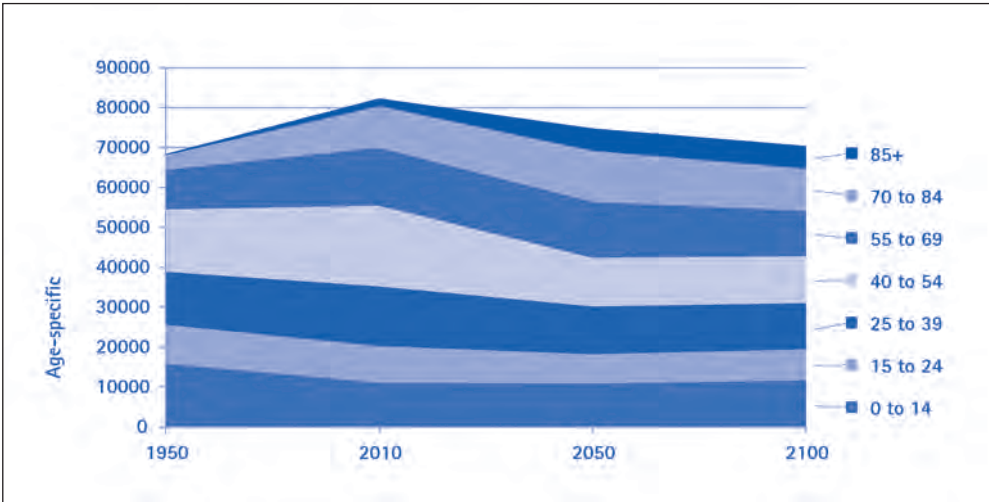
24 | Age-specific composition and quantitative development of the population of Germany in 1950, 2010, 2050 and 2100 (expressed in thousands).
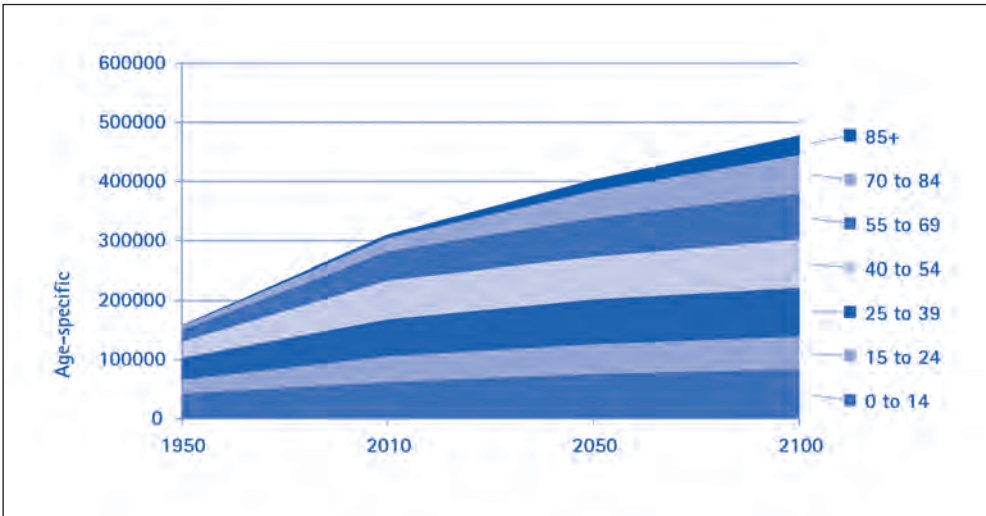
25 | Age-specific composition and quantitative development of the population of the USA in 1950, 2010, 2050 and 2100 (expressed in thousands).

In contrast to economic forecasts, long-term population projections are amazingly accurate. UN forecasts from the 1950s for the world's population in 2000, for example, retrospectively show a deviation of only 1.5%. In many Western industrialized nations, demographic trends show that every generation of children is

numerically smaller than the parent generation. Germany, for example, shows the following picture since the 1970s: 100 members of the parent generation have 65 children, 42 grandchildren and 27 great-grandchildren. In addition to an absolute decline of the population, there will also be a structural shift. By 2050, the group of those over 65 years of age will increase dramatically in many industrialized countries while at the same time, the group of 20- to 34-year-olds will just as dramatically drop. In other words, the average age will increase, thus leading to the aging of the population. Interestingly enough, this also applies to China and Brazil. Forecasts show that the USA is the only country whose population will continue to grow and whose population will not age as dramatically as in the other countries examined. In many »western« countries as well as developing countries[34], the principal source of economic growth is drying up. The number of teens who are on the verge of adulthood and who can have children of their own is decreasing. Simply for these reasons, the number of innovators will also decrease – insofar as one assumes that talent and motivation are distributed relatively constantly throughout a country's population and that changes in population size lead accordingly to changes in the absolute number of innovators.

What does the development of the age-specific composition have to do with the search for talented, upwardly mobile employees? Can innovators only be found among younger people – not older ones? In advance, it must be clearly stated that we in no way wish to devalue the significance of »older« employees for the work process. Just as much human capital is inherent in this group as in younger workers. No previous study of this theme has ever found a direct link between a person's age and his or her fundamental capacity to innovate. (e.g. Verworn, Hipp, Schwarz 2007; Schat 2006; Bergmann, Eisfeld, Prescher 2006; Grewer, Matthäi, Reindl 2006) Innovations are the result of the complex interaction between complex factors, namely, factors related to people and factors related to their environment. In other words, a person's innovative capacity is not – or at least not only – determined by age; the sentence: »Anyone over 50 is automatically not/ no longer innovative« is just as incorrect as the sentence »Everyone under 35 is automatically innovative.« On closer examination, there are always indirect connections that explain a supposedly lower level of innovative activity in older people (summarized by Schat, Jäger 2010).

One plausible explanation is the theory of the development and depletion of human capital (Friedberg 2003). Throughout their working life, a person's human capital is determined by education and on-the-job experience. These enable them

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34   Of course, in such populous countries as China and Brazil, this decline is taking place at a very high level when seen in the light of the population size.

to create value for any type of group (e.g. a company). Seen the other way around, a person's respective human capital consists of the bundle of skills and competencies that optimally suit him for specific tasks and problems and thus make him attractive, e.g. to take on a certain position in a company. People gather various types of human capital at different ages in their lives.

> *[H]aving recently finished school, adolescents' textbook knowledge is current. However, they lack life experience and have not yet had time to develop strong social and business networks. The so-called tacit knowledge accumulated over a lifetime peaks when a person is in his or her 50s [...]. (Bönte et al. 2007: 4).*

Planning for retirement probably reduces the motivation of many older employees to invest time and money in their own human capital. On the other hand, companies often see no incentive in investing in the human capital of older employees. The skills and abilities of these employees are no longer up-to-date, meaning that they create less value for their companies, e.g. through innovation. In addition, it must be conceded that more contra-innovative tendencies dominate in the case of older people rather than in younger ones: preserving the status quo as opposed to upheaval, calm as opposed to daring, rethinking experiences as opposed to having new ones (Cf. IGS 2008: 12). The problem older people have seems less a problem of not being able to be innovative and more a problem of not wanting or needing to be innovative.

Summing up, we see the actual problem of the »war for talent« – at least in Germany – as follows:

1. The demographic situation in Germany is characterized by the fact that there are and will be fewer young people in coming generations. Some of these go through an educational system that has become increasingly characterized by memorizing and learning bits of knowledge; other young people, who fail in this system primarily due to its rigid culling mechanism, are simply given up on. Young employees end up at the bottom of the barrel as soon as they start by being relegated to positions as »academic clerks« before taking on any responsibility. In brief, it is therefore important to develop young people's ability to be innovative, to anchor the need for this in their minds and to give them permission to be innovative.
2. Innovations represent the greatest possible value to an institution because they secure and develop its future viability. Young people who are striving to attain standing and authority in such an institution, in short, to pursue

a »career«, will thus try and implement as many valuable innovations as possible. Older people who have already become comfortable in their niche in the firm tend no longer to strive for a career and have less incentive to implement innovations. For older employees, there is simply no more incentive to develop new knowledge and skills in order to enable a new and/or other reality. Older employees must thus be called upon to be innovative and maintain their ability and motivation to be innovative.[35]

7.3   CONCLUSION

When we refer to the »war for talent«, or the demand for upwardly mobile employees, we are primarily speaking of an increasing lack of – and simultaneous need for – specialists. We feel, however, that the lack of people in such professions is only one aspect of this so-called »war for talent«, i.e. it is in a certain sense only one of many »war zones«. Aware of the immense significance of innovations, the true war for talent, in our opinion, has to do with a fight for innovators, for people who can transform ideas into reality.

This does not mean, however, that the terms »specialist« and »innovator« are mutually exclusive. The differentiation we are making is meant to broaden the discussion on the »war for talent«. Although we do consider the term »talent«, i.e. talented employee, to be problematic, we do find the phrase »war for talent« to be perfectly reasonable. Despite its somewhat sensationalist tone, this phrase does realistically reflect the threat we are faced with today. Furthermore, we must analytically differentiate between various things: even though the war for talents consists of many different theaters, e.g. the fight to acquire innovators, all the different theaters go back to the same causes. The war for talent is triggered by the fateful combination of a growing lack[36] and a simultaneously increasing demand for highly qualified and highly competent people – and also and above all, for innovators. The war for talent describes this scenario.

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35   The scientific education of older workers, including those in academic positions, is becoming increasingly important in the course of demographic change. For this reason, older people and their educational needs are demanding a paradigm shift from universities and programs. Both the reputation as well as the numbers of programs for scientific further education at universities are still significantly behind those for research and first degree programs (Tippelt 2013a: 229). The representative study edAge (Tippelt (et al 2009) is just one investigation that shows how much specifically older employees make use of educational programs and benefit from them.

36   At least in regard to western industrialized countries.

8   SUMMARY OF PART ONE

It has been a truism since the days of Heraclitus – but is still true – that nothing is more permanent than change. The small and large roller-coasters of history, the catastrophes and blessings, the turns of fate and demise of civilizations, the changes and break-ups of nations – the chronicles of this planet are full of these. Even supposedly »quiet times« are ultimately only phases of less fluctuation. Change is constant – a major challenge found in all ages that every being on this planet has always been faced with and always will.

The future of national economies, companies, even the future of humankind, is built on innovation. The conditions under which innovations are made today are:

- The entelechy of the nature of the market economy
- The acceleration of the pace of life, in particular the phenomenon of the »shrinking of the present«
- The current transformation to a knowledge- based society and knowledge economy
- The inevitable global shortage of natural resources
- The new ecological consciousness of humankind
- The epochal challenges facing all people.

In addition, the phenomenon of globalization is a determining factor that shapes the thought and action of innovative companies, either due to the fact that globalization additionally increases the pressure on companies to innovate, or to the fact that in the face of globalization, new opportunities or imperatives for innovation are created.
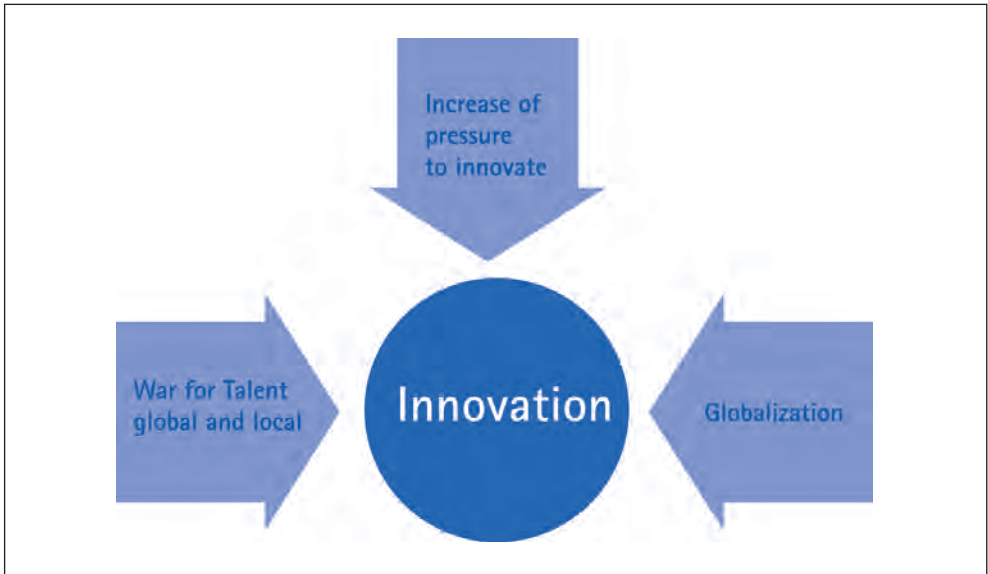
26 | The conditions under which innovation occurs today.

Schumpeter already emphasized that the new, the different and the better is not a bolt from the blue and do not come from nowhere. Instead, they are the result of ideas that people have systematically transformed into reality, i.e. initiated, planned, implemented and monitored. Both in the past and in the present and future, innovative people will have a special, even a major role, if change is to be the starting and end points. We also wish to emphasize that such personalities who create innovations are needed not only at the top of companies and organizations, but at all levels and in all areas.

Without people who think and – above all – act entrepreneurially, an idea remains only a fantasy. This is why innovators are required, i.e. those people who can realize ideas. But how can a society and how can an individual ensure that innovative potential develops and is maintained? Our answer, which is supported by many others, is: Education, education, education!

INNOVATION AND EDUCATION

1   INTRODUCTION

To begin with, education[37] is both the general and comprehensive answer to how societies can ensure that their members develop »good and capable natures«, i.e. become social beings. This was true in the past and is especially true today.

> *These are not, […] as one might suppose, numerous and difficult injunctions that we are imposing upon [societies], but they are all easy, provided they guard […]. What is that? […] Their education and nurture, I replied. […] [A] sound nurture and education […] create good natures in the state, and sound natures in turn receiving an education of this sort develop into better men than their predecessors both for other purposes and for the production of offspring, as among animals also (Plato 1963: 665). [Education] helps humans ask the appropriate questions, recognize hidden truths more precisely, illuminate dark paths, ask for and assess advice, examine reasons and allegations and confidently decide on their own interests. Such an endowment is a personal requirement for autonomous action in our times. Without it, people today hardly have a chance of orienting themselves in the world or creating their own path and following it. They more easily fall victim to arrogance and deception, allow themselves to be swept along into worlds that have nothing to do with them, and waste opportunities (Hassemer 2005: 40).*
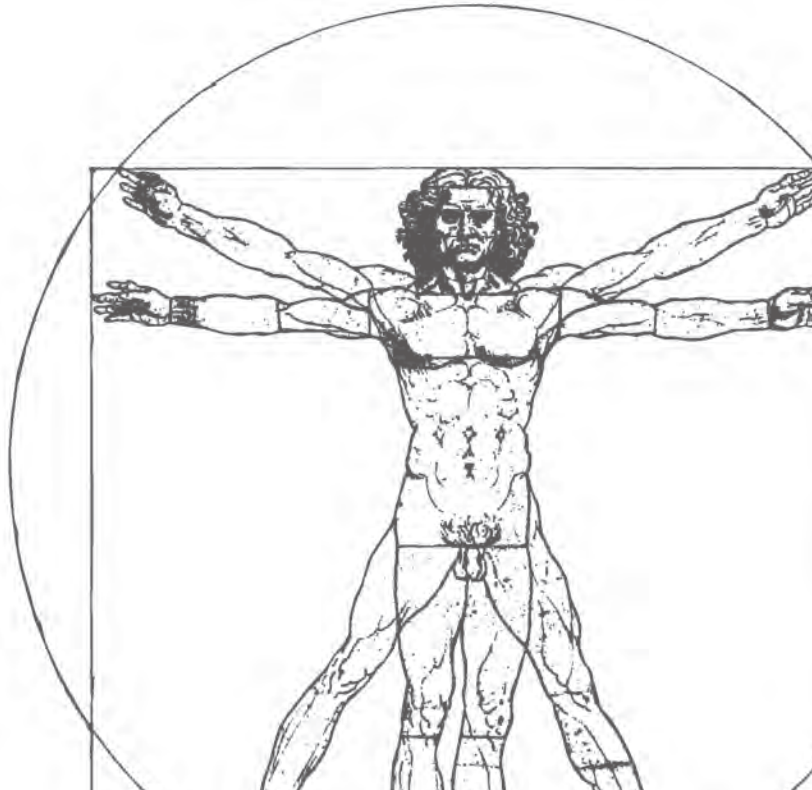
Education is the general and comprehensive answer to how societies can ensure their future viability.

> *We are getting older and there are fewer of us and we must compensate for this by becoming more productive. Those who invest in education and training increase their chances and also help society as a whole. This is a win-win situation (Hüther 2013: 14).*

Education is the general and comprehensive answer to how companies and organizations can ensure their own future viability. Initial evaluations of an Ifo (Institute for Economic Research) innovation test on the structure of education show that there are significant correlations between growth and a company's human capital (Falck 2008). Companies that innovate successfully have a high share of well-

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37   Our use of the term ‚education' is very broad and includes such concepts as nurture and socialization, among others.

educated employees. Even if these findings cannot be causally interpreted,[38] there seems to be a close connection between successful innovation projects and the knowledge and competence of the people involved in these projects.
Education is the general and comprehensive answer to how individuals can ensure their future viability.

> *Buzzwords such as lifelong learning (LLL) do not help us further. They only trivialize the problem. [...] We need a cultural change in our entire society (Dueck 2010: 74).*
> *We must make it clear to people that training and a university education alone are not sufficient for one's entire working life. To the extent that we live and work longer, we must also train longer. This shifts the responsibility from the nation to the individual and the company. Enterprises are responsible for showing their employees the areas they must further educate themselves in. One part of this is financed by the companies themselves, but part of it is also an individual's responsibility. […]*
> *We tell people today that they must secure their own pension, health and care in old age. We need to add education to this list (Hüther 2013: 14).*

In the end, education is the general and comprehensive answer to how people can become innovators. We believe that it is necessary to rethink education, or as the following chapter will show, spend more time reflecting on it. It is not sufficient for people to know about the topic of innovation in order to actually be innovative and create innovations. In addition to this knowledge, they must have learned and internalized the following:

− The ability to anticipate the new and different
  and to respond to it proactively
− The willingness to accept change as a constant
− The attitude that the resulting discontinuity can be
  responded to creatively and optimistically
− The maxim that one has never really learned enough, is never completely
  trained, never knows everything, and that one must do whatever it
  takes to get along in one's own little niche for an entire lifetime.

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38 When interpreting these findings, it must be borne in mind that the connections reported between innovative activities of entrepreneurs on the one hand and the qualification structure and competencies of their employees on the other are purely descriptive.

In brief, educating people to be innovators cannot and must not be limited to the transmission of knowledge; the entire personality must be educated.

2   THE EDUCATION OF PERSONALITY

Education has been reflected on a great deal and at many times over the course of intellectual history. A time-honored manner of discussing this concept – which is now being cited again as well – is found in the writings of Wilhelm von Humboldt.

> *In the focus of all special types of activity, it is humans, who – without any specific purpose – wish only to strengthen and increase the force of their character, want to create value and a sense of permanency for their being. But just as mere force needs an object to practice on, and mere form, i.e. pure thought, needs a substance in which it can find lasting expression, humans need a world outside of themselves. The pursuit to expand one's knowledge and effectiveness stems from this need. Without being clearly aware of this, it is not important to the person what he gains from the world or produces with it, but only his inner improvement and refinement, or at least the satisfaction of the inner restlessness that consumes him. Abstractly and in view of its final purpose, his thought is only ever his mind's attempt to understand itself, his actions an attempt by his will to become free and independent of the world, all his activities only an attempt not to remain idle. Both his thoughts and actions are only possible by virtue of a third party, only by virtue of the imagination and the working-out of something. Therefore, he seeks to understand as much of the world – whose distinguishing element is that it is non-human – as possible and to unite the world with himself as intimately as possible. The final task of our existence is to provide as much content as possible: to integrate humanity in our person, both during our lifetime and beyond it through the traces of vital activity that we leave behind. This task is accomplished solely by uniting our self with the world for the sake of the most general, active and freest interaction (Humboldt 1793/1986: 33 f.).*

The term »education« includes two levels of meaning. Education is both a process, i.e. the process of educating or forming, and the product, i.e. an education itself. To

educate oneself thus means to pay attention to and to work so hard in and for the world that one transforms it [the world] into one's own personhood. An education itself, i.e. the product of education – stands for that part of the world that mankind has seized through active participation and fathomed as deeply as possible. ‚To educate' and ‚an education in itself' thus mean much more than the consumption of information and the processing of knowledge. Rather, the concept of education includes the idea that a person develops an upright character as well as the knowledge to make decisions – and tries to fulfill as many human roles as possible (and not just a role as an employee, as is often argued in connection with lifelong learning) (cf. Gruber 2002, p. 280). Wilhelm von Humboldt's concept of education must be understood in its historical context as a reaction against the excessive utilitarianism found in late Enlightenment pedagogy. »Education« in the spirit of the Enlightenment was and is still considered to be a pedagogical, purposeful process. The intent of such education is to systematically shape people – while simultaneously ensuring that they remain in their socio-economic class – into beings who are useful for the economy, the nation and society. »Education« in its later, more expansive sense, included and still includes a great deal more. It is intended to lead to freedom and happiness and to the achievement of a higher purpose – namely, the emancipation of the human race. According to Humboldt, people should first be given a general education and then trained to take up a profession. No rejection of professional training – as has been incorrectly ascribed to Humboldt – is visible here. In reality, he emphasizes the value and hierarchy of general education and special training. It was only later generations of educators who developed the radical front-line position – which is still often irreconcilably hostile – of perfection and usefulness, of general knowledge and technical knowledge (Cf. Gruber 2005: 2). And to put it bluntly, humanistic and professional training are not mutually exclusive in principle; however, professional education must be thought about differently than is often done today.

2.1   EDUCATION AND PERSONALITY

A central provision of a humanistic concept of education is that it should be understood to mean »general education«. For us, general education means, to paraphrase Plato, that we must educate all elements of a person. A person cannot and must not be satisfied with »only« learning a set of information in order to pass a test and obtain certification. Education in the sense of general education is comprehensive, i.e. oriented to the humanist ideal of the »universal man« – a person who is completely well-rounded. In brief, we understand the concept of education described above as holistic and as closely connected with the concept of personality as possible.

Every person has a certain amount of freedom to make decisions as well as responsibility for the ensuing actions; certain rights and obligations belong to this freedom. To be a person means nothing other than the absolute, non-negotiable principle that every person should, can and must strive to make more out of himself than he is. To be a person is thus a principle that applies to everyone – simply on the basis of one's personhood – as well as a principle that binds the human race together. At the same time, each person is a unique individual. This uniqueness is to be seen in the fact that every person has the singular potential to realize his personality in a unique manner by taking action that forms his personality.
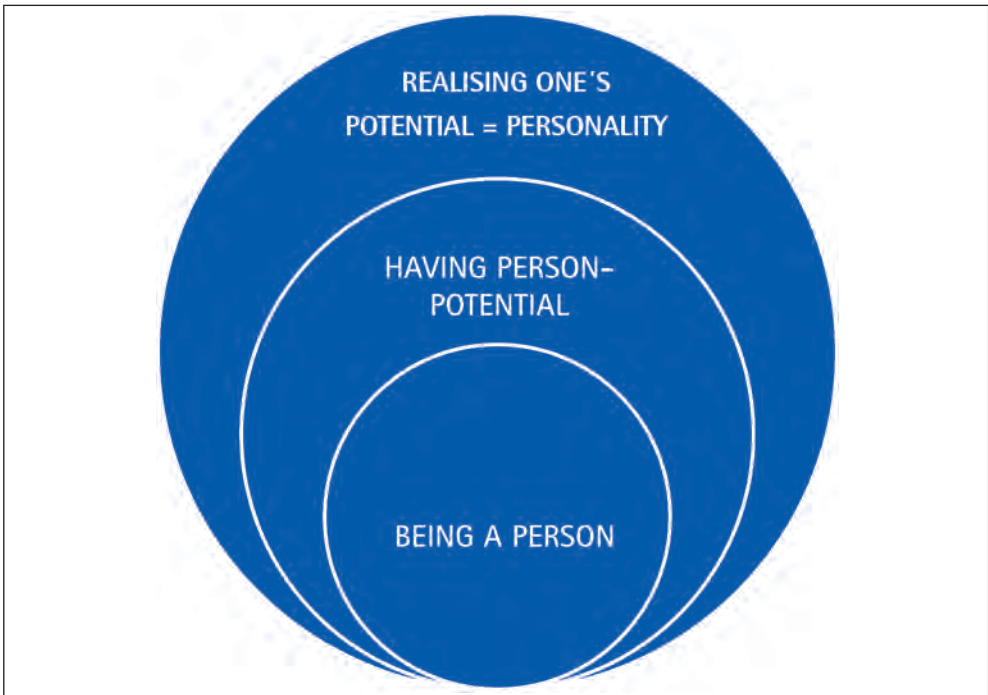
27 | Person, person–potential, personality (based on Rütter 2008: 111).

The starting point for personality in the sense of having one, i.e. for the fundamental opportunity to develop personally, is called »person-potential" (Rütter 2008: 111). Although »person-potential« refers to this initial point, this does not mean that it is a mere precursor of personality. It actually designates the »original personality« in the sense of having and being one, on the basis of which subsequent personality development takes place. The human being continually develops his personality until his death; during one's earthly life, the personality is never a final

state, but only an intermediate state. If personality is work in progress, the road to its formation and development is education.

In regard to education, as with any well-planned project, the formation of four elements must be considered:

1. The actual situation of the project
2. The conditions under which the project will take place
3. The desired target state
4. The strategy that can be derived if a certain desired condition should be achieved, keeping the analysis of the actual condition and present circumstances in mind.
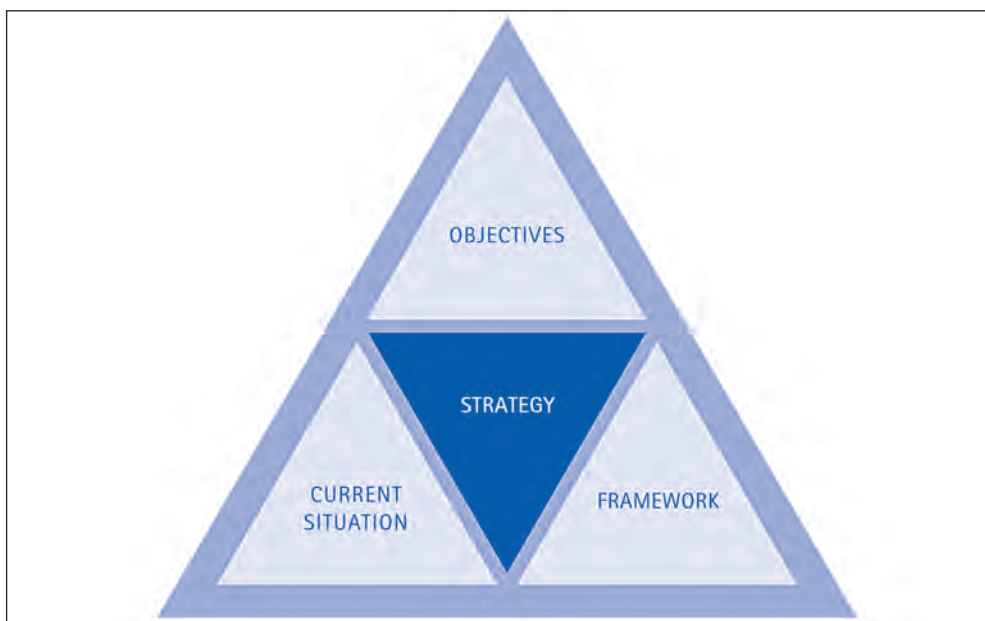
28 | The strategic triangle of (company) development (Faix 2008).

Applied to the terms »education« and »personality development«, this means: 1. Status quo: What is the person-potential of the person being educated? 2. Conditions: What means, for example, do society or the community use to connect with people, i.e. what external conditions does the recipient of the education have to deal with (the community or society's environment and the greater outside world

with its institutions, organizations, values, norms, rules, etc.)?[39] 3. Target state: What kind of personality does the person wish to develop or be? 4. Strategy: Which pedagogical conditions should be met and what actions and activities must be completed so that this person develops the desired personality? Specifically, i.e. applied to the formation of an individual's personality, this means:

- The ACTUAL SITUATION of my person-potential,
  i.e. my currently actualized personality.
- The FRAMEWORK for my personal development, personal situation,
  i.e. private, professional, etc. as well as opportunities and chances.
- My OBJECTIVES – in terms of having a personality and
  being a personality – that I can and want to accomplish.
- My education, i.e. my personal development STRATEGY: What, why,
  with whom, how and when do I want to achieve my objectives?
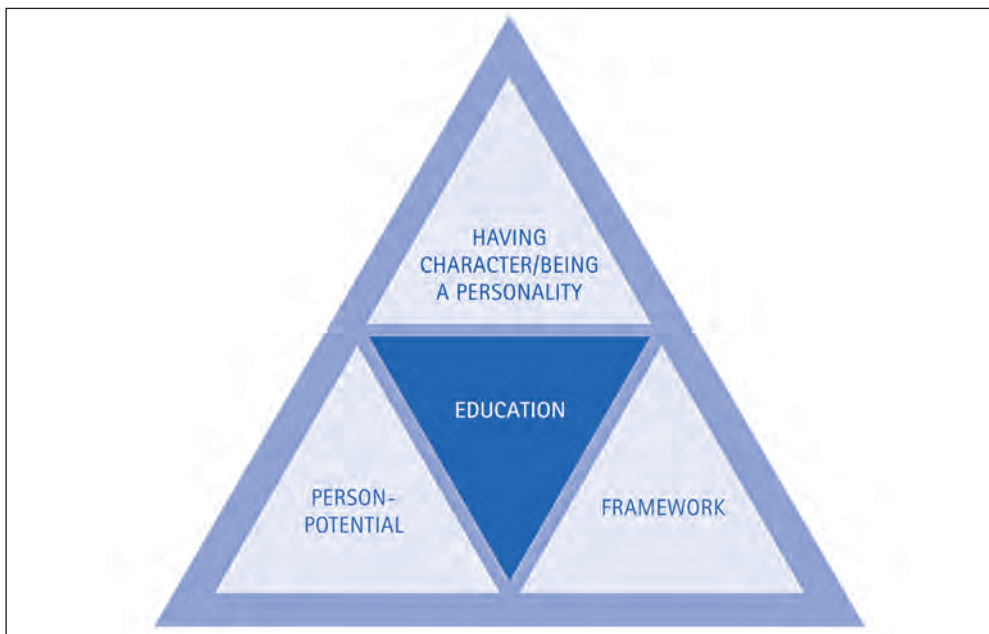
29 | **The strategic triangle of personality development[40].**

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39 Education is »always a balancing act between self-realization and successful adaptation to the norms, values and demands made by third parties on us« (Faix, 1996 Laier: 64).

40 A similar view is found in Faix, Rütter, Wollstand 1995. This triangle of »personal development« was developed on the basis of the ethnological definition of culture. In this illustration, the »good / better life« is defined as the target state.

As stated above, personality – as well as the individual constituent elements of this concept – is linked, albeit in a complex manner. In other words, the development of one element potentially leads to the development of other elements as well as to the development of the overall structure. However useful and correct it is to educate one's entire personality, it is equally so successful and important to focus on each individual element. University education could and should mainly focus on the element of »competence« and apply the strategic triangle of personality development as follows: 1. Actual state: What competencies does the student have? 2. Conditions: With what environmental conditions is the student confronted while developing these competencies? 3. Target state: What competencies does the student want to develop and to what degree? 4. Strategy: What are the educational givens and what must be done so that the student can develop the competencies he is after?

Actively confronting one's own personality development represents the »interplay between today's actual condition, the new target state and the means [...] that form this process of change« (Rasner, Füser, Faix 1997: 346). This results in the following ideal education:

30 | Ideal course of an education.
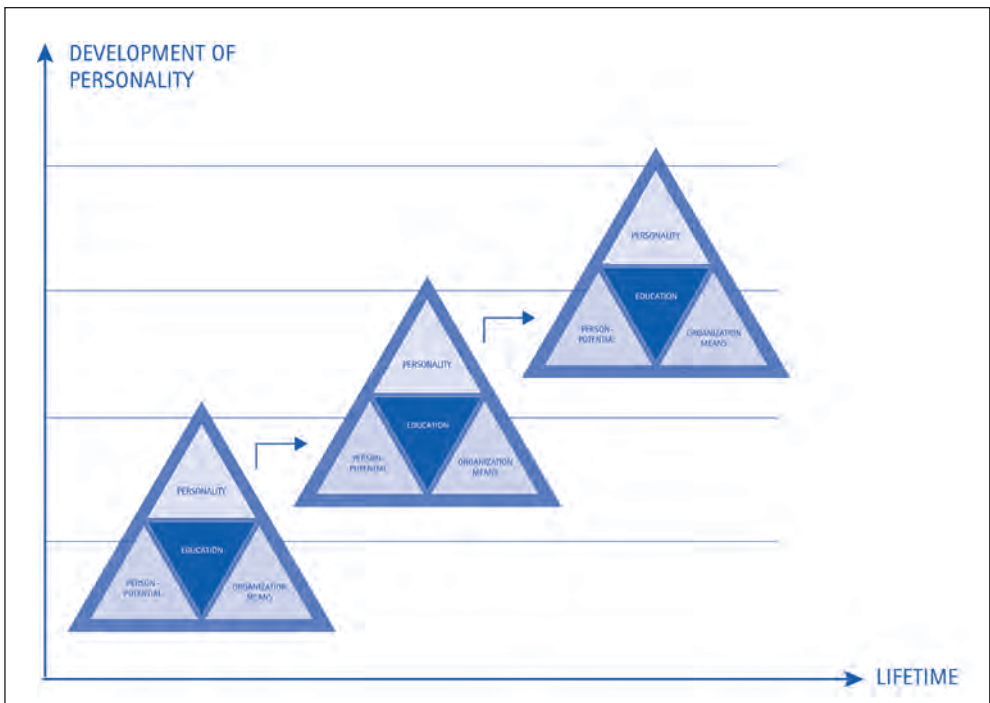
Education understood in this light means more than the mere accumulation of knowledge; it is self-realization and the development of all of one's congenital and acquired traits through the active engagement with everything in one's world.
It is misleading to narrow down learning to instruction, thus reinforcing the image that the brain is a kind of mental catch basin. According to this model, a teacher can take an »educational funnel« to pour anything into – or indoctrinate, if you will – the brain. It would be better to understand learning as intrinsic »self-construction«. [...] »Self-construction« means developing one's personal interactions with the environment actively, selectively, self-interestedly, purposely, opportunistically, in a program-controlled manner, adaptively and »gene-selfishly« (Voland 2007: 155).

An individual's personality is the result of the synergistic interaction of the following aspects (cf. Faix, Rütter, Wollstadt 1995: 75 and Rütter 2008: 116-133):

- Generativity, i.e. the continually updated genus-specific person-potential: who am I, when I consider myself to be an example of the human species; when I see myself as a genotype?
- Naturality, i.e. the continually updated natural person-potential of the person as a natural being: who am I when I look at my »natural endowment«; when I see myself as a phenotype?
- Sociality, i.e. the continually updated social person-potential: who am I when I see myself as part of a »human network« (Rütter 2008: 119); when I see myself as woven into complex relationships with other people?
- Culturality, i.e. the continually updated cultural person-potential: who I am when I see myself as part of cultural history; when I see myself as part of a man-made world?
- Individuality, i.e. the continually updated individual person-potential: who am I when I consider myself unique; when I consider myself as a solitary being (Rütter 2008: 120)?
- Spirituality, i.e. the continually updated spiritual person-potential: who I am when I see myself as a free, self-creating being that can also observe itself; when I see myself as a finite being that might be able to transcend into infinity (cf. Faix, A.-V. 2010)?

Human development generally follows a similar sequence of steps: an individual is born as a member of a species, develops during his lifetime into a role-prone, adjusted citizen and finally moves away from this state of adjustment towards self-realization.

NATURE	CULTURE	MIND/SPIRIT
Development as member of a genus	Development as a member of a society	Development as an individual
The person as a natural being	The person as a cultural being	The person as a natural being
– Biology – Instincts – Drives – Natural needs	– Civilization – Education – Socialization – Acceptance of roles – Internalization of values	– Spirituality – Meaning – Self-realization

31 │ The education that humans have in common (according to Faix, Rütter, Wollstadt 1995).

The six aspects mentioned can be divided into two sets of three terms, and these can be represented in two dimensions (see ill. below). The three aspects of generativity, sociality and individuality on the horizontal plane can be related to the three aspects of naturality, culturality and spirituality on the perpendicular. The simplest type of relationship arises from combining one aspect on the horizontal axis with one aspect on the vertical axis. The resulting nine aspects enable more a differentiated consideration of person-potential and provide a context for ordering one's current developmental stage and one's further personal development.

32 │ The nine possible expressions of an individual's person-potential (Faix, Rütter, Wollstadt 1995: 76).

	Generativity	Sociality	Individuality
Spirituality	7	8	9
Culturality	4	5	6
Naturality	1	2	3

At this point, it will suffice to emphasize three »privileged aspects« (Rütter 2008: 130), namely, fields 1, 5 and 9 (on the other aspects see Faix, Rütter, Wollstadt 1995: 77-78 and Rütter 130f.).

Aspect 1: Here, an individual is an example of the human species and subject to the specific, universal and immutable laws of nature that apply to this genus. Person-potential arises from the common and unalterable opportunity for personal development; in the inherent privilege and principle of obtaining an education. Personal development is a result of the general and immutable laws of nature, i.e. it occurs due to the influence of the resources explicitly available to the human species, with the educational processes intended by nature, and oriented to the goals that nature foresees for the human species.

Aspect 5: Here, an individual has a role and plays it in society. He is thus integrated into the comprehensive yet mutable laws of his specific culture (values and norms). Person-potential arises from the comprehensive and mutable society-specific opportunities, i.e. from the educational opportunities a society offers its members. Personal development is a result of the comprehensive yet mutable laws of the specific culture, i.e. it occurs due to the influence of the resources explicitly available to this society, with the educational processes intended by society, and oriented to the goals that society foresees for its members.

Aspect 9: Here, an individual is an individual who exists in sensory worlds, is idiosyncratic and unique in the best sense and subject to self-imposed values and a sense of personal responsibility and self-sacrifice. Person-potential arises from what the individual recognizes as himself, what gives his life meaning and what makes him unique and irreplaceable. Personal development follows the creative principle, i.e. it occurs due to the influence of explicitly available resources, with the education the individual embraces, and oriented to goals that the individual has set for himself.

The philosopher Odo Marquard stated: »The future needs a solid past« (Siemens AG 1994). Schumpeter once said about this that any concrete development of a company is based on previous developments, that even the most zealous entrepreneur must consider a company's real facts and derive his decisions from these, and that the future can bring forth nothing else but that for which a foundation has already been created in the present and in the past (Schumpeter 1952). The development of a company can therefore only take place when its future is planned based on consideration of its origin, i.e. its past and present.

A person who doesn't know his origins or his current position cannot figure out where he wants to / can / may / must go and what means and ways he needs to arrive there – or can do this only in a very amateurish way. In this context, business development must be understood as a process that is always dynamic and ongoing.
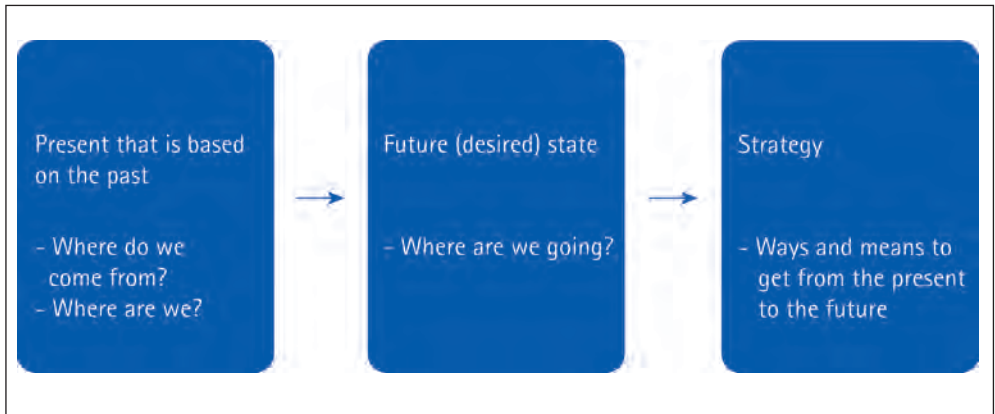
33 │ The future needs a past

The process of business development is symptomatic of any development process as well as for personal development. Education, in terms of the development of personality, never implies creation out of nothing, but ongoing (re-)design of what already is. And just as with business development, planning the development of one's own personality involves continual occupation with one's past and present. In other words, to develop one's personality, constant reflection on one's actually realized person-potential is necessary as well as opportunities to realize it in the future.

2.2   HAVING PERSONALITY AND BEING A PERSONALITY

The term »personality« or »character« – has probably been discussed as often as the concept of education has been discussed, not only in the economic environment, but throughout the entire course of human intellectual history and in countless different ways. Nevertheless, we venture to add yet add another facet. It is in the nature of the humanities and social sciences to disagree on fundamental issues. This is of course primarily because the terms they work with are not terms

like »chair« or »table«, which can be pointed to or measured, and which for most people evoke at least phenomenologically similar concepts (chair = something to sit on, table = something to place objects on), and which a discussion partner – if he questions their fundamental existence – can be literally or figuratively hit on the head with. The term »personality« is one such liberal arts- or social science-based term. »Personality« refers in some way to a reality that wants to be understood and must therefore be conceptualized; the essence, the actual concept and its real significance, however, requires great discussion.

In addition to this first fundamental problem, the phenomenon of »personality«, the following epistemological condition arises. According to the so-called »operational constructivism« theory based on the work of Niklas Luhmann, observation provides no direct access to an objectively existing world.

> *[Thus, one can] not assume an existing world that consists of things, substances and ideas, and one can also not define the totality of the world (universitas rerum) simply by naming it thus. For systems of meaning, the world is not a giant mechanism that produces states out of states and thereby determines systems. Instead, the world has an immense potential for surprises. It is virtual information, but of a kind that needs systems to produce information, or more precisely, to give selected irritations the sense of information (Luhmann 1997: 46).*

We find neither things nor terms nor questions in the world. It is and remains a totality, from which phenomena only emerge when humans turn their gaze on it.

> *Knowledge is different from the environment because the environment does not contain distinctions, but simply is as it is. In other words, the environment contains no otherness and no possibilities. It happens as it happens. [...] Everything observable is the observer's own contribution [...]. There is nothing in the environment that corresponds to knowledge; everything that corresponds to knowledge is dependent on distinctions, i.e. something is designated as this and not that. In the environment there is neither thing nor event, if these terms are meant to designate that the thing so designated is different than anything else (Luhmann 1988: 15f.).*

Applied to the phenomenon of »personality«, the term refers to an indivisible totality, just like the term »world«. We observe in this totality such »things« as temperament, competence, identity, etc., i.e. we differentiate various elements in the

totality of »personality«. These distinctions are not a »natural« given, but are the deeply personal cognitive abilities of an observer; another observer may observe something else in the phenomenon of »personality« and come up with completely different distinctions.

In our observation of the human personality, we want to proceed in accordance with the philosophical mindset of pragmatism. This implies in particular that all thinking should start from the primacy of practice. Accordingly, the meaning or truth of concepts is illuminated by practical usage, i.e. what a term means is how people use this term in everyday life. Pragmatism isn't so much about clarifying what a concept actually is; the reality of a concept arises from the fact that people observe a phenomenon in their world and use a particular conceptual placeholder for it when thinking about or discussing it with others.

In German-speaking countries, the term »personality« is used in this pragmatic sense in two ways: on the one hand, it expresses »having«; on the other hand, »being«. »Having« expresses itself, for example, in the idea that someone can work on his personality, that it is something that should be developed; »having« also expresses the fact that something is an expression or manifestation of the personality. Personality appears here as something that belongs very deeply to a person, which the person can (re)shape on the one hand, and the other hand, is the basis of his behavior or methods of interaction.

Personality as »being« is expressed in such phrases as »he/she is a great person« or »he/she is a well-known personality from sports / politics / economy / society / culture« etc. In this case, the term »personality« refers to a person who plays a particular role in society. In other words, the existence of personality is the result of a complex social process in which a community rates the rank / importance / influence etc. of a subject on the community.

In short, we wish to state that in common parlance, you can both have a personality as well as being a personality. Accordingly, personality as we understand it denotes both having personality as well as being a personality.

2.2.1   THE ELEMENTS OF HAVING PERSONALITY

Having personality stands for having that combination of elements that gives a person unique and distinctive individuality.

> *In psychological-psychiatric usage, personality can be defined as the set of (mental) properties and behaviors that make a person unique, characteristic and distinctive. This is a largely stable – or at least long-lasting – [individual] structure [...] (Dittmann and Stieglitz 1996: 220).*

Admittedly, our enumeration of elements represents one – namely our – selection of the myriad elements and categories that could also be assigned to the term »personality«. Elements such as intelligence, prejudices, opinions, attitudes, one's body or body-awareness also belong to the personality, of course, as do many other elements as well. Our selection and even our entire understanding of the term »personality« is accordingly just another temporary solution that serves the purpose of this work. In our opinion, personality consists of a deeply individual totality of the following elements:
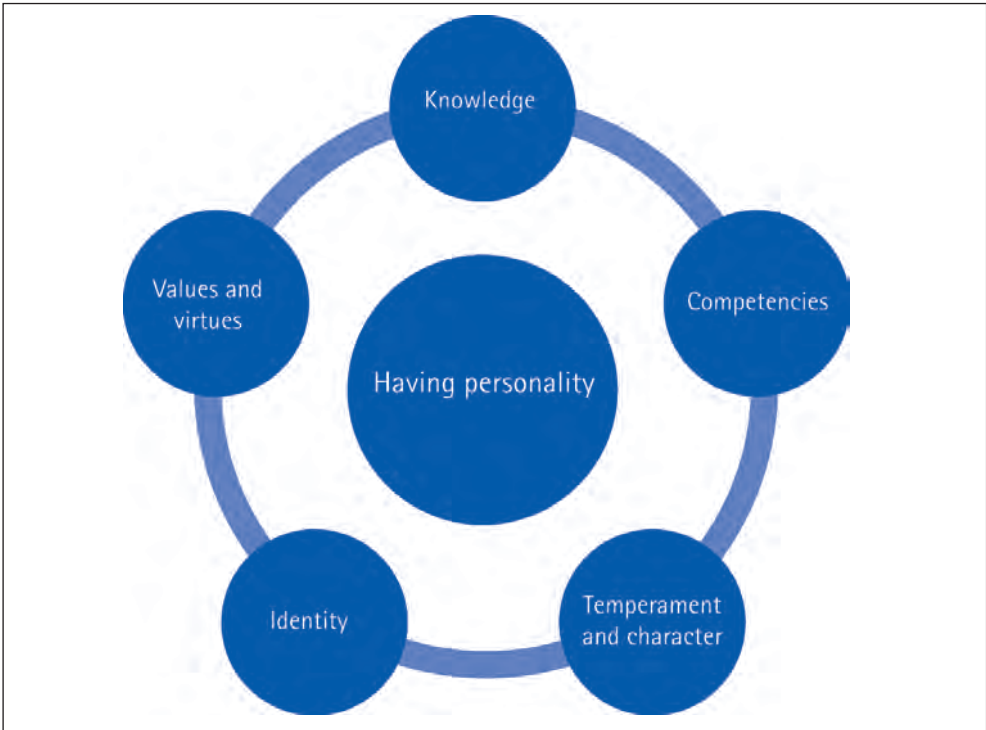
KNOWLEDGE

This term refers to »the result of a process of understanding that takes place through the classification of information in a context based on individual experiences« (Klein 2001: p. 73). In order for information – i.e. characters (letters, numbers, symbols) placed in a context of meanings and problems – to become »knowledge«, a person must absorb it into his contextual experience; in the way he thinks, feels, wants and acts. In other words, information becomes knowledge when a person selects the information, evaluates it and compares and cross-links it to knowledge already stored in the memory (cf. Wiater 2007: 15f.).
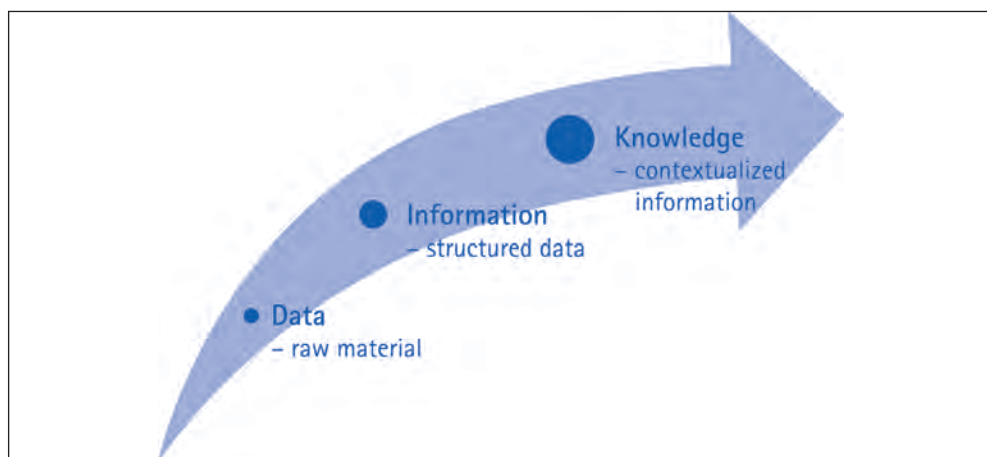
35 | Data, information and knowledge (based on Rowley 2007).

Implicit as well as explicit knowledge forms the basis for many derivatives such as opinions, prejudices about oneself, others and the world itself, and also for competencies.

COMPETENCIES

Since the 1960s there has been increased debate about the educational goal of »competency development«. This is probably attributable to the fact that in Humboldt's sense, education primarily means working on and learning about as much of our world as possible in order to develop as a person. Now that this world has become increasingly complex, unmanageable, uncertain and chaotic, the crucial mission of education is to give people the capabilities to deal with uncertainty and opacity as well as with complex and chaotic states. This is precisely what we mean by the term »competency«.

Generally speaking, »competency« refers to those performance requirements of an individual[41] (attributes, skills and willingness) that reveal themselves through the need for self-organized management of complex, ambiguous and problematic situations that require concrete action. In such situations, the individual must evaluate or generate knowledge contextually in order to know what to do – and to do it. In brief, competence is »disposition to self-organized action«, which becomes especially concrete when new and non-routine situations must be dealt with (Erpenbeck, Rosenstiel 2003: XI. the same, 2007: XXIII).

If a system is self-organized, it is not governed by »top-down« rules. Instead, new, stable, seemingly efficient structures and behaviors emerge spontaneously from the system. Self-organization[42] enables a system to handle contingency, i.e. the spontaneous handling of the unknown or of things that suddenly change. Self-organization also expresses itself in the self-initiated evolution of performance requirements by the system as well as the ability to accommodate performance requirements in light of changing tasks and situations (Bergmann 1998). Specifically, a person is competent when he independently develops radical and/or incrementally new solutions to previously unknown situations based on his own knowledge and experience.

In a professional context, the term competency denotes such »skills and abilities that do not provide immediate and limited reference to specific, disparate activities, but rather the suitability for a large number of positions and functions and the handling of a sequence of (mostly unpredictable) changes of requirements in the course of life« (Mertens 1974: 40).[43] To demonstrate on-the-job competence thus means »understanding the increasing complexity of one's professional environment and shaping it through targeted, confident, reflected and responsible action« (Sonntag, 1996: 56).

A differentiated taxonomy of general or basic competencies is provided by Erpenbeck and Rosenstiel (2003 and 2007b; cf. also Faix et al 1991: 37). They first distinguish the following classes of competency: technical and methodological competency, personal competency, social-communicative competency and the competency to take action and make decisions (cf. Erpenbeck, Heyse 2007b: 159). Technical and methodological competency: The disposition of a person to act in a

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41 These performance prerequisites are multimodal, i.e. cognitive, social-communicative, volitional, actional / motorical and emotional-motivational. They must be used in situations of a primarily cognitive, sensory-experiential, social-interactive and emotional-motivational nature.

42 For a further and more in-depth discussion of the concept of »self-organization«, please see the work of the founder of synergetics, Hermann Haken (e.g. Haken 2004).

43 In the above quote, Mertens is actually defining the term »key qualifications«. Here, we prefer the term »competencies«, primarily because the use of a completely different word much more easily reveals the differences between this and the term »qualifications«, rather than making them seem like a mere aggregate.

way that is mentally and physically autonomous when solving problems, i.e. creatively solving problems using professional and instrumental knowledge, skills and expertise and meaningfully classifying and evaluating knowledge. This includes a disposition for methodically and autonomously shaping actions, tasks and solutions as well as creatively developing the methods themselves.

Personal competency: The disposition of a person to act reflectively and autonomously, i.e. to accurately assess his/her own abilities and develop productive attitudes, values, motives and self-images, to unfold his/her own talents, motivation, performance objectives and creatively develop and learn both inside and outside of the work environment.

Social-communicative competency: The disposition of people to organize themselves so that they can communicate and cooperate with others, i.e. creatively discuss and work out solutions with them, to orient themselves in a group and in relationship to others and to develop new plans, tasks and goals.

Competency to take action and make decisions: Disposition of a person to take active and comprehensive action, in particular the capacity to integrate one's own emotions, motivations, skills and experience and all other competencies – technical and methodological, personal and social communication – into one's own drive to succeed.
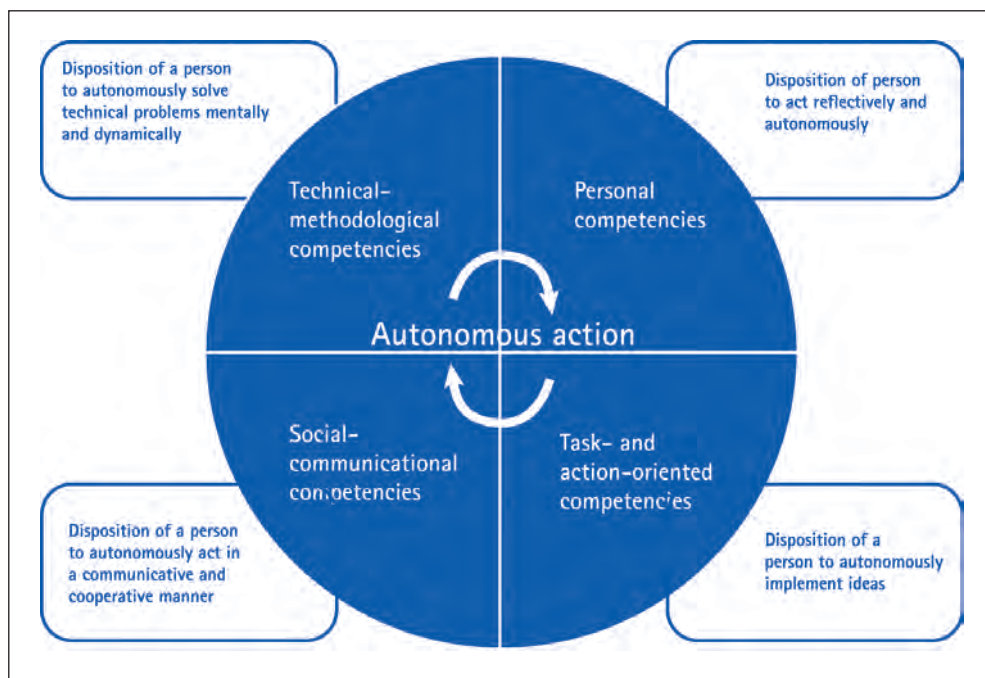
36 | Competences as a disposition to act in the face of the new and unknown (based on Erpenbeck, Heyse 2007b).

TEMPERAMENT AND CHARACTER

The term »temperament« means »the type of drive and activity that reveals itself as emotions, decision-making and instincts« (Dittmann, Stieglitz in 1996: 220). An essential source or condition for each specific temperament lies in the particular disposition of human impulses. These are primarily characterized by a spontaneous increase in the willingness to act and a final action that is experienced with pleasure. In other words, drive creates and provides »the desire to perform« (Cube, 1998). The four human impulses are the drives for food, sex, aggression and exploration / curiosity (Cube, 1998).

These drives are thus the primary source of what we call temperament. The four human drives, the degree of which differs from person to person, are an essential building block for the temperament of a person; temperament thus means primarily the unique disposition of the four drives in an individual. Temperament is also an essential part of what we mean by »character«. »Character« refers to the characteristics of a person that remain largely constant during the course of life and that can hardly be changed – or only for a limited time – in a lifetime of all kinds of educational processes.

In this respect, our understanding of »character« greatly matches the lexical approach to empirical personality research. In this approach, the entire lexicon of a language is scoured for adjectives; rather uncommon ones are omitted and in the case of words with very similar meanings (synonyms, nominal definitions), only one is kept. This approach was first carried out for the English language in a significant fashion by Norman (1967) and Goldberg (1990). The 18,000 adjectives collected by Allport and Odbert (1936) were thereby reduced step by step to 100 words. Words were also omitted that refer to physical traits, health, sexuality and attitudes as well as values. Using factor analysis, these data were then reduced to five major factors of character. This resulted in development of the most meaningful and currently most frequently used approach of the so-called »Big Five« character traits (»OCEAN« approach).

Abbreviation	English
O	Openness to new experience
C	Conscientiousness
E	Extraversion
A	Agreeableness
N	Neuroticism

Table 1 | The »Big Five« character traits (OCEAN approach).

Unlike the other elements of the personality, »temperament« and »character« refer to something in humans that differs from the other elements of personality in two respects: 1. unlike the other elements, temperament and character are distinguished by relative rigidity, i.e. regardless of what happens to a person over the course of a lifetime, his temperament remains relatively constant. 2. Unlike the other elements, temperament and character are distinguished by the fact that they solidify at a relatively early age, namely during childhood, and cannot be so easily influenced by later educational processes as the other elements.

IDENTITY
In contrast to character, the term »identity« refers to the individual characteristics of a person that are neither rigid nor constant and therefore evolve throughout life as a result of educational processes of all kinds.

To capture the specific identity of a person in its totality, the person should reflect on the educational path his identity has taken. This includes elements common to

everyone as well as elements specific to the individual. In other words, the person should develop a comprehensive self-awareness about himself as a natural, cultural and spiritual being (cf. below Faix, Laier 1991: 110f.)[44]

–   Self-awareness as a natural being: Humans are embedded in their nature – in their emotions, instincts and impulses. They must understand and perceive this. »[Konrad] Lorenz aptly characterized the evolutionary situation of humans: »Selection has grasped people under the arms and placed them on their feet, and then removed the arms supporting these people. And now? Stand or fall – as you manage!« But people remain standing only if they understand the laws of nature, in particular the laws that govern their own nature!« (Cube 1998: 14). Self-awareness in this sense allows people to actively influence their own instincts because these are purely behavioral dispositions.[45]
–   Self-awareness as a cultural being: In addition to their own nature, humans are always influenced by their culture. Their behavior depends on the respective social roles they take. A person who is a manager behaves differently than an employee in a stable. Moreover, his value system is continuously influenced by his environmental experiences. Self-awareness thus allows conscious perception of one's own roles and values. On this basis, cooperation with others can effectively proceed through active involvement or control without.
–   Self-awareness as a spiritual being: Humans must perceive themselves as spiritual beings. They must be aware of their spirituality, actively pursue objectives such as wisdom and act responsibly.

By strengthening their self-awareness, people can better get to know their own needs as natural, cultural and spiritual beings. Building on this, they can define fruitful targets for themselves and eventually contribute more effectively to the world.

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44   Cf.: »The transformational power of education can only be fruitful if the individual manages to repeatedly stabilize his identity while going through a biographical series of ever more complex and often new demands. »Humans in the modern age« are described here as particularly reflected, differentiated, open and individuated. The core of the modern educational mandate is therefore to find the cultural identity of each individual« (Tippelt 2013: 240).

45   An example of such instinctive action is the fear of foreigners: »Humans were originally created for life in small groups. The transition to life in anonymous communities resulted in identification difficulties. On the one hand, there is an obvious urge to bond with strangers. On the other hand, we observe the tendency to stay in our own groups and close ourselves off to others. [...] People always feel less connected with strangers and thus, less inhibited about expressing aggression« (Eibl-Eibesfeldt 1970: 16f.). Knowledge of this instinctive action helps people understand their spontaneous adverse reaction to strangers and strange things (stranger anxiety) and to confront it with rational-ironic distance.

VIRTUES AND VALUES

According to Gottfried Wilhelm Leibniz, virtue is »an unchangeable intention of the mind [...] through which we [...] are driven [...] to be good« (cited in Eisler, 1904, Vol. 2: 529). In other words, virtue manifests itself in the inescapable feeling – unconditionally founded on freedom – of wanting to achieve something in a particular way. According to Max Weber, values are the very first »determiners« of thought and action. These determine the paths »in which the dynamics of interests induce action« (Weber 1988/I: 252). If values determine what we achieve (the »something« mentioned above), then virtues determine the way we approach this realization. Virtues impregnate action to a certain extent.

A person cannot be understood as a self-contained system. We constantly interact with our environment. Our own values and goals have an impact on the community, and the community's values and goals in turn also have an impact on us. We ultimately understand morality to be responsible and beneficial action. In earlier ages, morality was a social norm with a substantial influence over people. Today, when people strive for (apparent) self-realization and allow themselves to be influenced less by institutions such as the church and the like, such moral action must come from ourselves.
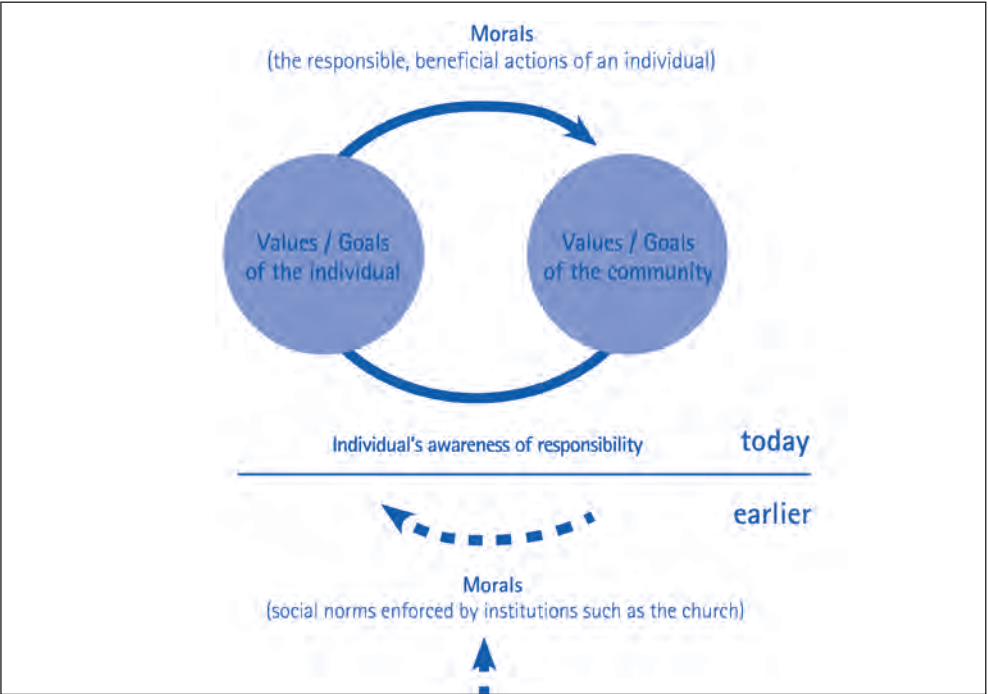
37 | The development of a sense of responsibility in the past and present.

Knowing or defining one's own values today is the result of two interwoven processes whose goal is achieving an awareness of responsibility. First, a person must perceive his own goals as the result of a need to perceive himself as a natural, cultural and spiritual being. If this is to be done, an awareness must be developed of

- The give-and-take dependence on nature
- The give-and-take dependence on human communities
- The importance of peace, freedom and democracy (cf. Faix 1995: 29).

2.2.2   THE ELEMENTS OF BEING A PERSONALITY

In regard to how »having« personality relates to an individual's concrete actions, »personality« involves the following triad of behaviors: the ability to act (knowledge, competencies), the willingness to act (temperament) as well as behavior, intention and reflection character, identity, ... values and virtues). In the second case – »being« – the term »personality« designates a socially determined concept. To be a personality, the following must coincide, in our opinion: an individual must have charisma, respect and authority, which shows up in the fact that he takes action, how he takes this action, and the action itself.

38 | Being a personality.
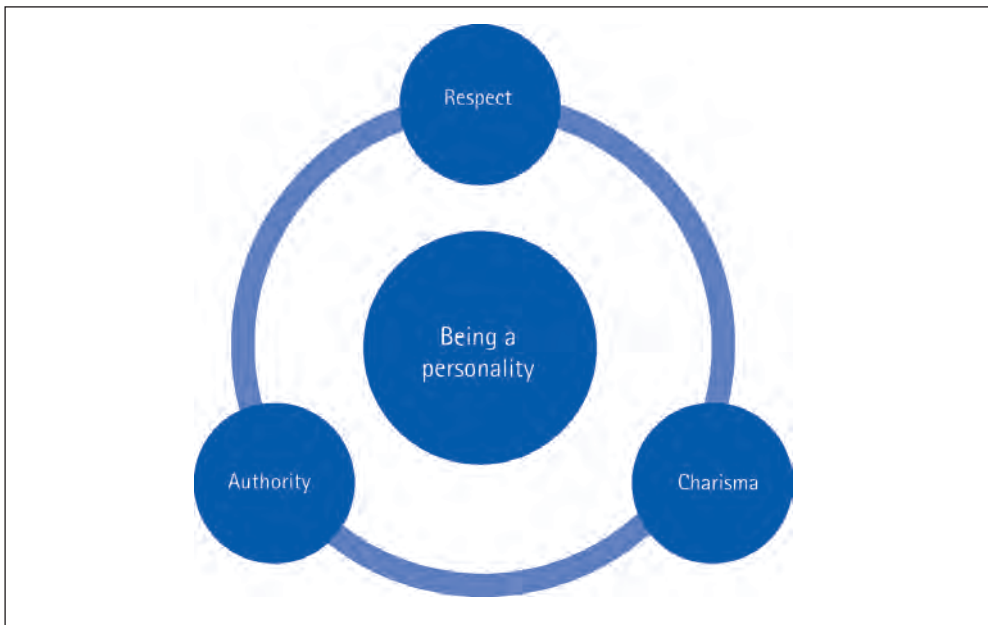
RESPECT

The term »respect« implies more of a focus on the action and expresses itself more in objectively justified praise and recognition from others. Respect thus means that others particularly appreciate one's beneficial actions.[46] The focus of appreciation is thus the planned actions, the acts themselves and their consequences.

CHARISMA

While the terms »respect« and »authority« are more or less sharply delineated in the scientific sense, the term »charisma« presents some difficulties.

> *»Charisma« is a very multi-faceted term, which has its place in scientific terminology just as in advertising, in the media and in everyday language. It has particularly penetrated the language of economic policy and marketing as well as the pseudo-scientific language of pop-psychological self-help literature. Because of this »decay« of the term, it is indeed often impossible to distinguish what »charisma« should mean, beyond the idea of an exceptional, not readily explicable personal attractiveness [...] (Rychterová, Seit, Veit 2008: 9).*

Due to excessive use of the term in contexts far removed from science (e.g. journalism and self-help writings) as well as through the many types of scientific use, the term »charisma« has become very blurry and ambiguous. Is it a theological, sociological or psychological concept? Is it a gift (a gift from God, a natural disposition), or is charisma based on performance? Is it based on performance, wisdom, genius or is it »magic«? Is the cause of charisma a more introverted inner peace or an extroverted outer radiance?

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46   In a study in kindergartens, the anthropologist Barbara Hold-Cavell (1974) found that the children who were in the spotlight or were the focus of attention were not the most aggressive, but those who showed behaviors that were beneficial for the community (organization of games, sharing, settling disputes, consoling). Generally, such behaviors appear to be both aggression-inhibiting as well as stabilizing for relationships, and this is also seen cross-culturally (Eibl-Eibesfeldt 1970: 268).

Children who are the focus of attention are also the most »respected« in the group and enjoy the greatest amount of »respect« in the literal sense, i.e. they are »seen« the most and longest by other children, they are heard, they are noticed when they say something. This behavior is also reflected in our close relatives in the animal kingdom. »High-ranking monkeys get the most attention from others. If one counts who is most often observed by the other animals, it is always the highest ranking. In humans, this is similar to what expresses itself in the idiom that a person enjoys »respect«. Maintaining or improving this attention, i.e. respect from others, is a central concern of every social interaction. There is hardly anything worse than losing face« (Eibl-Eibesfeldt 1988: 161).

For us, the term »charisma« implies a focus on the actors and the emotional reaction they get from others. It means that others especially appreciate the person responsible for beneficial actions. Thus the focus of appreciation is the fact that the actor takes on an activity as well as how he does this, how he represents his actions externally and stands up for these and their consequences.[47]

AUTHORITY

The term »authority« means that a community grants a person (or institution) special influence on the community based on their performance (cf. Der Duden, Das große Wörterbuch der deutschen Sprache, keyword: Autorität). An inevitable consequence of a community's appreciation – in the form of respect and/or charisma – is thus increased influence over this community.

Being a personality is thus the result of a two-tiered social process. The first part of this process is that the actor and the action are evaluated by a community. The criterion for evaluation is the benefit that arises for the community through the action. The second part of the process is that due to the community's judgment, the agent gains influence over it. Insofar as an individual realizes his personality and this results in a beneficial contribution to the community, the individual gains increased respect in the eyes of the community as well as more charisma and authority. Last but not least, the individual is considered to be a significant and influential »personality«.

In this book, we greatly emphasize the aspect of the »benefits to the community«. We could be accused of saying that the purpose of education is to help the person unfold. We would agree, but at the same time counter by saying that – with some exceptions – no man is an island, nor wants to be one.

> *As descendants of highly social ancestors – a long line of primates – we have always lived in groups. [...] From the very beginning – if an initial point could ever be found – we were interdependent on each other [...]. We come from a long genealogical gallery of [...] animals for whom life in groups was not an option but a survival strategy. Any zoologist would classify our species as necessarily sociable (De Waal 2008: 22).*

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47 In addition to the condition needed for the development of charisma, we assume that above all, the following elements are constitutive for the magical aura that some people possess: for one thing, wisdom, i.e. spiritual maturity, enlightenment and thus inner peace with themselves and the world; for another, body control, i.e. the development of great bodily awareness all the way down to the fingertips. (On the question of how such bodily awareness could be developed, we like to refer to Adjemi 2012.)

We are group-fixated individuals who are absolutely focused on communities and societies. And it is our nature to contribute to the existence and development of the group. Naturally, education should and must help individuals develop their own potential. But education cannot and should not only do this – i.e. be limited to escapism. As beautiful and exciting as a temporary stay in the ivory tower is, as wonderful and fulfilling a little egocentrism here and there may be, we can only find true and complete fulfillment if we serve others using what we know and what we can do. The teachings of Jesus, Confucius and Buddha on a full life, the insights on bliss handed down to us by Aristotle, Plato and many of their successors can in principle be summarized as follows: only the person who gives others something that fulfills and makes them happy can himself live a fulfilled and happy life.

2.2.3   EDUCATION AND THE DEVELOPMENT OF COMPETENCIES

In principle, becoming a personality is a lifelong affair; only death (probably) marks the end of the process of personal development. The tight conceptual link between personality and education that we have adopted inevitably implies that the point when people no longer educate themselves is a point that lies outside of their earthly existence. All elements that form personality are continuously subject to an educational process. However, empirical studies, neurological findings as well as all of our deepest personal experiences show that some »spiritual components« are always very fluid and others may start seeming sluggish at a certain point in life. Thus, knowledge and competencies are probably very versatile for a lifetime, whereas after adolescence at the latest, the temperament remains reasonably resistant and persistent. Despite the biographically-related fluidity and inertia of the various elements that make up the personality, we as a university can make a significant contribution to helping people better understand the world and act in it with confidence.

Since the university plays a role in the educational lives of people at a relatively late stage, we must also be modest and humble in regard to the development of the »deeper layers« of the personality. Educational practice and research is largely in agreement that in adults, core personality changes are difficult to achieve; knowledge, competencies and abilities, on the other hand, can (probably) be changed throughout a person's lifetime. »The positive message here is simultaneously that adults can change if they are either strongly motivated by certain circumstances or if they are exposed to the same influences for long periods« (Roth 2011: 31).

To emphasize the point once again, universities can greatly influence their students in regard to knowledge, identity and competence. The impact of universities on temperament and character, however, is rather limited – though it is of course possible.

Because we are approaching the subjects of education and personality from the perspective of a university, we will now talk about the element of »competency« – the disposition to be able to act in the face of the new and unknown – and the special concept of education as »competency development«.

Competency is that part of the personality that enables people to participate »in the abundance of a diverse world. [...] In this sense, being educated would be the ability to deal productively with abundance« (Fohrmann 2010: 176) in order to be creative in every social sphere – not only in the economy – so as to actively shape the future of the world. Gaining more education, in the sense of increasing one's competencies, results in an increased ability to act and thus, more participation in life and the world.[48]

As we understand it, the term »personality« is the totality of such »spiritual components« that people can develop.[49] Accordingly, the terms education and personality development would be synonyms, and the acquisition of knowledge, competencies, etc. would be aspects of education. For a person, education generally means the development of the personality, both in the senses of »having« and »being«. Particularly significant here is the sub-aspect of education that includes the development of one's own capacity to act and one's competencies. This means the ability to actively encounter an uncertain and dynamic environment, i.e. to get involved with and shape it. In the professional and business context, one also speaks of »employability«. Therefore, a primary educational mission is to promote »personalities with exceptional individuality so that they can use their acquired knowledge and skills to shape the world, provide services in their own interests and in the interest of society, and to consciously want to and be able to take responsibility in business as well as in public and private life« (Spoun 2005: 293).

A main objective of the Bologna Declaration from 1999 is optimizing the efficiency and effectiveness of the tertiary educational sector in Europe. As an important step for this, all study modules should be described on the basis of their learning outco-

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48 Cf. here the definition of »social skills« at Faix, Laier 1991:62.

49 As the latest findings in epigenetics show, this totality includes the fact that humans also influence their genes through their behavior. Genes are not (entirely) inherited as one's fate, but can be transformed by external influences, in some cases blatantly (Blech 2010).

mes.[50] The background of this is a paradigm shift in the educational sciences away from the traditional »teaching-centered approach« to a »studies- and learning-centered approach.« What is new about this studies- and learning-centered approach is that its focus is no longer the input of the teacher but rather the output from the learner, i.e. the learning results. Learning is defined here as a mental process in which a person processes information or a range of information (= input, e.g. in the form of tertiary »learning«) in their inner world, thus modifying this inner world in some way. The result of this modification of the inner world is that afterwards, the person knows, understands or can do something he could not previously do in this manner or fashion.

Transferred to the description of study modules, this means that a traditional teaching target specifies the general purpose or intention of the module. A learning objective describes, however, that at the end of a module, the inner world of the student has potentially been transformed in a certain way and he now knows, understands or is able to do something he couldn't do before.

As a reference for dealing with learning objectives in tertiary education, we will now discuss the DAAD (Deutscher akademischer Austauschdienst [German Academic Exchange Service]). When formulating and evaluating learning objectives, the DAAD refers to the findings of educational researcher Benjamin Bloom, whose best-known contribution to the education debate was the description of the levels of thinking behavior, from simple repetition of facts at the bottom level to the evaluation process at the highest level (Bloom 1972). Bloom's taxonomy is not a simple classification scheme. In his hierarchy, each level is defined by the ability to operate on a particular level or the levels below. For a learner to be able to apply knowledge at level 3, for example, he/she must have a mastery of level 2 and thus have and understand the necessary knowledge.

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50   The term »study module« or »module« should be understood to mean a self-contained, formally structured learning process with thematically specific learning and teaching, coherent sets of learning outcomes, a specified workload (expressed in credit points) and clear assessment criteria.

Bloom's taxonomy contains the following levels, which mutually build on one another:

Level	Competency
1. Knowledge	The ability to recall information, i.e. to be able to access relevant information stored in the long-term memory.
2. Comprehension	The ability to understand remembered information, i.e. to be able to assign meaning to information, either verbally, in writing or graphically.
3. Application	The ability to use information that has been understood, i.e. to carry out or apply a course of action (a scheme or method) in a given situation.
4. Analysis	The ability to break down information into its constituent parts, e.g. to discern interrelationships and ideas, i.e. to take apart learning content into its constituent elements and determine how these link together into an overarching structure or purpose.
5. Synthesis	The ability to build parts, i.e. to be able to assemble elements into a new, coherent and functioning whole.
6. Evaluation	The ability to judge the value of teaching materials for a particular purpose, i.e. to be able to make judgments based on criteria and standards.

Table 2 | The six categories of the cognitive domain according to Bloom.[51]

According to Bloom's taxonomy: a student who successfully masters levels 1-3 develops the abilities needed to be professionally proficient. A student who successfully masters levels 4-6 develops the abilities needed for professional success. At this point it becomes apparent that the development of the abilities needed for professional success cannot be accomplished by a teaching / learning paradigm that only focuses on levels 1-3. Only a teaching / learning paradigm that focuses on levels 4-6 can do this.[52]

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51 A similar taxonomy can be found in the portrait of the perfect learner in Judaism: The learning steps are listening (receptive learning), repeating (repetitive learning), understanding (emotional learning) and recognizing (cognitive learning) (Krochmalnik 2009: 64-65).

52 Today, the normative aspect at level 6 (social, awareness of ecological consequences) is moving more and more to the center when assessing options for action.

In order to appropriately formulate and evaluate learning objectives related to employability, the above-mentioned taxonomy must be supplemented or modified. The following also applies to the taxonomy below: only after the learning goal of one level has been reached can the student start working on the next stage. Such a taxonomy, which enables the formulation and evaluation of learning objectives related to employability, contains the following levels, to which certain cognitive processes can be attributed (cf. Mergenthaler 2009):


39 | Taxonomy of learning objectives related to employability
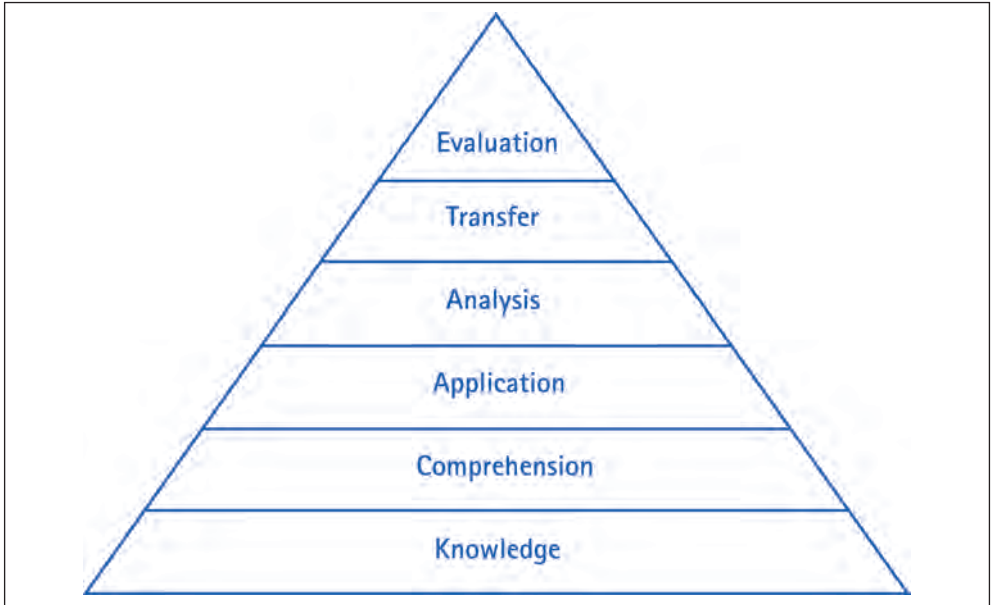
Level	Competency	Cognitive processes
1. Knowledge	The ability to recall information, i.e. to be able to access relevant information stored in the long-term memory.	Recognize, recall, define, reproduce, list, describe, identify, recite, specify, enumerate, identify, draw, run, sketch, tell
2. Comprehension	The ability to understand remembered information, i.e. to be able to assign meaning to information, either verbally, in writing or graphically.	Interpret, exemplify, classify, summarize, infer, compare, explain, represent, describe, identify, demonstrate, derive, discuss, explain, formulate, summarize, localize, present, explain, transfer, repeat
3. Application	The ability to use information that has been understood, i.e. to carry out or apply a course of action (a scheme or method) in a given situation.	Carry out, implement, perform, calculate, use, find, delete, fill, enter, print, apply, solve, plan, illustrate, format, edit
4. Analysis	The ability to break down information into its constituent parts, e.g. to discern interrelationships and ideas, i.e. to take apart learning content into its constituent elements and determine how these link together into an overarching structure or purpose.	Differentiate, organize, assign, test, contrast, compare, isolate, select, distinguish, compare, criticize, analyze, define, experiment, sort, categorize
5. Synthesis	The ability to build parts, i.e. to be able to assemble elements into a new, coherent and functioning whole.	Generate, compose, construct, assign, connect
5.1. Definition of goals	The ability to define new target states or target states that have never been formulated in this manner, based on the analytical results found at level 4.	Plan, organize, design, conclude, derive, develop

5.2. Derivation of goals	The ability to generate new patterns of action, with which the objectives newly formulated in 5.1. can be achieved.	Compose, conceive, design, develop
6. Evaluation	The ability to judge the value of teaching materials for a particular purpose, i.e. to be able to make judgments based on criteria and standards.	Check, assess, evaluate, argue, predict, select, establish, examine, decide, criticize, rate, estimate, promote, classify

Table 3 │ The six categories of professional qualifications and related processes supplemented by an extended list of verbs, based on Bloom and cited in Bachmann (2011).

The ability to act means that people, through their skills and abilities, can actively shape life and the world. Employability means that people can make a useful contribution to their profession with their skills and abilities. We can only discuss the abilities needed for employability in the strict sense, therefore, when a person exhibits behavior that can be assigned to levels 4-6. Levels 1-3, on the other hand, indicate the state described above as »professional proficiency«. In regard to knowledge of oneself or others, whether it is yourself or someone else who is an »expert« or »absolutely top-notch«, someone (or yourself) who is professionally proficient or completely capable, whether one »only« has knowledge or already has competencies, different test and measurement procedures must be applied, e.g. knowledge inquiry and knowledge transfer:
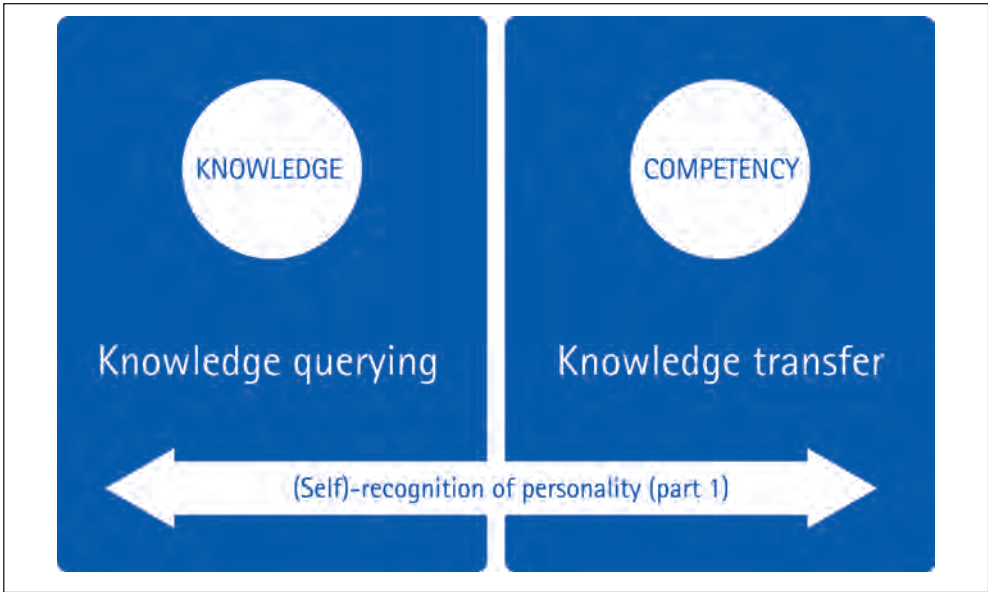
40 | Knowledge of oneself or others in regard to professional proficiency
and/or top-notch professional competency.

As discussed above, a level can be achieved only when a person has already mastered the previous level(s). This implies that pronounced professional ability requires pronounced professional proficiency. Through the ability to independently generate new ways of thinking and patterns of action and store these in one's memory, however, one's own professional skill, i.e. that firm belief that »something is this way or that way« and »this is how it's done« necessarily becomes a continuous and self-organized work-in-progress.

2.3   CONCLUSION

In the following section, we will summarize our concept of having / being a personality.

HAVING
A PERSONALITY

Individual constellations
of »spiritual elements«

ACTIONS

Synergetic interaction
of »spiritual elements«

BEEING A
PERSONALITY

Individual degree of appreciation that a
person and their actions receive from
society as well as the degree of influence
the person has on society, based on
these actions.

Knowledge

Competencies

Temperament
and character

Identity

Values and
virtues

Respect

Charisma

Authority

41 │ The concept of having / being a personality.

Based on this concept, education must always be understood as the formation of the whole personality, as the general education of the whole person.

> *[...] What is general about education [...]? [...] »Education« is the process by which people actualize their personal-potential and thus gradually crystallize their personality. They do this step by step throughout their lives, through the various situations of their lives, through social situations and thus through communication, interaction and collaboration, through conflict and collision with others and through crises in their lifelong struggles. In short, »education« stands for »personality«. That which a person develops from his personal (internal and external) potential – creatively from intellectual act to intellectual act; throughout his entire life and all of its struggles – that is his personality [...] (Rütter 2008: 303).*

Education only becomes truly human and »humanistic« when it develops the personality.

> *Human education should keep the entire person in view [...]. Human practice requires coherence [...]. The primary goal of human education is to help develop this coherence and thus enable a coherent life, to help ensure that people are at peace with themselves in different stages of their lives (Nida-Rümelin 2013: 230-231).*

What do these concepts of personality and education have to do with innovation? Any entrepreneurial activity and hence, any actions that target the implementation of ideas are of course intimately interwoven with business knowledge and skills. Thus, students in every management program must be confronted with the set of entrepreneurial knowledge and skills. Once again, entrepreneurial knowledge and skills are a fundamental aspect of business experience and success. However, we vehemently reject the belief that someone who understands balance sheets and key performance figures or who is otherwise economically well-grounded can automatically and successfully lead people or create a company solely based on this knowledge and ability. We likewise reject the idea that a manager or entrepreneur can have long-term success by relying on tricks thought up by someone who has worked in some places at some times. In our view, managers and entrepreneurs who have long-term success are characterized primarily by the fact that they have a comprehensive and deeply personal perspective on business and life, which they reflect on, internalize and put into practice.

3   ON THE IDEAL EDUCATION FOR NURTURING »CREATIVE PERSONALITY«

The primary requirement for developing and executing projects – in Schumpeter' sense when referring to corporate development – is people who respond to the unknown or the new by redesigning and implementing something known, or developing something completely new. Ensuring and expanding a company's lasting competitiveness is the responsibility of those who take on innovation projects in all areas of a company, not just employees in Research and Development departments.

As a business school, we see our educational mission as the formation and education of innovators. In our view, and with the concept of having and being a personality as described above in mind, innovators are distinguished by the fact that they have »creative personalities«. We believe that having a creative character or being a creative personality can only develop from the synergistic interaction of the following elements:

  - A qualifications profile characterized primarily by general
    knowledge, intercultural knowledge and expertise
  - A competence profile characterized primarily by a
    pronounced ability to make decisions and take action
  - A character that above all explores the world and seizes opportunities
  - An identity characterized primarily by self-
    confidence, maturity and self-determination
  - A set of virtues and values characterized primarily by reliability,
    prudence and awareness as well as trust, tolerance, sustainability
    (»consciousness of one's responsibility«), consistency and respect.

HAVING A CREATIVE PERSONALITY

| Entrepreneurial knowledge | Entrepreneurial competencies profile | Entrepreneurial temperament and entrepreneurial character | Entrepreneurial identity | Entrepreneurial virtues and values |

42 | Elements of a creative personality.

The manifestation of the synergistic interaction between the elements listed above is action that is judged by a community in terms of the value it brings. The consequence of this social process is that on the one hand, the individual and his actions experience a certain amount of appreciation from the community (prestige, charisma); on the other, this individual also gains influence over this community as a result of his actions (authority).

In this sense, the term »creative personality« can be understood in twofold yet complementary senses: 1. uniting all the above aspects means that someone has a creative personality; 2. professional and emotional appreciation of this person and his actions by others means that he is a creative personality.

3.1   KNOWLEDGE AND THE CREATIVE PERSONALITY

The basis for innovation is knowledge. For innovation, however, general knowledge, intercultural knowledge and professional expertise are necessary above all else.

43 │ Entrepreneurial knowledge.
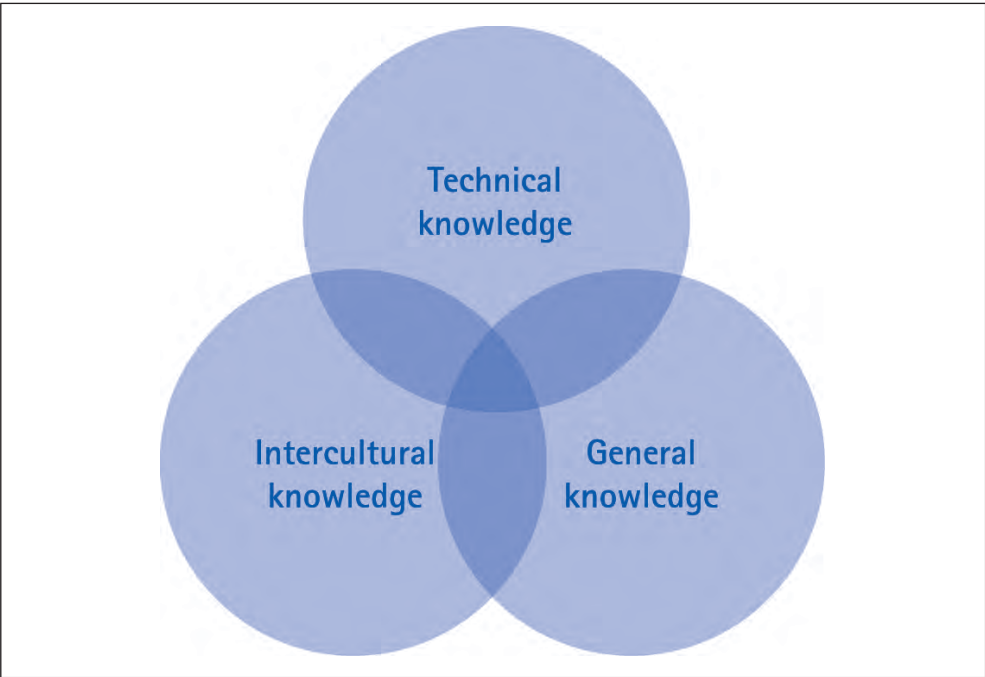
Broad general knowledge is of enormous importance, especially for innovation. Only this type of education enables the use of different approaches to a problem or the recognition of different effects of a decision/action etc. Without a multi-dimensional way of thinking, one cannot do justice to complex, i.e. real phenomena because one will not understand them in their entirety.

Today, innovations are usually the result of teamwork. In the course of globalization, the members of such teams are more and more frequently from different countries, sometimes with completely different cultures. In addition, these teams are often required to develop innovations that are exported increasingly to countries with cultures that may be very different from their own. Both cases require a special form of general knowledge, namely intercultural knowledge. This means that knowledge of the diversity and sometimes diametrically different nature of various cultures is of great importance for successful innovation. Intercultural knowledge also includes the possibility of interacting with people of other cultures, via language skills, knowledge of customs, etiquette etc.

To produce innovations, people must undoubtedly have a deep technical understanding of the object that they want to make reality. Expertise is considered as all the information acquired in one's personal contextual experience that can be matched with typical professional tasks and issues. These include (Cf. Pirntke 2010: 168):

- Knowledge of technical terms and specialized terminology (jargon)
- Knowledge of technical methods and procedures,
  equipment and tools and their proper use
- Knowledge of the topics and issues of one's profession
  (expertise, overview of the entire field)
- Knowledge of the standards and legal framework
  relevant to the subject area
- Knowledge of the handling of hazards and risks in one's profession,
  the precautions, protective measures and actions that must
  be taken and an awareness of responsibility and liability.

Because innovation is about much more than simply development, – i.e. it includes effective marketing – sound, up-to-date expertise in a narrower sense is inadequate. In the case of product innovation, pure technical knowledge is too little for successful innovation. It is not enough to know how to produce a new product; for success, expertise in the narrower sense must be supplemented by business management knowledge or lessons learned from management theory.

Entrepreneurial skills include all elements previously mentioned under the aspect

of »entrepreneurial knowledge«. In contrast to fully self-organized and developed entrepreneurial knowledge, entrepreneurial skills are subject to a certain degree of canonization. This means that in regard to »entrepreneurial knowledge«, the content and scope of this knowledge as well as the control of learning success is more or less up to the learner; on the other hand, the content and scope of knowledge related to »entrepreneurial qualifications« is specified by institutions, e.g. in the form of curricula and examination regulations.

3.2   COMPETENCE AND THE CREATIVE PERSONALITY

In order to innovate, people must have more than mere qualifications. A qualification (here: a diploma, completed apprenticeship, certificate or other) is proof that a person has demonstrated certain knowledge or skills in an arranged and thus artificial situation. Especially in the industrial age, such proof has been the key to work and to building a career.

> *In the industrial society of the past 200 years, standardized work has dominated. The characteristic, Fordist-Taylorist production and work regime shapes a cultural type of learning derived from an understanding of the division of labor that is the basis of assembly line work. [...] Division of the labor process into many small-scale modules and the allocation of individual modules to single individuals establishes a distinct learning culture. This is a learning culture of qualification in the sense that people must adapt to the required activities which they have qualified themselves for. (Qualification as adaptive achievement). [...] This means that learning is usually governed by guidelines. These guidelines mark a development path whose beginning is clear for individuals (and their environment) from the start and whose end result is more or less known. In this case, the idea is that an individual only qualifies himself once – namely during the transition from school to working life (training), and then fine-tunes these qualifications further in the specified framework. The qualifications become visible in separate, standardized »testing situations that must be completed position for position«. They reflect the most current knowledge (based on the input) and the skills that are currently taught. Just like mechanical performance parameters, both traits can be measured and evaluated; forgotten knowledge identified, refreshed and updated by training. Qualifications are »items on a quasi-mechanically required audit of actions; are items of knowledge and individual skills« (Borner 2007: 1).*

A qualification proves that a person could present the same knowledge and skills in a phenomenologically similar situation. The problem, however, is: 1. in view of the phenomenon of the shrinking of the present, a person's once secure learning and knowledge is expiring faster and faster. 2. in these situations, because one must face and react to the new – or even produce something completely new, qualifications, such as diplomas etc., are no longer adequate.[53]

Instead, the ability to innovate is intimately connected with the concept of »competence«.[54]

> *From qualifications to competence – this has been the credo of educational researchers for some years now. It is still the case that qualifications are required, but they are no longer the end of an education. Instead, they are a ticket for developing skills. What is so special about skills, which we also call competencies? One can only acquire competencies by oneself – in new, open problematic situations that must be creatively solved. One can almost describe competencies as the ability to react in a self-organized manner in uncertain, open situations without simply completing and check-marking a list of known solutions in a »skilled« manner, and without knowing the result in advance. (Erpenbeck, Sauter 2007b)*

We feel that creative personalities are characterized by their outstanding competencies, especially in regard to their ability to make decisions and take action. Indeed, it is precisely this ability that characterizes people who are the sine qua non, according to Schumpeter, who are the source of innovation and thus of organic and thus sustainable growth.

> *We come [to what...] can be described as the real fundamental phenomenon of economic development, to the nature of the entrepreneurial function and the behavior of the economic agents that they rest on. We call entrepreneurship the execution of new combinations*

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53 »Traditions« are suffering a similar fate to »qualifications«. The formulaic justification of acts, i.e. »we do it this way because it has always been done this way« is losing its meaning in a post-traditional social order.

54 In addition to the definition above, the term »competence« has yet another meaning: responsibility for something. One could say that qualifications lead to skills that lead to authority (for example, an MBA may be one possible formal qualification that results in a leadership position). Staudt and Kriegesmann (1999: 3) As a result, action is constituted from: 1. the ability to act (the cognitive basis), 2. the willingness to act (the motivational basis) and finally 3. competence as organizational legitimacy. The latter, i.e. the positioning of people within a business organization and the assignment of responsibilities is an essential feature of an organization or society that features a division of labor.

> *[...]. Entrepreneurs [i.e. people with a creative personality / who are creative personalities] are the economic agents whose function is implementing new combinations and who are thus the active element. (Schumpeter 1952: 109)*

Creative personalities are capable of developing solutions through self-organized action (adaptation to their environments). Moreover, they are also capable of bringing forth the new (change to their environments) in a self-organized manner. In short, creative personalities »develop new knowledge to solve new problems.« (Prahalad, Krishnan 2009: 288)[55]

3.3   TEMPERAMENT AND CHARACTER IN THE CREATIVE PERSONALITY

Temperament has its main origin in human instinct. Character is thus the specific disposition of these human instincts. It seems to us that the character of a creative individual is constituted above all by the drive to explore, i.e. the curiosity instinct and the aggression instinct.

The instinct to explore – in other words, the curiosity instinct – seems to be an essential condition for interest in innovation, because its outcome is pleasure and delight in making discoveries and transforming the unknown into the familiar.

> *[Curiosity drive:] Even higher animals are curious: dogs, cats, rats, crows, monkeys, etc. Humans are certainly the most curious »animals«. [...] It sounds paradoxical, but on closer inspection it is quite clear: Humans seek the new in order to gain security. What then is the purpose of exploring new countries? It lies in getting to know these countries, in making the unknown known, in gaining safety! Even by getting to know a new person, we increase our security. The unknown person becomes an acquaintance, someone who is calculable, even a confidant. Why does one want to solve a problem? So that it is no longer a problem. People transform the unknown into the familiar, the new into the trusted, the uncertain into the secure and safe. It is the*

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55   See the following recommendation from the IBM Global CEO Study 2010: »Be a role model for ground-breaking ideas. Practice and encourage experimentation at all levels of the company. Push to the top with revolutionary innovations that sets your company apart from the masses. Analyze and question what others do – detect technology and customer trends. Work out scenarios that help plan future responses to different circumstances.« (IBM 2010: 32)

new that stimulates curiosity – the purpose of curiosity is security. A striking feature of curiosity is – as the name implies – particularly strong appetency. We are constantly looking for new things, new problems, new people, new adventures. Certainly – the new and unknown is fraught with risk and uncertainty. But the effort is worth it. The larger the environment under exploration is, the more problems are solved; the more knowledge one has, the more new things become familiar and thus, the greater is the level of safety.

In a known environment, we operate with certainty, we know what we have to expect and we can turn our attention to something new. We see that curiosity is an instinct! The stimulus that triggers it is the new, the unknown, the insecure. If this stimulus does not exist, we look for it. We are »greedy« about finding the new, we exert ourselves to find it. When we have found it, we do everything it takes to make it familiar; we incorporate it into our security system; we transform uncertainty into certainty! The curiosity drive is actually a drive to acquire safety and certainty! We are richly rewarded for our efforts in searching for the new and transforming uncertainty into certainty. Everyone has experienced the pleasure connected with solving a problem or dealing with a threat – it ranges from being an eye-opener to great elation. […] The mountain climber experiences climbing itself – not just reaching the summit – as pleasurable. [...] [This] »holistic feeling« of complete absorption is known as »flow«. [...] The experience of flow is the pleasurable part of the safety drive! This makes it not only understandable that flow can occur in many different areas – work, leisure, sports and games, for example – but it also becomes clear that people try to increase the pleasure associated with this impulse by constantly looking for newer, more intense stimuli, newer, more challenging adventures and newer, greater challenges. This way of gaining pleasure is quite »natural«. It is associated with effort and can be increased through effort. (Cube 1998: 29 f.)

In our opinion, creative personality is demonstrated by people who want to turn possibility into reality, who leave their comfort zones and who face the new without being overwhelmed by fear so that they develop their creative powers. (Cf. Horx 2009, 301) It is precisely this entrepreneurial temperament that Schumpeter means when he describes the entrepreneur as follows:

The entrepreneur is made of a different stuff. Where others shrink from the unknown, he sets out to break new ground. The fact that he is constantly moving in uncertain, opaque situations does not make him shrink back. [...] His strong will and above-average energy prevents the entrepreneur from succumbing to the all too human love of convenience and dislike of the new. In the midst of everyday drudgery, he still creates time and space to transform his [innovative] plans [...] into reality, even if his environment considers him a dreamer [...]. (Schäfer 2008: 59-60)

In our model, a creative personality develops from the following social processes: first, the individual and his actions are assessed by a community. Then a positive evaluation from this community gives the agent influence over it, i.e. the community recognizes the individual's reputation, charisma and authority. Indeed, this process of educating the personality should be supplemented by a third, intrapsychic process: the individual recognized by the community by being granted prestige, charisma and authority must be internally ready to actualize his own personality by accepting the prestige, charisma and authority granted. In our opinion, to acquire personality, or charcter, a certain degree of aggressiveness is crucial, because this is nothing more than the »drive to win, the drive for power, rank and recognition.« (Cube 1998 12)

Aggression is usually viewed as something negative, as something harmful or even destructive. [...] Aggression is not only violence. The purpose of aggression is attaining victory over rivals, asserting one's claim to or conquering territory, or asserting oneself and climbing the ranks in an organization. This means that power, in particular performance, can lead to victory, to a better position, to prestige and to recognition. […]

We maintain that taking pleasure in aggressiveness is connected with the desire for victory, the desire to win an election, to be promoted, to be honored, to advance, to receive recognition of any kind – but also with violence and even murder. If recognition is based on socially recognized performance, however, this is not only a useful form of aggression, but also a human one. One could say that recognition of performance is the most human form of gratification for the aggressive drive. (Cube 1998: 25-28)

3.4   IDENTITY AND THE CREATIVE PERSONALITY

In our opinion, creative personality is demonstrated primarily by the following aspects:

- A person with a creative personality can withstand change without losing himself. Such a person has the potential to remain the same at heart despite all the storms of life; a person with an entrepreneurial identity thus possesses the ability to maintain a core of rules, norms, values, convictions and beliefs even if demands and expectations change fundamentally during the course of life. A creative person has a center of repose from where his actions come: »Even someone standing in the middle of a rotating disk has nothing to fear. But if one loses one's center while on this disk, one runs the risk of being flung off it.« (Prost 2010: 52)
- A creative person actively uses his innate talents and acquired knowledge and skills to shape the world. He doesn't simply act »passively on predetermined tracks or as a victim of circumstances [...], but even [sets] impulses and [acts] as the originator of his own actions and words.« (Prost 2010: 63). A creative person renders service both for his own benefit as well as for the interests of society and consciously assumes positions of responsibility in business, public life and in private. (Cf. Spoun, Wunderlich 2005: 293)[56]
- A creative person is articulate, can form an opinion himself and adjusts to different situations (social, cultural, economic, private). (Cf. Nida-Rümelin 2006: 36)

Furthermore, the identity of a creative personality is characterized thus (Cf. Roth 2011:291-293):

- A person with a creative personality is realistic, i.e. he is self-critical, estimates his own powers correctly and does not set too high nor too low targets.
- A person with a creative personality has learned to deal with stress and frustration as well as with his own excitement, and to keep a cool head.
- A person with a creative personality is motivated and goal-oriented, has thus learned to understand the ups and downs of life as a challenge and has developed the motivation and confidence in his own strengths to handle even large tasks.

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56 For the social role »employee in a company«, creative people are found mainly among those »with the ability, engagement, and aspiration to rise and succeed in more senior, more critical position[s].« (Corporate Leadership Council, 2005: 5)

- A person with a creative personality is able to deal
  with anger and rage, can rein in too great ambition and
  develop patience, tolerance and peacefulness.
- A person with a creative personality is empathetic and sociable,
  but at the same time able to avoid too much psychological
  dependence on being with others and can endure the
  transition between relationships and separations.
- A person with a creative personality recognizes the risks and
  dangers that arise from his actions or the actions of others.

3.5   VIRTUES, VALUES AND THE CREATIVE PERSONALITY

Creative personalities are considered to be those who are instrumental in the development of innovations; i.e. things that are new or improved. Therefore, creative personalities must not only acquire knowledge and develop skills, they must also (be able to) develop a coherent worldview and self-image for themselves, (be able to) set attainable goals based on their self-knowledge and personal values and (be able to) develop the strength and courage to achieve these goals.

In the context of innovation, we find the following virtues worthy of consideration:

- Reliability means the feeling that one is acting trustfully and
  truthfully, i.e. acting, judging and deciding in a truthful manner,
  both objectively and subjectively. This feeling is inescapably
  and unconditionally founded on a sense of freedom.
- Prudence means the feeling that one is acting, judging and making
  decisions in a prudent, careful and far-sighted manner. This feeling is
  likewise inescapably and unconditionally founded on a sense of freedom.
- Mindfulness means the feeling that one is acting, judging and making
  decisions either about objects or individuals with great care. This feeling is
  likewise inescapably and unconditionally founded on a sense of freedom.

In our view, creative people are further distinguished by the fact that they internalize and live what Immanuel Kant called the fundamental principle of ethics, the »categorical imperative« of morality:

- The feeling that one must act with wisdom, courage and
  prudence to effect the morally necessary and proper, the
  »good« and the »righteous«. This feeling is likewise inescapably
  and unconditionally founded on a sense of freedom.

- The feeling of never seeing or handling others nor oneself as a means but always as an end. This feeling is likewise inescapably and unconditionally founded on a sense of freedom.

Finally, in the context of innovation and entrepreneurial activity, we consider the following values worth considering: trust, tolerance, sustainability, consistency and respect. Trust is those »hypotheses about future behavior« (Simmel 1908/1992: 393), that »condition midway between knowledge and ignorance of [the actions of familiar] people« (ibid.); trust is the kind of faith in a person that becomes especially significant when the person one trusts must take action in a new or unprecedented situation.

Tolerance should be understood here in the sense of »[honoring] the otherness in the other« (Bauman 1991: 235). Tolerance is particularly sought in situations for which there is no template, no standard, no right or wrong. In such situations, people cannot act according to (generally) applicable rules and standards, but only in a self-organized manner in the context of deeply subjective ideas about what is desirable.

Sustainability should be understood as an effort to preserve and expand the social, environmental and economic prosperity of present and future generations. Given our rapidly and profoundly changing world, all these forms of wealth are ultimately directed by the innovative ability and activity of people; from the ongoing process by which new knowledge or knowledge never yet applied in a certain manner becomes social, ecological and/or economic reality.

Consequence means two things: 1. the unconditional desire for scientific knowledge to have business consequences; 2. the resulting awareness and anticipation that this transfer could have entrepreneurial, social and environmental impacts – and which ones.

Especially in multicultural teams, mutual trust and respect are essential for innovative thinking and action. Therefore, intercultural knowledge also includes the deep conviction that we must first know the cultural otherness that supposedly distinguishes us on the surface from one another. Second, we must above all be aware of the shared rights and responsibilities of people who live and/or work together, and orient our actions to these. Nobody likes to be cheated, lied to, exploited or treated without respect, no matter what culture he or she comes from; and every person on this planet wants honesty and sincerity, recognition and appreciation. Despite

all the cultural differences that superficially separate us, in the depths of our being there are many more that unite us.[57]

> *There is a commonality of the general human form of life that makes it possible to agree across all cultural boundaries. The bulk of this shared form of life is not culture-dependent. The cosmopolitan perspective, the idea that ultimately all people participate in a global community, is quite compatible with having respect for the particularities of the respective local culture. This cosmopolitan perspective does not rely on abstract principles of world citizenship, but on the similarities of human life across cultures. Each person shares many more similarities than differences with every other human on this planet. But these similarities cannot be determined through reason alone; they determine the human life form as such. (Nida-Rümelin 2013: 116)*

Why are such virtues and values so necessary for innovation? The new creates the responsibility to deal with the risks[58] that come with it, i.e. someone who creates something new must be able to anticipate and assess the potential (and often irreversible) intended and unintended consequences (and sometimes disasters!) of the decision to create this new thing.[59] How are we to decide, if there is no standardized patent solution or manual for this? Decisions for or against an action in such situations can be made only by people who are capable of grasping relationships not only analytically, but above all normatively, who can independently form an opinion and take responsibility for decisions.

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57 The concepts of virtues and values on the one hand as well as manners and behavior on the other are deeply connected. Thus, Adolph Freiherr von Knigge in his work »Über den Umgang mit Menschen« writes: »If the rules for dealing [with people] should not simply be regulated by conventional politeness or even dangerous policy, they must be founded on teaching the responsibilities that we owe all kinds of people, and that we can in turn can demand of them. – That is, a system whose pillars are morality and sophistication, must be the foundation.« (Knigge 1790. 10-11)

58 We speak of a risk, »if a decision can be made without which nothing would come to any harm.« (Luhmann 1991: 25)

59 Ulrich Beck, the »creator« of the term »risk society«, now speaks of a »world risk society« (Beck 2007), in which decision-makers must not only consider regional consequences but global ones as well – an inhumanly complex task!

3.6 CONCLUSION

Innovations are not anonymous operations. In order to develop and execute corporate projects in the sense of Schumpeter's concept of entrepreneurial development, it is crucial to pay particular attention to the key success factor for company development: those people who have a creative personality, i.e. those people who initiate, execute and complete the innovation process in the first place.

We refer to people as being/having creative personalities when
- Based on their broad, deep education and great rationality, they prudently and conscientiously think through the possible complex consequences of their decisions and actions;
- They understand the formation of and work on their own selves and the development of a deeply personal being as a life-long challenge and freedom;
- They have the knowledge, expertise and the strength as well as courage to formulate and achieve goals themselves in situations that have no templates, no standards and no pre-formulated right or wrong.

44 | Creative personalities in the innovation process.
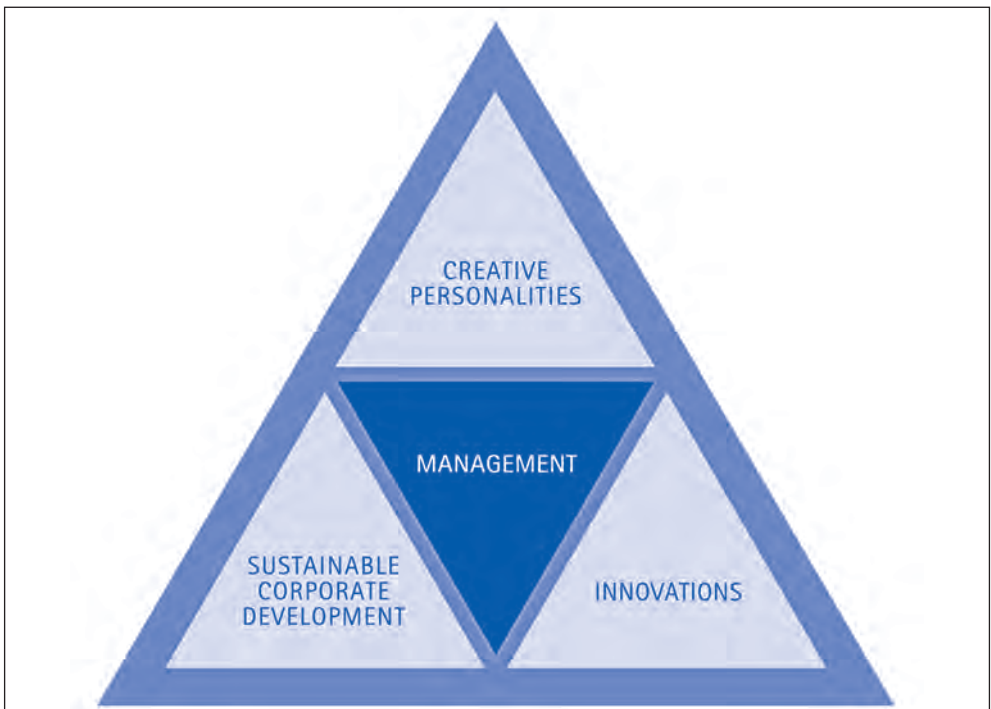
4   ON THE EDUCATION OF CREATIVE PERSONALITY

It is important to note that although the intention of education is to stimulate and convey knowledge to people, only the recipient of this education can put it into practice.

> *A rental apartment or even a marriage can be brokered. An »education«, however, can't! Just as hunger can't. Each person gets hungry on his own; in the same manner, each person learns on his own. Each person learns in his own manner and fashion, and learns precisely that which fits best into his neural pathways [i.e. the micro-structures in the brain]. It is important to remember that even a discussion of conveying an education – perhaps even of conveying values – completely misses the reality of learning. Nothing can be conveyed to a brain. They produce things themselves! Who has taught us to walk or talk? – No one but ourselves! (Spitzer 2006: 417)*

> *What determines the enthusiasm in which [people] use their brains is not what they already find or what we set before them, but only what they see as important for themselves; only what is really meaningful to them from their own subjective perspective. [...] That's why we cannot shape [people] according to our ideas and make them into what we want them to be. We can only invite, encourage and inspire them to evaluate the importance and meaning for themselves of what we think and what we hold to be important and significant. (Hüther 2011: 116)*

The logical conclusion of this is that the way to educate people is to establish the conditions in which they can and want to become creative personalities. With this in mind, this chapter outlines a model that describes our view of how the development of creative character, of creative personalities can be stimulated. An educational model, as we see it, is comprised of the following elements: 1. a theoretical basis, i.e. a philosophy of education, 2. a methodology that includes individual training methods and 3. a measurement method that evaluates the educational success of learners and thus the effectiveness of the entire educational model.

Before any further discussion, we want to mention the following: on the one hand, not all content can be appropriately and practically taught and learned based on this model. On the other, especially in regard to education, it is important to internalize the famous statement of C.G. Jung that every person is an exception to the rule. Mindful of both of these arguments, our concept cannot and does not make any claims to universality; it is explicitly not a universal method that is applicable always and for everyone. The choice of educational approach or its individual components must correspond to the content and goals of the field of study as well as the nature and needs of learners. The wide diversity of content and problems that are addressed – as well as a great respect for human individuality – requires conceptual plurality. However, we consider the concept presented here to be one that proves fruitful in the education and development of personality and creativity in individuals.

4.1   EDUCATIONAL PHILOSOPHY: MODERATE PRAGMATISM

Pragmatism as a philosophical concept focuses on action. Actions are the origin of all things and all knowledge (Schreier 1986: 21, 24 f.). The practical consequences and effects of an action (or more generally of an event) determine not only everything concrete in the lives of people, but also that which constitutes the meaning or truth of concepts, statements and opinions. In brief, practice is the foundation for everything. This is especially true for theories, because the value of all knowledge is measured by the benefit it has for the actions of people and the practice of life (Jank / Meyer 1994: 119 f). The main proponents of pragmatism are Charles Sanders Peirce, William James, Herbert Mead and John Dewey (Russel 1996: 398). For Peirce, the intersubjective became the center of philosophical interest; James devoted himself to the particular and Mead the speech gesture. Dewey, however, transferred the idea of pragmatism (and of psychological functionalism) to the educational process (Schreier 1986: 21).

Theories are the foundation of an instrumental character, i.e. one that is measured in terms of its usefulness to humans. Findings that do not satisfy the need to cope with life are considered irrelevant and unverifiable. Instead, the central philosophical and pedagogical category is experience. The credo of Dewey's educational philosophy is therefore: »An ounce of experience is better than a ton of theory simply because theory only has relevance when it can be applied to actual experience and is accessible and verifiable« (Dewey 1949/2000: 193).

4.2 LEARNING FROM, BY AND THROUGH EXPERIENCE

The term experience emphasizes the subjective element of the individual's struggle with the world as he specifically experiences it. The educational object encounters the subject not only as a purely mental conception or as symbolic content (i.e. text, image or sound recording, etc.); accordingly, the subject does not process the object merely as a passive consumer. Rather, the object literally gets as close to the subject as possible. The subject actually sees how he is confronted by the object in his own world. He responds to this and thus experiences the object through his own actions. Experiences thus arise as a result of the mutual back-and-forth between the world and humans. Learning from and through experience, therefore, means that people draw insights from these actual encounters and use them to expand their repertoires of thought and behavioral patterns.

> *Dealing with things is an essential part of our lives and accounts for our success as human beings. Dealing with things sharpens our minds, which to a certain extent grow with them. Things are a major subject of discussion in schools. This is good, because by naming things, we perceive them, and by using sentences, we relate them to each other. Thinking ultimately means seeing things in (new) relationships with each other. To think about things, however, one must first have grasped them. That is, they must be available in the mind. Here, mere talk is not enough. One only knows the meaning of sour after biting into a lemon. One only knows what a screwdriver is after using one. [...] We get to know the world by being in it and dealing with it. [...] Dealing with real-world things is essential for education (Spitzer 2010: 134-135).*

Conflict or new situations resulting from the interaction between man and the world can be solved through »projective experience«, that is by mental imagery and trial action in games (Knoll 1984: 664). In this context, we see projective experience during a game as particularly important. We are defining the term »game« based on the work of Hunzinga (1938/1991) and Eibl-Eibesfeldt (1986). A game in this sense consists of more or less self-chosen actions or activities that are carried out within certain fixed limits of time and space and following more or less voluntarily accepted but absolutely binding rules. The decision to take part in a game goes along with a sense of emotional destabilization, tension and enjoyment and an awareness of the game as being »other« than »ordinary life« (Cf. Hunzinga, 1939/2004: 37). An essential prerequisite for play is »that the motivational systems underlying serious behavior are not activated by strong physiological needs

(hunger) and/or external circumstances (fear), because otherwise it would not be possible for the animal or human to depend on actions that he would normally activate« (Eibl-Eibesfeldt 1986: 725). A further condition for play is that it takes place in a more or less protected environment; in a somewhat »relaxed environment« (Bally 1945).

From a functional perspective, games are used to practice skills. They also provide an opportunity to creatively test oneself and explore one's own personality so that the process of identity formation and developmental maturation can occur. Games also allow the appropriation and development of social behavior, especially in the form of »role-play« (cf. especially Goffman 1959/1991), where the subject is shown how to take on a role (the role of a manager, for instance) and to act it out in an unfolding socio-dramatic context. Finally, games provide insight into rules and normative schemata (Cf. Schäfers 1995: 335 f.). Even when the subject becomes totally absorbed in the game, it is still possible for him to reflect on himself as a player and on the game itself. Moreover, the term »game« also implies that it is possible in principle to leave the game at any time, even if this may cost great effort and sacrifice.

According to Dewey, education cannot simply be reduced to a »diet of predigested materials« (Dewey 1963: 58). Educational content is not only material that must be understood, but also something the subject uses to gain experience and grow (Cf. Walterscheid 1998: 11). In other words, on the one hand the subject grasps the concrete object or his projective confrontation with it. On the other, the subject works out new and improved methods of action by mentally linking concrete or projective actions and their consequences. Teaching in this sense largely means offering people the opportunity to have real and projective experiences. In this sense, the art of teaching consists mainly of inspiring and supporting experience. New problems must be sufficiently big that they stimulate thinking; at the same time they must be small enough that they do not overwhelm the learner (Dewey 2000: 209f).

Thought and behavioral patterns developed »real« or projective are deeply transferable, i.e. the skills and abilities acquired in learning to cope with situations become instruments for effectively understanding and handling subsequent situations. In other words, people add innovative thought and behavioral patterns to their repertoire through experience.

4.3   MODERATE PRAGMATISM

We describe our educational philosophy as »moderate pragmatism«. Moderate means that one should not confine oneself to offering opportunities to gain experience. Likewise, a curriculum should include a society's objectifiable knowledge (Knoll 1984: 665). Above all, juxtaposing these elements and giving them equal standing prevents learners simply from relying on the certainty of their own – sometimes distorted – memories in order to interpret a new situation.

In other words, a holistic education that results in a creative personality synthesizes the objectivist and subjectivist educational paradigms (c.f. e.g. Walterscheid 1998). The main thrust of the objectivist educational paradigm is the transfer of factual knowledge and technical concepts. When educating people to be creative, the acquisition of knowledge about entrepreneurship and management is very significant.

> *The substantive old-school educational concept is reflected by an orientation to business administration and management as the relevant disciplines. What we mean here is the mainstream expression of business administration that in the tradition of an ontology of »bound nature«, sees its subject matter as nomological. Business administration is expected to provide that canon of objective knowledge that can be used to successfully start and carry out a business (Walterscheid, 1998: 8).*

The subjectivist educational paradigm focuses primarily on the development of a person's abilities and traits. In short, from the objectivist point of view, the development of creativity means (among other things) ensuring that people understand the many and varied aspects of entrepreneurship and management. The subjectivist educational paradigm, on the other hand, is oriented to fostering creative individuals who think and act entrepreneurially, i.e. who translate their ideas into action – be it in their own companies or as employees (Walterscheid, 1998: 13).

The education of creative personality must thus focus equally on the acquisition of a deep understanding of the many and varied objective aspects of entrepreneurship and management on the one hand, and the development of the student's subjective strength on the other.

4.4   EDUCATIONAL METHODS: INQUIRY–BASED LEARNING, PROJECT–BASED LEARNING AND WORK–INTEGRATED LEARNING

Educational methods outline in general terms how teaching and learning, as considered abstractly in educational philosophy, could take place. In the development of creative personality, we find the following methods to be especially fruitful: inquiry-based learning, project-based learning and work-integrated learning.

4.4.1   LEARNING THROUGH RESEARCH

The term »inquiry-based learning« highlights two essential roles found in the university context, i.e. learning and research. Here, the distinction between these two, usually institutionally separate elements is abolished. The concept of »inquiry-based learning« implies that the focus of this synthesis is that the process of learning is designed differently, i.e. deeply imbued with the spirit and principles of science.

This penetration is expressed in two ways: 1. content should be generated and substantiated by and through research. 2. scientific orientation is understood as a general educational principle –not as a privilege of certain disciplines such as the natural sciences. The first aspect thus states that everything that is taught and learned should be based entirely on scientific evidence. Insofar as the first aspect presents problems from the perspective of the philosophy of science59, its meaning is self-explanatory: that the object of research and teaching should be based entirely on scientific evidence. The second aspect, however, needs further elaboration.

In principle, research- or inquiry-based learning, in this sense, means two things: 1. in regard to the object of learning, i.e. the learning material, research- or inquiry-based learning means that it is not presented by the teacher, but that it is researched and explored by the learners themselves. 2. in regard to the subject of learning, i.e. the student, inquiry-based learning means that they experience this research process as an »educational experience« (Dewey 1949/2000). In research- or inquiry-based learning, learning is not limited to absorbing and storing a stock of scientifically validated knowledge. Rather, underlying this type of learning is the conviction that learners are also scientists, i.e. that they can create (scientific) knowledge themselves and that this process enables deeper learning in multiple ways. A doctrine or curriculum in the sense of this understanding of lear-

ning means designing research as a framework for action (cf. Wildt 2006) in which students can work on subject matter using scientific methods and principles so as to understand it. In this sense, one could also describe inquiry-based learning as »learning by scientific doing« or as »learning by doing science«. According to John Dewey, such learning is constituted by:

1. The fact that the student is dealing with a real situation that is appropriate for the acquisition of experience; that a coherent activity is present that the student is interested in for its own sake;
2. The fact that this situation contains a real problem and thus stimulates thought;
3. The fact that the student possesses the knowledge and can make the necessary observations to handle the problem;
4. The fact that the student can reach possible solutions and is committed to developing them in an orderly manner;
5. The fact that the student has the ability and the opportunity to test his ideas through practical application, to clarify their meaning and to independently discover their value (Dewey 1949/2000: 218).

As a teaching method, research- or inquiry-based learning is not specific to any discipline; learners can approach any subject using the scientific method. The archaeologist learns his field by excavating; the biologist learns about biology through behavioral experiments; the budding manager understands the theories, methods and principles of management science by working on an authentic, relevant and practical entrepreneurial challenge. It is important to note that research requires openness, namely the openness to allow research and the openness to accept results that one may not have expected or wanted:

> *Experiments [...] allow us to leave habitual ways of thinking; they free us of normative constraints to enter new intellectual territory. A well-known metaphor tells us that in experiments, we ask questions of nature, and nature gives us an answer. [...] [These experiments] are able to clear up our misconceptions, but only under the condition that we are also willing to perceive and accept these answers (Küppers 2010: 173).*

Quite obviously, it is a tacit assumption that a creative person will produce innovative knowledge through inquiry-based learning. From the point of view of learning, it is initially irrelevant whether innovative and sustainable knowledge, or knowledge already found in textbooks is worked on first. And when through research someo-

ne comes up with previously discovered knowledge with no awareness that these findings are, in fact, already known, even if the research adds nothing new to the world, the process may well be spoken of as a creative act.

In summary, research- or inquiry-based learning is by no means a method of instruction used only for training scientists. Given the very plausible behavioral biology hypothesis of the curiosity instinct (incl. Cube 1998) – the innate desire that is responsible for understanding the new and carrying out new behavior – research-based learning is pleasurable in the truest sense: freedom from the celibacy that has developed from the traditional division of the teacher and student roles. The urge to satisfy one's curiosity through exploratory activities and playful exploration is a deeply human behavior and certainly the root of research (Cf. Eibl.-Eibesfeldt 1986: 720). »It is one of the most terrible punishments if someone robs us of these possibilities to satisfy our curiosity« (Eibl-Eibesfeldt 1986: 716). Among other things, inquiry-based learning can restore the pleasure of learning to us.

Furthermore, inquiry-based learning is »just not a luxury to be reserved only for science-related degrees or postgraduate studies, but a necessary element of complex qualifications« (Huber 1998: 6). Against the background of the consolidation, interlocking and multiplication of the teaching and examination requirements for the G8-Abitur [leaving certificate for the one-year-shorter German secondary schools (translator's note)] and the canonization, regimentation and reduction of science-based teaching and learning in bachelor programs, research-based learning seems to some extent to return Humboldt's time-honored yet always current principles to all educational institutions.[60]

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60 In school, it is sufficient to correctly apply the scientific method. To evaluate research-based learning in secondary schools, the thoroughness and logic with which the scientific method has been applied is the most important thing – not the accuracy of the scientific results. In universities, not only must methods be accurately applied, but the accuracy of the results is an equally important evaluation criterion.

4.4.2 PROJECT–BASED LEARNING

A project is a comprehensive, one-off, time-limited project for tackling novel, complex problems.[61] Learning, as we see it, involves understanding, absorbing and transforming the world. Project-based learning says accordingly that under specified conditions (time, people, etc.), learners can comprehend a relevant, authentic, real-world problem and work on it thoroughly and in a carefully planned, purposeful, interdisciplinary and independent manner by developing a proposed solution to the problem and putting it into action (Cf. Tippelt 1979). For both the process as well as the result of project-based work, no routine solutions are available. Furthermore, comprehension and execution, i.e. the learning and working process »triggered and organized by the project idea is just as important as the outcome of the action or the product that results at the end of the project« (Meyer 1987: 144). When dealing with business problems, it is important to remember that deviations from the characteristics of educational projects frequently occur. The objectives of the project group are clearly set by management or investors. Furthermore, control over the project organization and project work is not always complete. Finally, in project-based pedagogical teaching/learning processes, an aborted project may still lead to positive results through adequate analysis and reflection of the conditions and causes of the failure. The damage that occurs as a result of a market-based project is far more substantial (Cf. Jung 2002). Typical features of ideal project-based learning are thus: (based on Gudjons 1986: 58-68)

COMPLETENESS

In project-based learning, projects are characterized by the fact that the participants are responsible for completing all phases of a project. Completeness, therefore, means that the project organization as well as the strategic and operational project work are completed by the learner in self-organization and with the assumption that he takes complete responsibility. Learners thus obtain control over as well as the obligation for the meta-communication and content of the following action phases: informing, analyzing, planning, deciding, carrying out, monitoring, and finally, evaluating. By carrying out complete actions, learners are faced with complex and varying tasks such as diagnosing the current situation and condi-

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61 For teaching, the educational reformer William developed the project schema: Purposing, Planning, Executing and Judging (cf. Bossing, 1942 124). He also expanded the project concept through hands-on activities to include the self-organized solution of theoretical tasks (»serious purposive action«). A project is defined as »any acquisition of experience based on a purpose, any purposeful action in which the dominant intention is the internal driving process that 1. determines the goal of the action, 2. orders its process and 3. strengthens its motives (Bossing 1944: S. 117f.).

tions, discussing achievable goals, and designing and implementing appropriate solutions. The result of carrying out a complete sequence of actions is that the project participants learn to take responsibility. Finally, the complexity of full participation in projects provides opportunities for the development of meta-cognitive skills. Through appropriate self-reflection, the quality of activity-regulating thought and action can be critically reviewed (Cf. Stegmaier 2000: 77).

AUTHENTIC PROBLEMS

Indicative of project learning is the move away from purely science-oriented resources and reflections, i.e. the abandonment of purely academic discourses and case studies. The educational object with which the learner is confronted is an actual and possibly topical and acute problem from the learner's real life. An authentic problem provides the ability to »live, learn and work« (Meyer 1987: 144) together. In such a way, an authentic problem has the advantage of making work on and with its subject matter meaningful to learners.

EMPHASIS ON THE IMPORTANCE OF THE WORK AND LEARNING PROCESS

Project-based learning is characterized primarily by the fact that it »targets less the mere teaching of subject-specific knowledge than facilitating problem-oriented action« (Jung 1997: 22 f.). Nevertheless, project-based learning is not exclusively about knowing more afterwards. Rather, the point of it is that »learners become capable of solving complex tasks, which qualifies them to cope with life« (Kaiser 1999: 329). The problems stem from the learner's real world; they enable learners to gain actual experience with them; to be really confronted by them. Such concrete conflicts include moments of emotional destabilization, i.e. situations characterized by painful processes, of moving and/or irritating situations, of situations that lead to a new start and reorientation. Only during such moments of sometimes profound, indeed existential concern can educational processes be initialized, e.g. skills development and the interiorization of values. Project-based learning only provides a certain amount of uncertainty. This problem should belong to the canon of knowledge today, the canon we should give to future generations for them to live a good and fulfilling life. This also means that project-based learning participants develop their awareness of initiative and responsibility for their own learning processes; they learn the skills to independently develop areas that will be important later on in their lives.

UNDERSTANDING AND WORKING ON A PROBLEM

Knowledge acquisition and knowledge transfer are parallelized in project-based learning. By the effective transfer of knowledge to a problem, knowledge in the true sense becomes concrete, able to be grasped, and purposive. The subject matter does not remain merely theoretical and abstract information that could sometime be relevant in the future.

> *The path from novice to professional is a long, rugged and sometimes lonely path to be overcome, although the formal milestones [for example] for teacher education after high school are clear [the following refers to the situation in Germany – translator's note]: decision for the teaching profession and subject combination, first two years of study (BA), second two years of study (MA), 1st State examination, period as trainee, 2nd State examination, early period of job, lifelong profession. Within this formal skeleton – science – practice – practical experience – actual practice – it is up to students themselves to obtain and acquire knowledge from the inventory that exists in the various university disciplines. This knowledge allows them to move between the different reference systems of science and educational practice.*
> *But as to when the movement or hoped-for mobility from theory to practice comes – if ever – still remains an open question. In teacher education, which is constructed according to phases, the only thing that is known is when formal training is over and professional life begins. Only then does the stock of scientific knowledge that has been (somehow) acquired connect with the largely self-taught practical knowledge in the teacher's consciousness. This seemingly linear path from knowledge to action can be traced back to the idea of a simple transformation mechanism, which presumes that theoretical knowledge is automatically transferred in vocational training as practical knowledge. Even if this automatic transfer is not understood in technical terms, it still exhibits some sort of rationality (Tailor, 70 f.).*

To keep knowledge on hand because it will be tested at some point is still the usual and often quite necessary way we learn today. This method, however, is not one that appears to be particularly motivating, and it is also not the one preferred by the nature of our memory. Content in our memory that is never or hardly ever used is subject to the fate of being forgotten; to the decay of the associated neural structures. In contrast, the content learned by students involved in projects is significant in the here-and-now, and through its transfer, it is stored in the memory as personal experience.

WELL–PLANNED LEARNING PROCESS

Learning is characterized by structure on the one hand and great freedom as to how one wants to learn on the other. Thus, it appears useful in the run-up to actual project work, for example, for learners to discuss how to best organize the project work (key word: project management). How this project will ultimately be organized is left to the learner. It also makes sense for the phases of knowledge acquisition and knowledge transfer to be systematically coordinated with each other, both in terms of content and organization. How the concrete knowledge transfer and thus the depth of knowledge acquisition takes place is the responsibility of the learner.

INTERDISCIPLINARY APPROACH

Without a multi-dimensional and interdisciplinary way of thinking, one cannot do justice to complex, real phenomena; these cannot be understand in their entirety.

> *Reality does not stop at the boundaries between disciplines. Interdisciplinary opening instead of interdisciplinary rejection, open interpretation instead of limited observation – this is not only productive but essential to attain knowledge as well as insight. By expanding one's own perspective and considering other observations, something like a broad understanding can develop from deep knowledge (Mergenthaler, 2008: 17).*

INDEPENDENT LEARNING

One reason why project-based learning seems to be particularly worthwhile in educating individuals to be creative has to do with motivational and emotional moments. First of all, it seems certain that the learner's autonomy is promoted when he is involved in the selection of content, or at least in the methods of problem solving – and autonomy seems to be a property that is closely connected with the term »entrepreneur«. The feeling or development of self-employment is thereby enhanced by learning methods that enable independent discovery and problem solving. With this more-or-less large amount of independence, the learning process itself as well as the content learned are experienced as meaningful. Meaningfulness in turn is important for motivation, i.e. the desire to make an effort and the willingness to perform. (Cf. Bildungsportal NRW, keywords: Projekt/ Projektunterricht) (no English translation of this web page - translator's note)

OPENNESS TO THE SEARCH FOR SOLUTIONS

In our view, one of the main educational goals is to develop competencies, i.e. to develop and sharpen one's skills and to orient oneself and be able to act in a self-organized manner in situations that are new and unclear, complex and dynamic. The general significance of this ability arises from the fact that such situations today are more and more common due to global economic, ecological and socio-cultural complexity as well as dynamic and unpredictable changes (cf. Heyse 2010: 55; IBM 2010a and b). Especially in regard to the formation of creativity, competence is the basis of the ability to innovate. 1. Innovations are responses to new situations or ones that do not exist in a certain way. So innovations are necessary adaptations to changes of previously existing situations. 2. Innovations always have the character of being different in some manner, either in terms of being radically different or of having been improved from the ground up. So innovations serve to change things that have been previously known. It is no longer enough to have knowledge in one's head or to regurgitate it on a test; the point now is to transfer knowledge – to create something new and real with this knowledge. Innovation is more a matter of developing new knowledge or combining existing knowledge in new ways to solve new or not yet identified problems. For this reason, teaching with the intent of finding a general approach to a single correct solution would therefore be an anachronism and would also stifle to a large extent the development of the learner's creative potential.

4.4.3   WORK–INTEGRATED LEARNING

The term »work-integrated learning« implies three things: first, it expresses the fact that the place of learning coincides with the place where the work is being done. The term »integrated« implies, secondly, that this place is not the only place of learning but is, thirdly, systematically linked to one or several others. In short, cooperative learning or dual education means the systematic integration of knowledge acquisition and transfer through systematic cooperation between the two »teachers«: the educational institution and the business. Duality in this context means not only quantitatively more practice, but qualitatively different learning. There are two main aspects of this »different learning«:

1. Dual education means firstly that positive, i.e. technical knowledge about work-related content, processes, methods, etc. is acquired. Dual education means secondly that the learner is enculturated into a »community of practice« in which thinking styles, know-how, beliefs and ethical standards are acquired (Collins, Brown, Newman, 1989; Lave, Wenge 1991).

2. Dual education is not limited to the acquisition of knowledge. For the learner, dual education instead provides an immediate possibility and the responsibility for knowledge transfer in an authentic situation that is as real and complex as it is open and dynamic.
Dual education means in short that learners must leave their protected space, i.e. their seminars, exercises and case studies. Although dual education provides learners with a framework – usually through contracts, commitments, etc. – in which they may act more or less safely and can also make mistakes, the opportunity for existential destabilization and thus the possibility for the profound development of all elements of their personality (knowledge, competence, temperament, identity, values and virtues) nevertheless appears to be much greater in comparison to seminars, exercises and case studies.

4.5 EVALUATION: THE MEASUREMENT OF EDUCATIONAL SUCCESS

In principle, educational success is measured based on the same principles used to measure personal potential. In any education that can be called holistic, two complementary questions arise: 1. What do I know, what can I know, who am I, and what do I want? 2. Who and what do others see in me? Educational success is measured partly by considering the past and the present. Insofar as the subject has set himself or others an educational goal, e.g. in the form of learning objectives or educational ideals, educational success is measured additionally by comparing the target situation to the actual one. In summary, the following issues result when measuring educational success: what were the responses of the subject to questions 1 and 2 before an educational process and what are they after its completion?

In many educational processes, restrictions on the transfer of knowledge can still be observed, with the resulting focus on the development of the ingredient of »knowledge«. On the other hand, in many places, testing knowledge is the sole method of checking whether and how much an educational process has caused a positive change in the learner. This form of education as well as of the measurement of educational achievement still has its place. In our estimation, education must be oriented to shaping all the elements that constitute an individual's personality – one of the elements of which is »knowledge«. But by designing these elements, education should also put people in a position to carry out actions that make them creative individuals in the eyes of others. One act that may trigger appreciation in others could well consist of being particularly good in tests of knowledge.

But we still note that knowledge is only one of the elements that should be deve-
loped through education; and tested knowledge is only one proof that the learner
has further developed his personality in the area of knowledge. We are also of the
opinion that the appreciation one gets from others by passing an exam does not
last particularly long. Sustained appreciation is experienced by individuals who-
se actions contribute lasting benefit to a community; innovations of all kinds are
among the things that create such benefit. Such action is in turn the result of
the synergistic interaction of a person's entire complement of mental and spiritual
components. In short, this means that if education is to develop human beings
in their entirety, then measuring educational achievement must be methodically
designed to make these holistic developments visible, and if possible, objectifiable.

We believe that such measurement consists of three complementary methods
based on the two complementary questions presented at the beginning of this
chapter:

- – Classical queries of knowledge: what do I know?
- – Integration of measurement into the learner's actions: what can I do?
- – The possibility for self-reflection as well as how others see one: who am
  I, what do I want and what do others see in me? What relationship do I
  have with myself and with others? What do others consider me to be?

Knowledge can be tested in written, oral or practical form etc... These practices
– as old-fashioned as they may seem – have lost none of their significance. How-
ever, they should not be confined to having students memorize material. Rather,
they should verify that students have fully understood the learning material, i.e. its
content, context and relevance.

In a sense, actions are the manifestation of the synergistic interaction of having
personality and being a personality. Accordingly, holistic measurement of educa-
tional success should be concerned primarily with the actions of the individual.
Integration of measurement in the entire process means that the measurement of
educational success should include all phases of an activity: informing, analyzing,
planning, deciding, carrying out, monitoring, and finally, evaluating. In this practice,
action is the main priority. In regard to self-reflection and how others see one, the
primary consideration is on the individual components that constitute the model
of »having personality« and »being a personality«. For one, this is a matter of
addressing the conditions that precede the action; for another, it is a matter of the
social consequences that follow. Even though these two aspects are intimately
connected with the action, they in principle only reveal themselves in it or as a

result of it. Specifically, all mental and spiritual components (knowledge, competencies, temperament, identity, values and virtues) and the appreciation received from others (which results in prestige, charisma and authority) must be fully and thoroughly reflected on. Thoroughly means both that the process should include self-reflection as well as external assessment, and that the learner should also reflect on whether he can achieve the defined learning objectives or educational ideals – and wants to.

4.6   CONCLUSION

Pragmatism as an educational philosophy essentially posits that learning is best achieved through experience. Complementary to this subjective confrontation with the world, the learner should deal with objectified content. Moderate pragmatism in our sense can be summarized as:

- A synthesis between theory and practice, between
  »gaining knowledge« and »gaining experience«
- An intertwining of cognitive learning with emotional
  and social components and thus,
- A narrowing of the gap between school and life, between
  the world of learning and the real world.

Especially for the education of creative personalities, moderate pragmatism means both the acquisition of knowledge and development of the awareness and accountability needed for an entrepreneurial existence (Panoke 2003: 27). The two methods – inquiry- or research-based learning and project-based learning arise from a common tradition: learning through self-knowledge. This conceptual approach was known in ancient Greece; the Socratic method testifies literally to these origins. Common to both methods is that the learner, his own thoughts, self-motivated actions and the intrinsic development of his overall personality are prioritized. The focus of research-based learning is learning to thoroughly develop a good idea and substantiate it. The focus of project-based learning is more concerned with the ability to develop thoughts and implement them fully.

For the formation of a creative personality, we feel that the simultaneous application of research-based and project-based learning are very effective for developing the ability to create innovations. If innovations represent the essentially new and the substantially better, then to create them, people must head out and give the world something no one has previously thought up or made.

These two methods should be combined with work-integrated learning. The principle of this method is to systematically connect two places of learning with each other (Cf. Tippelt, Empire Claasen and Schmidt, Tippelt 2005). In an academic education, in order to become a chemist these places would be university classes and the laboratory. Although the latter offers the budding scientist a more or less protected place for (self-) experimentation and transfer, the laboratory is still grounded in reality, i.e. experiments don't only theoretically explode, but »for real«. In the formation of creative personality, companies are the places of learning that are analogous to such laboratories. Although the learner is provided with a framework – usually through contracts, commitments, etc. – in which he may act more or less safely and can also make mistakes, real conditions nevertheless prevail here. These can bring the learner real success – but also a real »bloody nose«.

On the one hand, such integration overcomes the »fragmentation of knowledge« and enables the learner to create connections in his real world (Negt 1997: 89). On the other, work-integrated learning offers the opportunity for comprehensive and profound development of the personality.

5 ACHIEVING A CREATIVE PERSONALITY THROUGH STUDY

The previous chapters have defined an abstract model for forming a creative personality. In the following and final chapters, this model will be described in more concrete terms based on how this is done at the School of International Business and Entrepreneurship (SIBE) and the International Business & Law School of the Steinbeis University Berlin (SUB).

In 1998, the Steinbeis University Berlin (SUB) was established as a state-approved, private university under the umbrella of the Steinbeis Foundation. In terms of the number of enrolled students, it is now the largest private university in Germany. Since 2003, the SUB has had the right to confer doctoral degrees.

The Steinbeis University is a transfer enterprise in the Steinbeis Foundation Network. The School of International Business and Entrepreneurship (SIBE), on the other hand, is a transfer enterprise of the Steinbeis University Berlin and as such, organized as a separate entity. In short, this means that SIBE is an economically

and legally independent, decentralized unit in the Steinbeis University Network. With currently over 1,000 students in Masters' programs (as of August 2013), the School of International Business and Entrepreneurship (SIBE) of the Steinbeis University Berlin is one of Germany's largest private postgraduate business schools. Since 1994, over 2,000 graduates have successfully completed SIBE Masters' programs. Over 350 companies have cooperated with SIBE since then. The SIBE curriculum focuses on postgraduate courses in management and law. Both »open enrollment« as well as corporate programs are offered. SIBE offers these management and law programs in Germany as well as in cooperation with renowned universities in other countries (Brazil, China, India, Poland, Switzerland and the USA). The core competencies of SIBE are teaching and research. In addition, SIBE provides companies with comprehensive consulting and support services in the areas of recruitment, personnel selection and employee retention. Applicants to SIBE programs are intensively and individually counseled and connected with companies and organizations as part of our dual academic programs. In addition, SIBE offers the opportunity to obtain scientifically based competence development and measurement.

5.1   THE »TALENT GROWTH PRINCIPLE«

The purpose of the Steinbeis Foundation and all of its various components is the transfer of knowledge and technology. This purpose is reflected in the total educational offers of the SUB. Essentially, knowledge and technology transfer occurs because all certified courses, Bachelor's and Master's programs as well as doctorates are organized according to the »Talent Growth Principle«. Because of the qualitative and quantitative importance of degree programs as a core competence of universities, the following example will illustrate the »Talent Growth Curriculum« (TGC).[62]

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62 SUB's educational portfolio ranges from certificate courses to Bachelor's and Master's programs with state-recognized qualifications all the way to the attainment of a doctoral degree based on the Talent Growth Concept.

5.1.1   THE SIBE TALENT GROWTH CURRICULUM

The Talent Growth Curriculum (TGC) is described as follows in the framework study regulations:

1. All SUB courses are based on the transfer-oriented Talent Growth Curriculum (TGC) concept, which is the logical continuation of the principle of dual education. Transfer-oriented projects in businesses or other organizations are an integral part of the program, in which practice-based application-oriented teaching is supplemented by the independent solution of technical or business problems.

2. Undergraduate studies are designed to provide students with the necessary technical foundations, methods, and knowledge in a practical manner. Postgraduate studies are intended to supplement and/or expand the students' previously acquired qualifications, preparing them for interdisciplinary activities in international environments in a future-oriented, practical manner. The necessary knowledge, skills and methods are taught so that students become capable of working interdisciplinarily and scientifically to solve problems, performing scientific and economic actions responsibly and exercising appropriate leadership tasks under the democratic and social rule of law.

3. The program is characterized by practical teaching, transfer-oriented project work and the necessary counseling. The entire network of the Steinbeis Foundation is available to support knowledge- and technology- transfer. (SHB RSO: §2)

While in traditional higher education two protagonists act together – the university and the student – the Talent Growth Curriculum requires the interaction of three protagonists:[63] the university, the student and the company or organization. The focus of all SIBE programs is a project that each student works on and implements during his studies in cooperation with a company or organization: »The prerequisite for study is [...] a [...] project completed by students in companies or other organizations[64].« (SUB RSO: § 3.5)

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63 Accordingly, three contracts must generally be concluded before a program can begin: between the Steinbeis University and the sponsoring company (program agreement), the Steinbeis University and the student (learning agreement) and the sponsoring company with the student (employment / internship contract).

64 Non-profit organization, public administration and the like.

In practical terms, this means that all SIBE students are employed by a company during their entire course of study. »The curriculum requires at the least an internship in a company or other organization during the entire duration of the program.« (SUB RSO: § 3.4) The sponsoring enterprise usually pays the students a salary and, as a rule, the costs of the program. The student defines a project for the sponsoring employer and works continuously on it during the entire program (SUB RSO: § 4.3). The focus of these projects is as varied as are the challenges faced by the companies: innovative growth strategies, cost optimization, restructuring, new command and control systems, the development of new target groups or products, the optimization of business processes and organizational structures, etc. The students document all project work in a so-called Talent Curriculum Paper as well as in the final thesis. Scientific reflection and written elaboration of the solution as well as active handling of a company-relevant project definition are the focus of the credits that must be provided during the program.[65] In SIBE courses, students develop their projects at the beginning of their programs in direct cooperation with companies, and then implement them on-site. They thus apply what they have learned in the theory phases of their program to their work in their sponsoring companies. Ideally, half of the TGC consists of theory; the other half consists of the project work. Seminars take up 50 percent of the theory phase; self-study takes up the remaining 50 percent. Direct project work takes up 50 percent of the project part of the program; project documentation takes up the remaining 50 percent

TALENT GROWTH CURRICULUM (TGC)
(100%)

THEORY (50%)		REAL WORLD PROJECT (50%)	
SELF STUDIES (25%)	SEMINARS (25%)	PROJECT WORK (25%)	PROJECT DOCUMENTATION (25%)
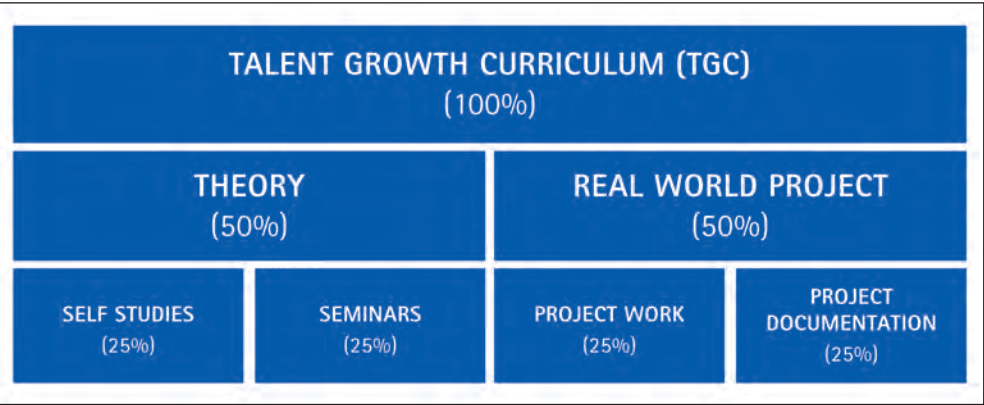
45 | Ideal course of the TGC.

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65   Types of proof-of-performance: Written exams, oral exams, presentations, lectures, case studies, written papers (studies, transfer, Talent Curriculum Papers, transfer documentation and reports, theses), project work, final exam (SUB RPO §3.1).

5.1.2   THE DUALITY PRINCIPLE IN SIBE'S TGC

As previously touched upon in the discussion of the framework study regulations, the Talent Growth Curriculum (TGC) is based on the traditional dual education system in Germany. It should be emphasized in this context that the principle of dual education has been expanded at SUB to extend beyond the Bachelor area, i.e. beyond the undergraduate programs, and that Master's as well as doctoral programs are organized according to this principle.

While in vocational education, the term »dual« is very precisely defined, »dual« in the tertiary system has come to be a collective term that refers to highly diverse educational concepts.

The analysis of the federal-state conference »Perspectives for dual education in the tertiary sector« sees dual degree programs characterized above all by: (Cf. for the following BLK 2003: 11f.)

- The workplace as a systematic element in addition to
  the university (or vocational college or academy)
- The workplace as the place where work processes are learned
- Contracts that bind students and companies
  (employment / training contract)
- A cooperation agreement (contract) between the company and
  the university or vocational education institute. At the very
  least, this agreement stipulates the arrangements regarding
  the coordination of the learning phases in the company or
  university as well as admission to the program or university.
- In addition to these formal elements, it is above all the aspect of
  duality[66] that completely captures the concept and idea of the dual
  degree, i.e. (Cf. in the following Konegen-Grenier, Werner 2001: 9):
- The educational or professional experience in a company is
  systematically and tightly linked, both formally as well as in

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66   In the context of duality, these educational forms must be differentiated from dual degree programs (cf. in the following Weber, Merx 2005: 20f.) as follows: 1. In-study programs in which students are regularly employed and simultaneously study in a more-or-less detached manner both formally as well as in terms of content. The program tends to be the students' business. (In this model, companies sometimes make a specific contribution that is conducive to the program. This could include exemption from work for phases of classroom learning or the provision of company equipment, for example.) 2. Completed vocational training prior to the start of university study. 3. Professional activity prior to the start of studies. 4. Practical phases – especially trainee programs – after the program. 5. Practical vocational semesters 6. (Compulsory) practical training and internships.

terms of the curriculum, with undergraduate university studies,
i.e. theory and practice are systematically interwoven
−   Companies and universities cooperate as educational
partners to jointly support students.

SIBE's Talent Growth Curriculum (TGC) is a special form of work integrating academic programs. During the program, students implement one or more innovative real case projects at a company. Through the intensive dedication with these challenging – because innovative and open-ended – case projects, the students create knowledge and develop their talents. The real case project implementation, knowledge generation as well as talent development are integrated into the SIBE program tightly – formally as well as in regard to content.

During their entire course of study at SIBE, students can rely on the expertise of and consultation with subject lecturers and real case project coaches. In the companies, where the students complete their real case projects, they also have the support of a business mentor. Half of the TGC consists of theory; the other half consists of the real case project. Half of the theory is covered by seminars; students complete the other half in self-study. The real case project is divided in the direct real case project work at the company and the real case project documentation presented as academic study papers. This model integrates work and studies and enables participants to be students and working professionals at the same time.

During the program and until their last exam, the following process of knowledge acquisition, knowledge application and documentation takes place: First, students must acquaint themselves with their field before attendance at classroom events; the university supports them in this self- study period with pre-reading material, web-based training courses etc. This knowledge is subsequently deepened in seminars, additional presence-based events, learning tandems and groups as well as in so-called »application papers«. After this, students concretely apply their knowledge to their specific working situations. They must do this independently and in situations that are open and uncertain. This framework systematically promotes and makes demands on the development of students' talents. The knowledge application itself as well as the reflection that takes place before, during and after it, are documented in so-called »Real Case Papers« that form a major part of the exam results.

5.1.3 THE »ACTION LEARNING« METHOD AS FOUND IN THE SIBE TGC

Program and/or business projects are possible choices for specialization within the degree programs. They ensure the consistent pursuit and promotion of students' individual interests and objectives throughout the entire program. Above all, such projects are the instruments for integrating transfer between theory and practice. Through them, students transfer the general and scientifically-based knowledge they acquire into actions in a specific business environment. This active momentum of transfer and the accompanying and/or subsequent reflection is what develops their capabilities.

The TGC is comprised of the following key elements:

Alternation between theory and practice phases

Students progress through several phases during project implementation

TGC

Systematic transfer of learned knowledge to the concrete project in the company

Systematic linkage of personal development and the entrepreneurially relevant tasks
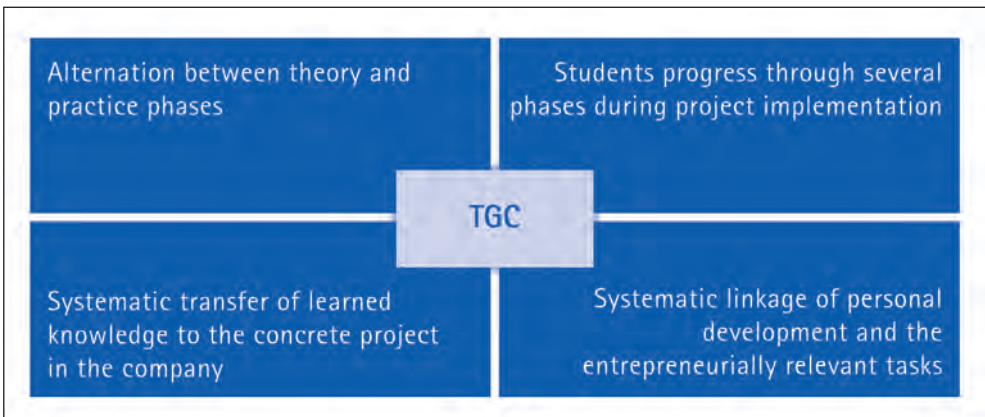
46 | Core elements of the TGC.

The SIBE curriculum and the project phases in the company are closely linked. »In addition to permanent work on a continually supervised, specification-based project, students participate in intensive SIBE module units. In these modules, fundamental and current scientific knowledge is »transferred« in practice-relevant form« (SUB RSO: §4.4). This enables the transfer of direct knowledge, and thus practical learning, on an individual basis. In other words, during the students' project work, scientific theories and methods learned in seminars are transferred to entrepreneurial practice. What students have learned becomes concrete business reality.

In this sense, the SIBE TGC is a specific expression of so-called »Action Learning«, which is in turn a special expression of work-integrated learning.

> *Action Learning is a real-time learning experience in which organiza-*
> *tion-based projects are the principal learning tool and where learning*
> *is grounded in real organizational issues. Action Learning has two*
> *important purposes: to meet organizational need and to develop indi-*
> *viduals and groups (Rothwell 1999: 5).*
> *Action Learning is a process which brings people together to find solu-*
> *tions to problems and, in doing so, develops both the individuals and*
> *the organization (Inglis 3).*

In the original version by Revans (1998: 4), Action Learning is supplemented and clarified by the following so-called »Learning Equation«:

$$[A]L = P + Q$$

[A]L: Action Learning

P: Programmed Knowledge

Q: Questioning Insight

47 | The »Action Learning« equation (Revans 1998).

In this equation, »[A]L« stands for [Action] Learning, i.e. the term that needs to be determined. »P« stands for »Programmed Knowledge«, i.e. Theory – and Expert Knowledge. The starting point of Action Learning is the assumption that the learner is facing something unknown or new, for which there is as yet no ready-made solution. Just as it is valuable, useful and wise to learn from the mistakes of others – so it is important, correct and wise to realize that established knowledge is not sufficient to deal with an unknown or new situation. Therefore, the factor »Q«, for »Questioning Insight« – must be given primacy in Action Learning. The »Q« factor involves the realization of the necessity for and process of creating new knowledge:

> *[…] the primacy of questioning insight over programmed knowledge, individuals / teams preferably (but not always) assigned to solve problems with which they have little or no familiarity (Dilworth, Willis 2003: 15).*

Once again, the factors »P«, i.e. existing knowledge, as well as »Q«, the appeal to create new knowledge, are both equally essential for Action Learning. The following is also applicable:

> *[...] Q remains the essence of true Action Learning (Revans, 1989: 102).*
> *[…] the operational starting point must be Q. It is Q that expresses the realization that the solution to the problem is unknown, or the problem would have been solved already (Dilworth, Willis 2003: 17).*
> *[…] realization that asking questions is the key to beginning to think, to doing different things, and to doing things differently and learning (Weinstein 1999: 178). […] questions can move you in a direction that you did not think about because you were in that box and you were not thinking (O'Neil, Marsick 2007: 142-143).*

In the SIBE TGC, the above learning equation »$L = P + Q$« is supplemented by two further letters. Because the TGC not only recommends but also implements action, the factor »I«, i.e. »implementation« is also added (see Inglis 1994).

On the other hand, the equation is also supplemented by the factor »R«, which means »reflection« (cf. Latif, Baloch 2010: 9). In the SIBE TGC, implementation means that the synthesis of established and newly created knowledge is directly implemented in the project. In the TGC, reflection means that the entire learning process – from learning in the strict sense to transfer and implementation of knowledge – is reflected on and documented in study papers. The TGC's complete Action Learning Equation is therefore:

$$TGC = P + Q + I + R$$

TGC: Talent Growth Curriculum

P: Programmed Knowledge

Q: Questioning Insight

I: Implementation

R: Reflection
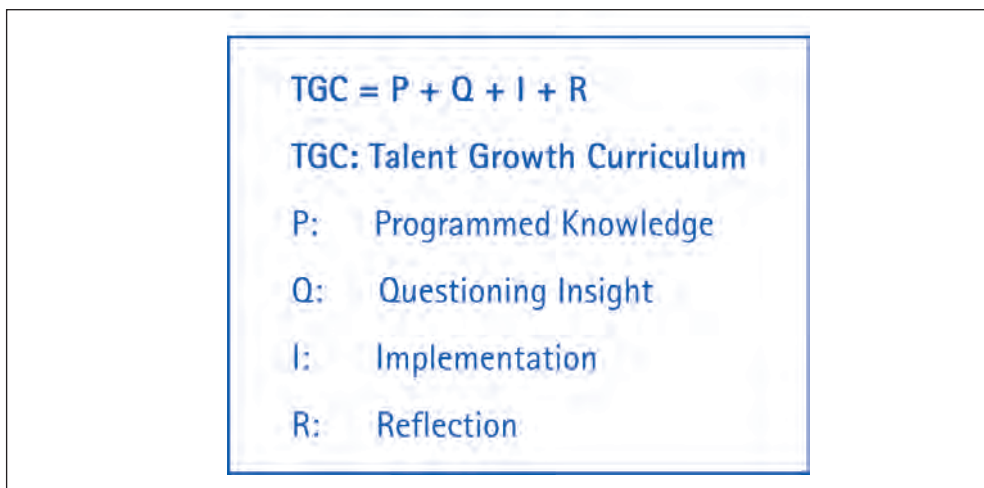
48 | The Action Learning equation in the TGC.

5.1.4   METHODS OF INQUIRY–BASED LEARNING AS FOUND IN THE SIBE TGC

The method described above of inquiry-based learning, »learning by doing«, finds its primary expression in the SIBE TGC in the »strategic triangle« of business and project development. According to this concept, the main elements of business and project development are as follows (Faix 2008; Faix, Buchwald, Wetzler 1994; Rasner, Füser, Faix 1999; Faix, Rasner Schuch, 1996):

- The current situation, i.e. of the company or project
- The conditions under which the company operates and under which the project will be carried out
- The target situation, i.e. the desired goal of the company or project that is to be attained in the future
- Considering the given framework, the path from the company or project's current situation to its desired condition. This path is the strategy for the company or project.
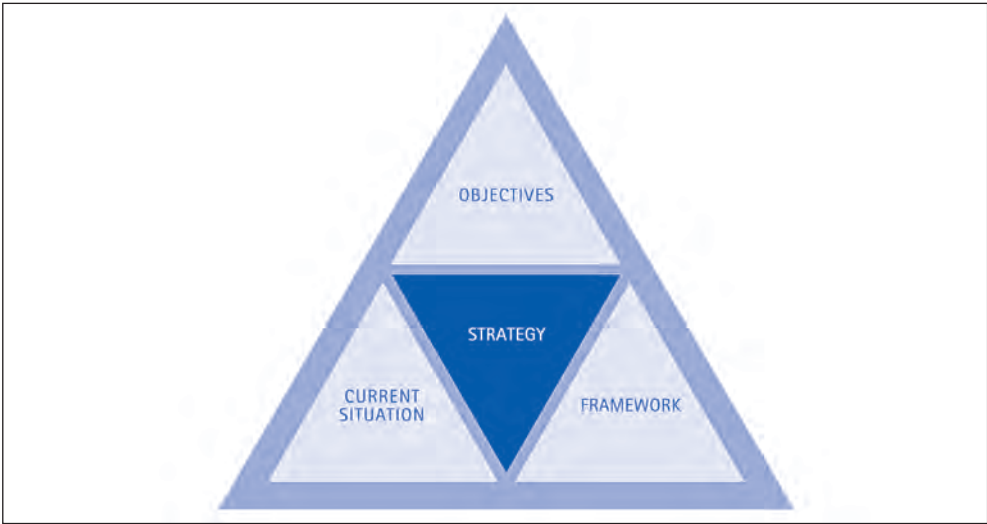
49 | The strategic triangle of business and project development (Faix et al. 2008).

Eight steps are then derived from these elements of the development process of a company or project.
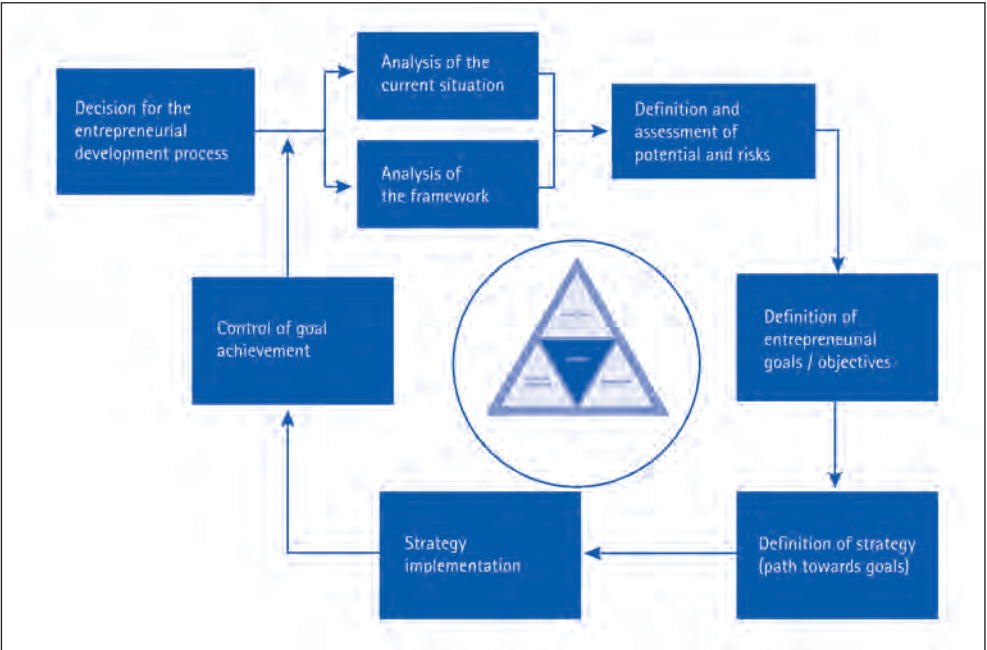
50 | Development process of a company or project.

Step 1	The decision on the development process. The company must actively decide to embark on the development path.
Step 2	Analysis of the current situation of the company or project and the framework conditions for the company or project.
Step 3	Defining and assessing the potential and risks of the company or project which have been derived from the analysis.
Step 4	Definition of the corporate or project objectives. After these are formulated, the objectives for the individual areas of the organizational hierarchy, i.e. project sub-goals, can be derived.
Step 5	Definition of the strategy, i.e. plan, for achieving the business or project objectives. Here too the general strategy is developed first. Only after this are the sub-strategies for the various levels of the organizational hierarchy or the various project sub-goals developed.
Step 6	Implementation of the strategy at all levels of the enterprise or the implementation of all project sub-goals.
Step 7	Monitoring the achievement, i.e. were the precise objectives achieved that were defined and if not, where do the differences and/or deficits lie?
Step 8	Reentry in the process. As initially stressed, it is essential for a company to constantly improve itself due to the necessity for business growth (Schumpeter, 1912).

In all programs, the concept of the »strategic triangle« serves as a basic framework for the respective curricula, i.e. the content and sequence of the course modules and seminars ideally map the individual steps of the strategic triangle. The strategic triangle is also used heuristically, i.e. as a method students can use in their search for the knowledge they need to approach business issues.

Using steps 2 through 5 as an example, we will now briefly demonstrate how the method of inquiry-based learning can be applied in the concept of the strategic triangle (cf. for the following Rominger 2008).

The appropriate objectives for the project and the correct strategy for achieving goals can only be defined when the actual situation – i.e. the current state of the company or project – and the framework conditions – i.e. the change of the corporate environment – are known and stated as assumptions (Macharzina 2003). Such analyses and syntheses should be carried out at a high level of intensity because all other decisions depend on them. It can be very productive to leave existing paths and opinions and observe the company and its competitive environment – as they have been up until now – from other angles.[67]

Analyzing the company's internal factors and comparing them with previous analyses can give a more or less accurate and meaningful profile of the company in the present. A wide range of methods and tools exists to carry out such analyses and achieve the most precise results possible. Frequently used and proven methods or tools for analyzing the current situation include:
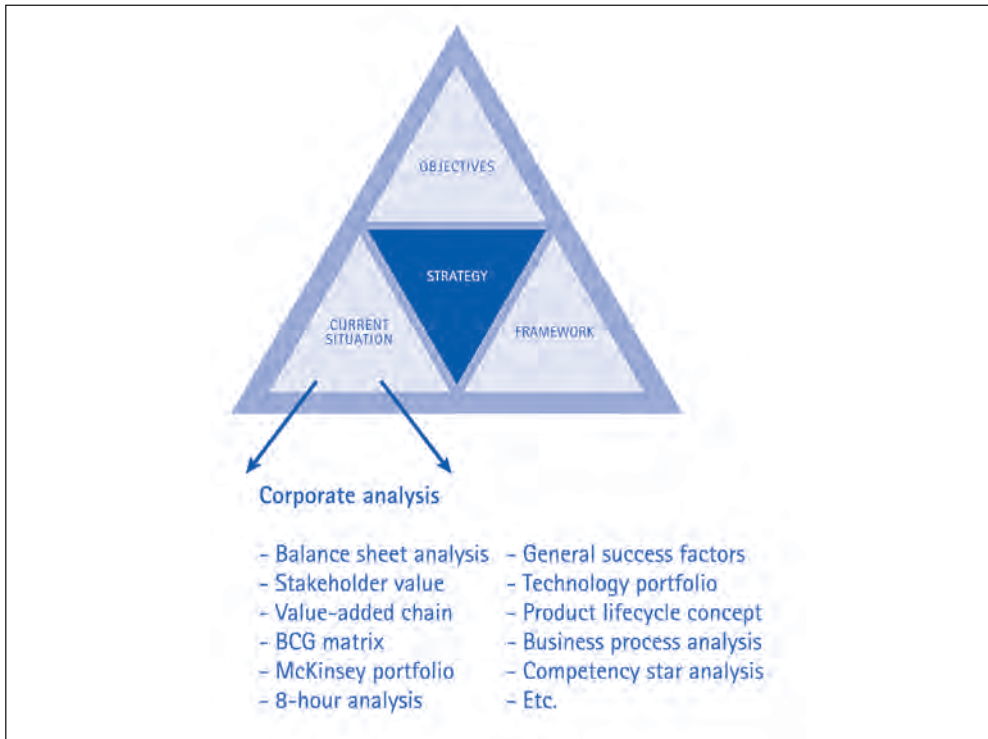
51 | **Analysis of the current situation.**

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67 A new, unprejudiced perspective on a company and its competitive environment is almost inevitable when a new observer comes along, i.e. when an outsider (e.g. an external consultant) or a new employee is given this task.

After an internal analysis of the company, the next element in the business develop-ment process is analyzing the external framework conditions. These can be ana-lytically divided into a »corporate environment« and a »general environment«. The analysis of the business-related environment deals specifically with the company's narrower economic environment, such as rivalry among market suppliers, the cus-tomer situation or the supplier situation. The analysis of the general environment includes such general conditions as sociocultural, technological, political-legal, or macroeconomic factors. Frequently used and proven methods and tools for the analysis of this framework are:

OBJECTIVES

STRATEGY

CURRENT
SITUATION   FRAMEWORK

Analysis of company environment

– Analysis of competitive
  forces based on M.E. Porter
– Market analyses
– Strategic foresight
– Resource availability
– Etc.

Analysis of general environment

– Global markets
– Growth markets
– Political frameworks
– local / global
– Financial markets
– PEST analysis
– Etc.

52 | Analysis of the framework conditions.

The so-called strategic concepts can be derived after merging the analyses of the current situation and the framework conditions (Simon, v. d. Gathen, 2002), that is, the opportunities and risks of a company or project can be determined by syn-thesizing the two analyses. Strategic concepts have a more predictive nature than

mere analysis tools. Frequently used and proven methods or tools in the definition and evaluation of strategic concepts are:
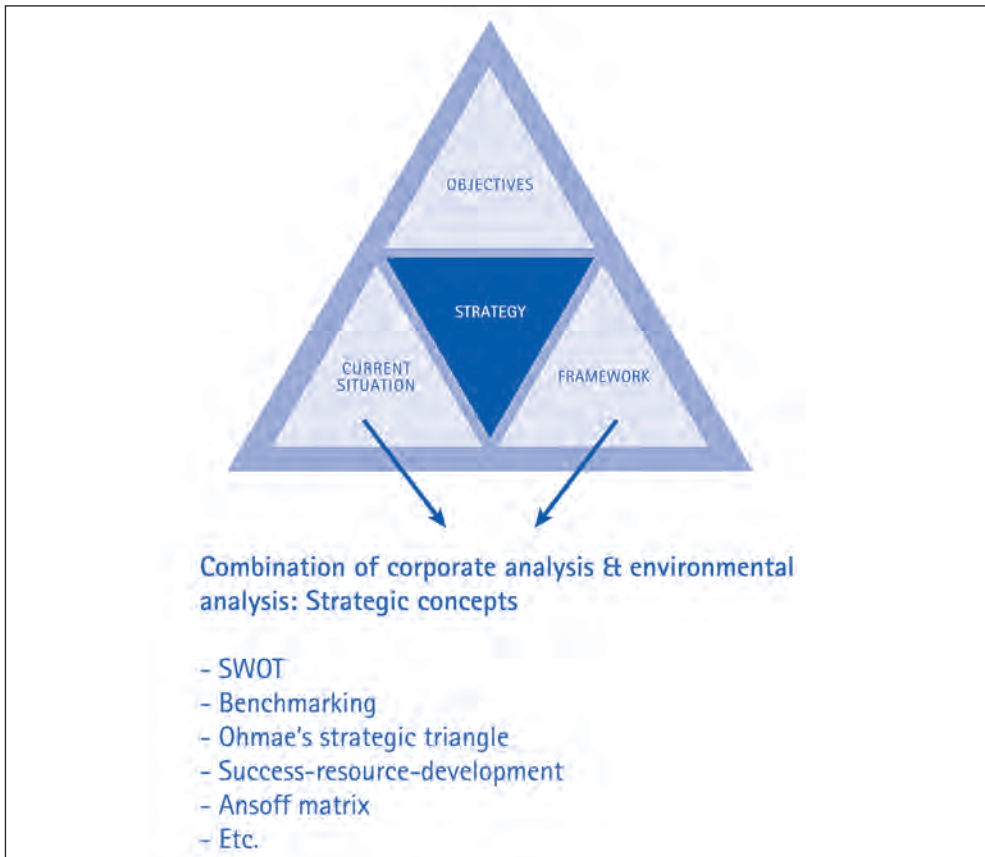
53 | Derivation of strategic concepts.

In the next step, the results of the analyses of the current situation and framework conditions as well as their synthesis in the form of strategic concepts are bundled into a comprehensive process. This allows realistic business and project objectives to be derived. The instruments for this, as shown in the following illustration, are to be considered only as a selection. Depending on the situation and the planned objectives, other instruments may need to be used in addition or as alternatives.
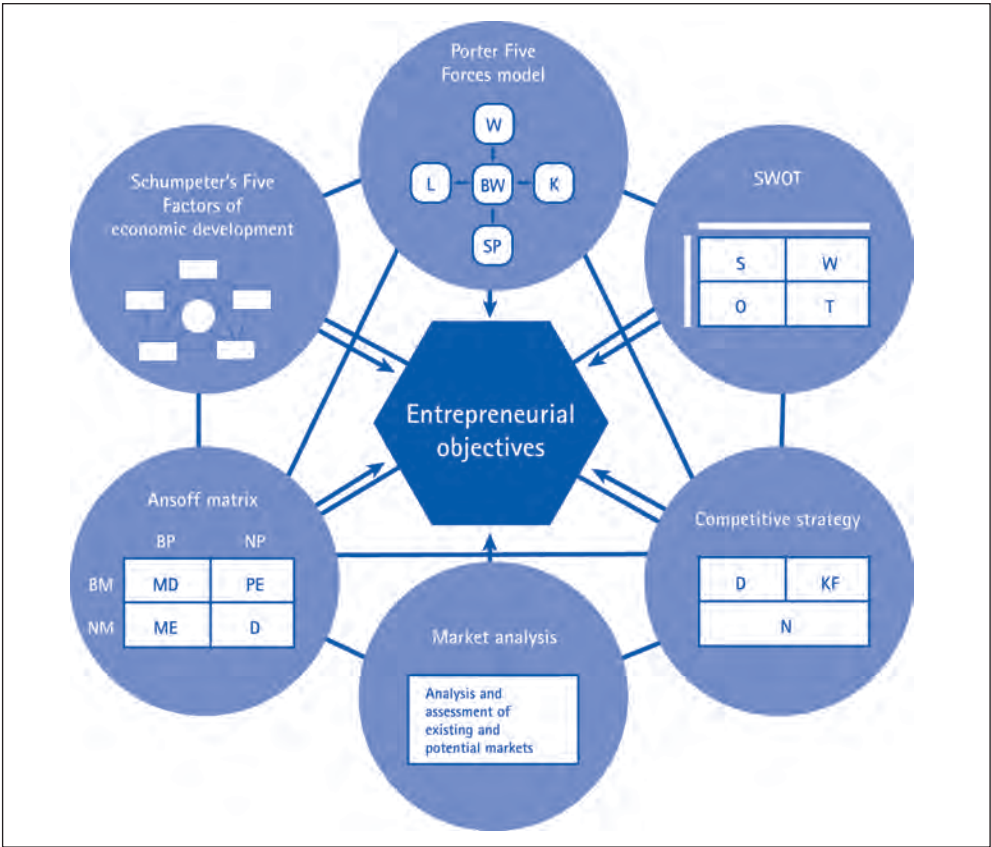
The next step, definition of a strategy, ultimately means creating an appropriate way of achieving the desired goal under the given conditions (current situation, framework conditions).

Scientifically speaking, these steps create the foundation for a theory or model: analysis of the current situation and the business environment forms the part that can be described in the broadest sense as »empiricism«, as primary and/or secondary empirical research. The derivation of strategic concepts corresponds to the scientific formation of hypotheses. According to this reading, such a strategy could then be described, for example, as a theory that can be proved or disproved by seeing if the company's desired target goal is reached or not. The entire development process, specifically designed for a given company or project, could then be described as a model.

5.1.5   SCIENCE AND SCIENTIFIC RIGOR IN THE SIBE TGC

As a business school that only offers Masters' programs, SIBE faces the following challenge in regard to inquiry-based learning: how can the various and sometimes conflicting requirements and principles of »science« and »management« be at least reconciled, or in the best case, fruitfully synthesized? To this end, we have drawn up some of the principles and maxims that research and inquiry-based learning should be based on in our programs. The following explanations are a preliminary position paper, since continuous discussions are held at our Business School concerning whether and how science and management can be synthesized.

Quite clearly, all scientific work should respect and identify the intellectual property of others – anywhere, at any time and in the proper form. The origin and source of ideas that are not your own must always be given. If one knowingly violates this principle, it is quite simply theft. If one does it unwittingly, however, it is simply sloppy! A work cannot and must not be called »scientific« only because its citations are correct. At the purely formal level, the greatest stupidity can be quoted correctly and a quote can be correctly embedded in an otherwise untenable argument. A formally correct quote doesn't change the fact that it is simply nonsense, or that the context in which a quote is found may still result in nonsense. It is the duty of every working scientist to distinguish and identify whether something is his own work or the work of another. But science cannot and must not be reduced to the principle of »quoting« and the maxim that arises from this, »quote and quote correctly«.

We consider the following principles to be those which result in real science: having truth as a goal and purpose, objectivity, openness to change, an approach with a nameable methodology and classification, intersubjectivity and verifiability of the process and outcome, as well as objective argumentation.

TRUTH
The basic purpose and objectives, and thus the cause and principle of science is the truth. The guiding maxims are:

- Do not invent, distort or suppress knowledge
- Work conscientiously and methodologically
- Search not only for knowledge that supports your own reasoning, but be your own devil's advocate
- Try and find out as much varied and contradictory information on your topic or project as possible.

OBJECTIVITY

The basic principle of science is objectivity, i.e. ethical neutrality, impartiality and a lack of bias. Maxims that guide behavior are:

- Carry out open-ended investigations and accept surprising results
- Be prepared for the fact that all your thoughts/biases/ plans may suddenly evaporate due to new knowledge.

OPENNESS TO CHANGE

In science there can be no ultimately definitive truths, i.e. there is always more-or-less great uncertainty about the validity of results. Maxims that guide behavior are:

- Summarize the conditions and limitations under which your results are valid
- Even after a successful project, question the reasons that have in fact led to a successful outcome.

METHODOLOGY AND SYSTEMATICS

Science has a nameable methodology, i.e. one tries to understand something in a systematic and planned way. Maxims that guide behavior are:

- Plan both the research as well as the transfer
- Justify why you should proceed in one way and not another.

INTERSUBJECTIVITY AND VERIFIABILITY

The scientific cognitive process as well as scientific findings must meet the criteria of intersubjectivity and verifiability. Maxims that guide behavior are:

- Make the path to knowledge and the research methodology verifiable and plausible for others
- Make the plan of action and the action strategy verifiable and plausible for others
- Enable the reader to understand and comprehend the line of argument by using consistent and uniform citation methods and listing all sources in the bibliography.

OBJECTIVE ARGUMENTATION

Scientific work must be objectively justified. Maxims that guide behavior are:

- Exclude judgments that cannot be rationally argued (emotions) or that cannot be explained to others (mere intuition, vague ideas)

 − Every judgment must be based on transparent criteria.

In a transfer-oriented program, i.e. one that focuses on actual implementation, we believe that science is based primarily on two things:

1. On the consistent focus on evidence and
2. On the fundamental reflection of all thoughts and actions.

EVIDENCE

Evidence is proof that in your research, you are in fact consistently trying to get a little closer to the truth based on truths. When creating knowledge (primary research), the following points are important:

 − Scientific objectives: Science must be the main reason for your work; marketing should be at most a nice side effect
 − Scientific design and approach
 − Scientific evaluation
 − In empirical research, one must always ask whether the results are representative
 − To enable review of the data collection and evaluation methods, the materials must always be visible.

If you access knowledge (secondary research)[68], please note the following:

 − Rely principally on knowledge that is scientifically verified
 − If you use knowledge that is not scientifically verified, you must handle it critically and justify your reasons for having recourse to it
 − Look for a balanced selection of sources and consider varying opinions and studies.

REFLECTION

»Reflection« means trying to understand one's own emotions. This does not mean suppressing spontaneity, intuition and creativity, but making sure to do the following:

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[68] Examples of secondary research in the framework of the SIBE TGC include analyses of internal corporate resources (ABC analyses, portfolio analyses, cost structure analyses, satisfaction analyses, core competence analyses, value chain analyses), and analyses of external market forces (environmental analyses, target group analyses, competitor analyses, substitution analyses, stakeholder analyses, benchmarking).

- – Systematically questioning whether the idea and the planned action are logically or empirically justifiable and thus comprehensible to others
- – Systematically questioning the limits and conditions that have led to the idea and taking a step back from yourself and your thinking
- – Systematically questioning the short- and long-term as well as direct and indirect effects (output and outcome) that the idea could have and actually has/had.

5.2 INTEGRATION OF PERSONAL AND BUSINESS DEVELOPMENT IN THE TGC

Through the Talent Growth Principle, both projects of the SIBE curriculum – the business project and the »hidden project« of the student's personal development – are integrated very firmly into the program, both formally as well as in regard to content (cf. in the following Faix, Schulten, Auer 2009 et al).

5.2.1 CONTENT INTEGRATION

The curriculum of all SIBE courses is organized along the lines of an ideal business rationale or the logic of a business plan.[69] The sequence of course content specifically provides all the content and methods students need to understand and successfully implement a holistic, microeconomic project in a macroeconomic environment.

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69 For more information, see the following chapter on the application of the »strategic triangle« concept in the SIBE TGC.
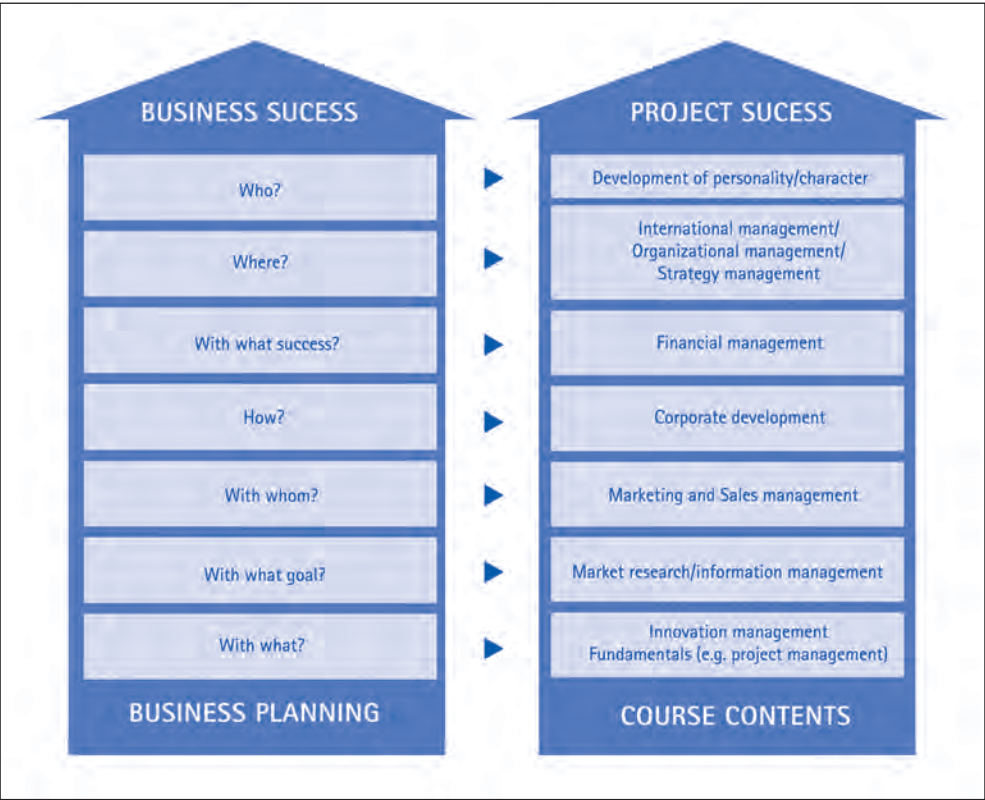
55 | Business plan logic applied to course contents.

Specifically, content is integrated as follows: before the first classroom events, students complete a period of self-study. The university supports them during this phase by providing reading material, web-based training etc. This allows them to initiate their thinking, making them ask themselves whether and how this knowledge can be generally and specifically transferred into entrepreneurial reality and project work. These conscious mental activities are then examined in greater depth in seminars and other classroom events such as so-called »project colloquia« or »transfer workshops« and in »transfer papers«. Transfer workshops are similar to seminars, and are led by experienced people. They offer students the opportunity to discuss the status of their projects in smaller or larger groups and answer project-specific questions that enable them to use the collective intelligence of the study group. In addition to traditional written exams, transfer papers are used to verify knowledge. They are better for knowledge verification and thus for qualifications because they test whether the content of a seminar has actually

been understood. »The transfer papers are intended to document how students can specifically implement seminar content in their projects or companies« (SUB RPO: §6).

The information learned about theories, methods, trends, etc. is first reflected against the background of the student's own content and then applied concretely. Through this direct transfer and the subsequent experiential learning, the information learned is deepened even more. Students must do this independently in situations that are open-ended and uncertain. This in turn systematically makes demands on and promotes their competence development.

56 | Knowledge, qualifications, competence in the Talent Growth Curriculum.

5.2.2   FORMAL INTEGRATION

During their entire course of study at SIBE, students can rely on the expertise of and consultation with professional and project lecturers. They obtain support in their companies from a business mentor who is generally their immediate supervisor (and who has a university degree).

Both the transfer and the development of the student's own competence is documented in writing. In the Talent Curriculum Papers related to the business project, students document the definition of their initial situation, the environment, the objectives of the project or sub-project and the chosen strategy, how the implementation has had an impact on the project and what successes and benefits the company has obtained from the project. In the Talent Curriculum Papers concerning their own competence development, students are expected to reflect both on their competencies and their personal development against the background of scientifically based diagnostics (see below).

57 | Formal integration through integrative counseling.
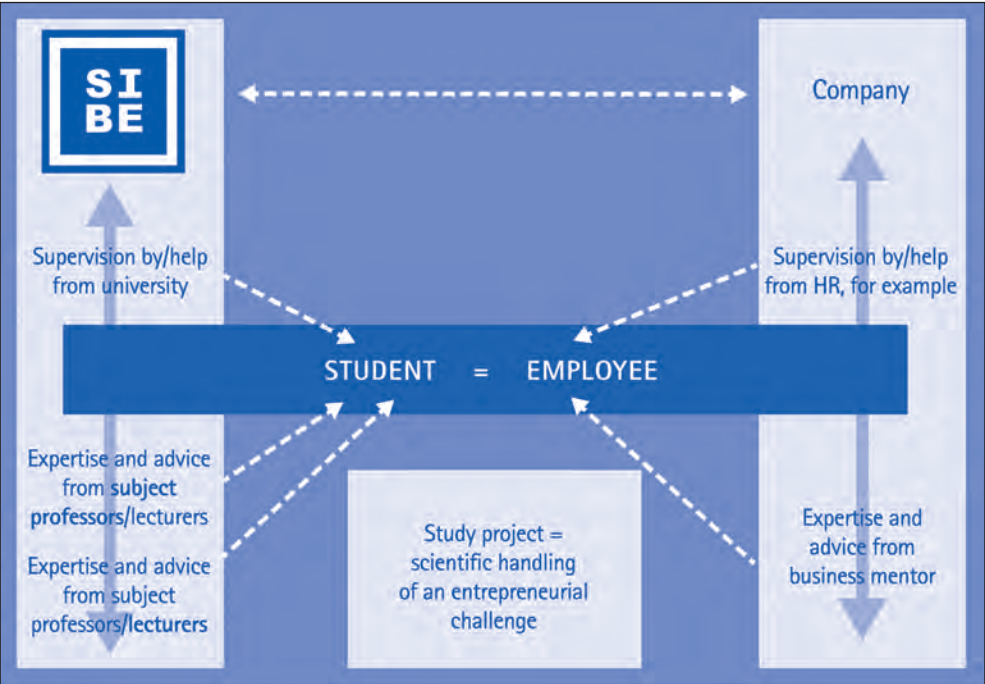
A main focus of the examinations is the so-called »Talent Curriculum Papers« (TCPs). The TCPs are discussed in learning tandems or study groups as well as with the SIBE real case project coaches and business mentors in the relevant companies and finally presented and discussed at the university and in the company.

The Talent Curriculum Papers are thus an important means of monitoring how well students have achieved their goals. In addition, the students are encouraged to record the status of their projects on a monthly basis. Through continuous analysis of the project-specific current situation and framework conditions, the project objectives as well as the developed project strategies can be monitored and, if necessary, adapted.

In addition to the Talent Curriculum Papers, the Master's thesis and the defense of both of these are likewise of great importance in the final examinations. »The thesis is a practical, scientifically prepared and business-relevant concept and final document in which the knowledge acquired in the course of study and the skills learned from the project can be applied to the student's professional environment. The thesis is meant to show that the student is in a position to handle a problem in a company independently and methodologically. As a rule, the project is defined at the beginning of the program with the student, the sponsoring company and an SUB examiner« (SUB RPO: § 9). The defense of the Master's thesis is just as project-specific and has the following character: »In this test, students begin by presenting a summary of their project work. For the purposes of comprehensive training, interdisciplinary relationships related to the project will be the main focus of the interview, in which the examiners are entitled to ask questions« (SUB RPO: § 11). Both in terms of content and formally, the project is central to both the Master's thesis as well as the examination. To this end, the following people participate in the evaluation of the Master's thesis: »The thesis is evaluated by an SUB examiner as well as an examiner appointed by the sponsoring company« (SUB RPO: § 12). Similarly, the following people generally belong to the examination committee in the final examination: »1. a teacher appointed by the President (examination chair), 2. the SUB representative appointed as examiner and 3. the representative from the sponsoring company appointed as examiner [i.e. the project supervisor in the respective student's company]« (SUB RPO: § 11). In the grading of the examination results, each of the parties has an equal vote.[70]

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70 However, specific measures should be used to ensure that the thesis is not only valuable for the sponsoring company but also meets scientific standards. Thus, the following applies to the Master's thesis: »The thesis is evaluated by an SUB examiner and an equally appointed examiner from the sponsoring company. If a competent and independent assessment cannot show that the thesis meets practical and scientific requirements, it must be evaluated by a second SUB examiner« (SUB RPO: Section 12).
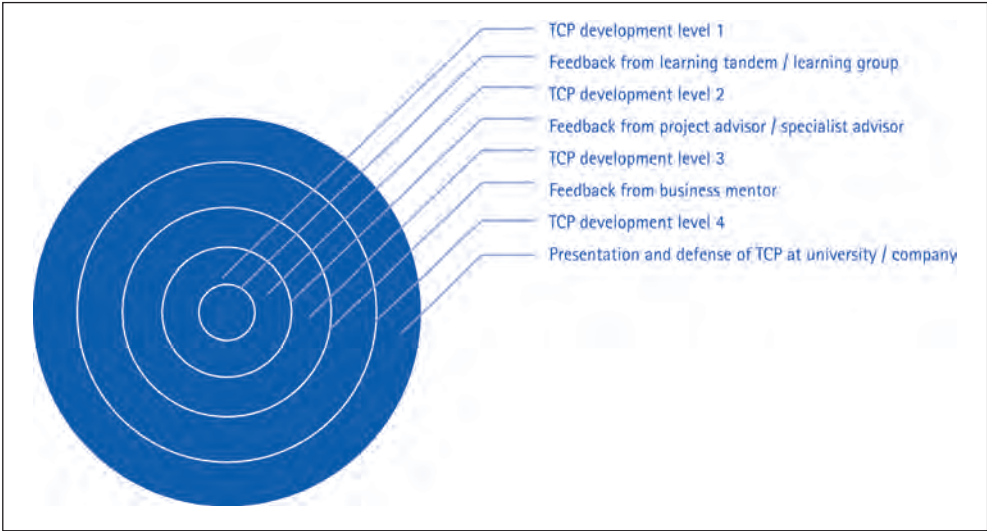
58 | Ideal development of a Talent Curriculum Paper (TCP).

The process of multimodal knowledge acquisition, transfer and scrutiny is repeated until the final examination of the program. Formally, the SIBE TGC can be represented as follows:
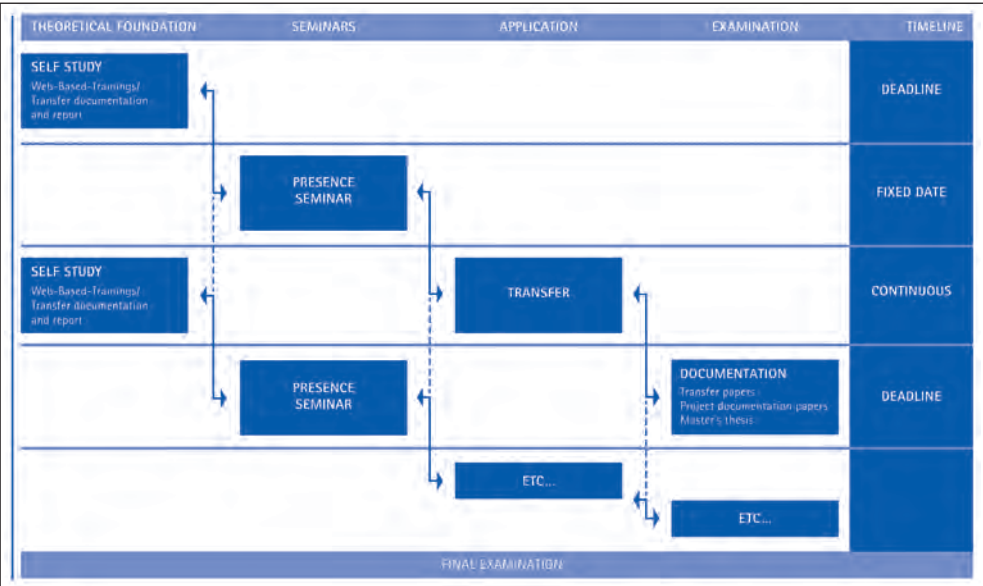
59 | The formal course of the SIBE Talent Growth Curriculum (I).

Before the seminars, the students are already involved in self-study in the form of pre-readings or blended learning (including web-based training). In addition, an E-campus is available as a platform for discussion with the learning tandem partner or study group.

In the second stage, this knowledge is deepened in the seminars and enriched, for example, by case studies and students' own examples, which require application of the knowledge learned and serve to develop the students' competencies. After the seminar, students are encouraged to apply their new knowledge and the seminar content to their own business project. Competence development occurs through the transfer of knowledge and skills to real-world situations. These developments are ultimately documented in a thesis.

Practice
– Daily on-the-job problem
– Problem from the project

Think tank
– Reflection in the seminar or learning group / learning tandem
– Learning resources on platforms (pre-readings, libraries, Web-Based-Trainings)
– Support from subject and project teachers, business mentors, online forum of the course, SIBE online forum

Documentation
– Transfer papers
– Talent Curriculum Papers
– Master's thesis

Practice
– Knowledge transfer
– Competency development

60 | The formal course of the SIBE Talent Growth Curriculum (II).

5.2.3   CONCRETIZATION OF THE INTEGRATION PROCESS BASED ON THE EXAMPLE OF TWO SIBE PROGRAMS

The following material illustrates the formal and substantive integration of the business project described above as well as the »hidden project« of personal development based on the programs:[71]

- Master of Arts in General Management
- Master of Science in International Management

MASTER OF ARTS IN GENERAL MANAGEMENT

This non-consecutive degree program targets graduates from all disciplines with degrees from universities, colleges, and other institutions of higher education. In particular, this Talent Growth Curriculum (TGC) program gives graduates from the humanities and social sciences, law or those with technical and scientific degrees a broad professional basis for higher-level careers at managerial level in different business areas and positions. Students with an economics background can deepen and expand their theoretical knowledge, increasing its practicality and orientation toward implementation.

The foundation for the entire M.A. program begins with introductory seminars to management basics. Students receive a comprehensive overview of the most important business models and management methods / instruments of our time. Building on this, the methodology of project management is taught. This enables students to clearly define the goal of their business project and to organize and carry out the project for the remaining two years. After the project objective and plan

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71   SIBE offers its courses as open and closed enrollment programs. Open enrollment programs are programs in which SIBE cooperates with several companies in the context of TGC programs, i.e. the students on the respective courses come from different companies. The general advantage of open enrollment programs is that because students are involved in different companies and industries, deep interdisciplinary exchange is possible (Maranville, Uecker 2007: 225).

Closed enrollment programs are programs in which SIBE cooperates with a single company in the context of TGC programs, i.e. the students on the respective courses all come from the same company. The general benefit of closed enrollment programs is primarily that the specific business or organizational challenges and competitive advantages of the partnering company are focus of attention: »Custom programs deal directly with organizational problems and become part of the organization's strategy for building competitive advantage« (Maranville, Uecker 2007: 224f.). SIBE's closed enrollment programs can be further distinguished as follows: 1. programs that build on open enrollment programs but are adapted in certain ways to the needs and wishes of the partner company (»customized programs«); 2. programs that are designed exclusively as closed enrollment programs (»corporate programs«) (cf. Horne 2010 and Djalali 2010).

have been identified come the seminars, which convey the necessary know-how to carry out market and potential analysis (e.g. market research, competition analysis, information management). These are followed by seminars on strategy management, including seminars on Management of Strategies, Business Strategy, Corporate Strategy, Growth and Globalization Strategy, Organizational Management and Quality Management, which answer the question of how a company's objectives should be achieved. The subsequent seminars cover Marketing and Sales, and show how the previously defined market should be developed. After all of these parameters are determined, the seminars on Accounting & Corporate Finance explore the question of the project's financial situation. The entire curriculum is accompanied by seminars on personal development (Personality, Development of Competencies) and rounded out by the seminar on International Management and a period of study abroad in cooperation with a partner university in a growing market.

The program systematically qualifies students in two directions. First, leadership potential is developed or strengthened through the transfer of »soft skills« (e.g. personal development, leadership, skills development, etc.); second, specialized seminars (e.g. strategy, marketing and finance) ensure development of the most important economic areas of expertise.

A total of five Talent Curriculum Papers sat as examinations mark the relevant milestones of the curriculum, guaranteeing the scientific transfer from the seminars into practice. The sequence of the Talent Curriculum Papers 1-4 corresponds to the logic of a business plan, so that students simultaneously document their studies and project results as well as the decision-making basis for their business partners. Building on this, the Master's thesis, which comprises the written part of the examination, is created as a comprehensive account of the entire project. In Talent Curriculum Paper 5, the student draws up a Competence Development Plan that includes the results of the KODE® / KODE®X estimates (see below) and outlines the student's further personal development (SIBE 2009b).

MASTER OF SCIENCE IN INTERNATIONAL MANAGEMENT

This program teaches internationally oriented management know-how based on a broad understanding of economics.[72] Accompanied by the so-called Talent Growth Curriculum (TGC), the goal of this program is to give graduates future access to technical and management positions in various business areas and positions in economy and society.

First, the basics of foreign trade and international management are taught in order to demonstrate global interdependencies and lay a proper foundation for global business activities. Building on this, students are taught the methodology of project management. This enables students to clearly define the goal of their business project (goal management) and to organize and carry out the project for the remaining two years. After the project objective and plan have been identified come the seminars, which convey the necessary know-how to carry out market and potential analysis. These are followed by other seminars on strategy management in international corporations, including, for example, the seminars on Strategies of International Management, International Organization Management and International Quality Management, which answer the question of how a company's objectives should be achieved. The subsequent seminars cover Marketing and Sales, and show how the previously defined market should be developed. After all of these parameters are determined, the seminars on financial management explore the question of the project's financial environment in order to answer the question as to what other markets can be pursued in the sense of internationalization. The entire curriculum is accompanied by seminars on the student's personal development.

A total of six Talent Curriculum Papers sat as examinations mark the relevant milestones of the curriculum, guaranteeing the scientific transfer from the seminars into practice. The sequence of the Talent Curriculum Papers corresponds to the logic of a business plan, so that students simultaneously document their studies and project results as well as the decision-making basis for their business partners. Building on this, the Master's thesis, which comprises the written part of the examination, is created as a comprehensive account of the entire project. In addition, students are systematically made aware of research gaps in international management; or they discover these themselves through their questions – which inevitably arise from the transfer papers (e.g. gaps in target processes, market definitions, etc.).

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72   A detailed description of this program can be found at Kisgen 2010, 2012 and 2013. Cf. Kisgen 2007.

In addition to the development of the main economic areas of expertise through the seminars and Talent Curriculum Papers, the program also ensures the ongoing development of students through the systematic development of »soft skills«. SIBE promotes the skills of participants in seminars on leadership and personality as well as in bi-annual events (SIBE 2009c).

5.3   MEASUREMENT OF EDUCATIONAL SUCCESS

During a SIBE program, students pursue two integrative projects: 1. development of an entrepreneurial project and 2. development of their own personality, particularly the »mental/spiritual component« of their competencies. [Seen in this way, the emphasis of the »Talent Growth Curriculum« lies both on the concept of a »talent« as well as on the term »growth«; one could thus speak of a »talent Growth curriculum (tGc)« or equally of a »Talent Growth Curriculum (TGC)« (cf. dazu Kisgen 2012 und 2013).]

In addition to these projects, we have also discussed the main purpose of academic degree programs, of course: learning to think and work independently on scientific projects. When considered in this manner, the emphasis would lie on »Talent Growth Curriculum (TGC)«. In addition, the entire meaning of the Talent Growth Curricula (TGC) (i.e. the emphasis on all three letters) can be seen by the fact that Students use the SIBE-TGC program to achieve targets they have set for themselves; in view of its specific orientation of as a »management program«, these objectives are primarily career goals. In this context, two things are important to us: 1. students need to develop these career goals for themselves; 2. these career goals should reflect how and where the students believe they can make the greatest contribution to a firm. The TGC offers student the chance to see themselves from a meta-level: through the SIBE Competence Estimate (SCE) seminars, through the concrete experience of day-to-day management life as well as through reflection on the overall project. In other words, by reflecting on what they can actually do, students becomes aware of whether or not they are on the right path for themselves; whether such a career meets their own needs and objectives. In this manner, the SIBE TGC provides an orientation for medium-term career goals and plans.

Seen in this way, students handle four integrated development projects during their SIBE program:

	TGC	**T**GC	**TGC**	**TGC**
Project	Development of the business project	Development of competencies and personality	Development of a scientific and critical perspective	Career development
Knowledge and transfer object	Student's business problem	Student's personality, in particular skills	Student's thinking	Student's career
Anchored in the curriculum by	Seminars and project work cycle of Talent Curriculum and transfer papers (TCP and TP), Master's thesis	Seminars held in the context of the SCE cycle (see below) and further seminars, colloquia, exercises, tasks and opportunities for reflection	Seminar cycle of the Talent Curriculum and transfer papers (PSA and TP), Master's thesis	Seminars, colloquia, exercises, tasks and opportunities for reflection (anchored outside of the curriculum, e.g. in alumni evenings »fireside chats«), mentoring programs
Foundations of knowledge and transfer	Primary and secondary data that have been developed in seminars etc. as well as independently worked out	Reflection of the data obtained in the context of the SCE (see below), reflection of biographical experiences as well as reflection of data from seminars or independent study	Confronting the epistemology and normativity of one's own actions in the context of transfer to the business project	Reflection of biographical experiences as well as of data worked on independently or in seminars etc.

Goal	To create benefit and identify one's own effective-ness in mo-ving towards the educa-tional goal of achieving a »creative personality«.	Being clear about oneself in general and specifically in moving towards the educational goal of achie-ving a »crea-tive persona-lity«.	Developing a constructive, critical per-spective and recognizing one's own position	Developing the elements (e.g. networks, Master's degree, management know-how, specific competencies etc.) that ena-ble the achie-vement of the student's own (career-) objectives

Table 4 │ Overview of the content, objectives and components of a SIBE program

We believe that education always targets the entire personality. If education means that human beings progress in their entirety, then measuring educational achieve-ment must be methodologically designed to make this holistic development visible, and if possible, objectifiable. In our view, such measurement consists of three complementary questions:

- What do I know?
- How do I act and how do I think?
- Who am I, what do I want and what do others see in me?

5.3.1 WHAT DO I KNOW?

At SIBE, knowledge is assessed by means of written, oral or practical examina-tions etc. These practices – as old-fashioned as they may seem – have lost none of their importance. However, such practices are used at SIBE to verify that the lear-ner has fully understood the learning material, including its content, context and relevance. To make student progress objectifiable and visible, SIBE uses exams and the so-called transfer papers (TPs). In the TP, the student documents how the content of a workshop is to be specifically used and implemented in hisproject. The goal of all of the above-mentioned elements is the acquisition of qualifications.

5.3.2 HOW DO I ACT AND HOW DO I THINK?

In a certain sense, actions are the manifestation of the synergistic interaction of all elements of one's own personality. Accordingly, SIBE measures educational success in a comprehensive manner, especially in regard to the individual student's actions. To make student progress objectifiable and visible, SIBE uses the so-called Talent Curriculum Papers (TCPs) and the Master's thesis.

»The TCP presents solutions to business-relevant project tasks. In this case, the students should use and implement the methods and findings learned in the program« (SUB RPO: § 5). All Talent Curriculum Papers must be application-related documentation that meet scientific standards. A Talent Curriculum Paper is assessed primarily based on the following aspects: methodologically and scientifically correct preparation of the project, implementation of the solution, the scientific justification for the procedure and the results obtained.

In addition to the Talent Curriculum Papers, the Master's thesis – as well as the defense of both of these – is likewise of great importance for the examinations. »The thesis is a practical, scientifically prepared, business-relevant concept and final document in which the knowledge acquired in the program and the skills learned from the project can be applied to the student's professional environment. The thesis should show that the student is able to independently and methodologically handle a problem in a company.

5.3.3   WHO AM I, WHAT DO I WANT AND WHAT DO OTHERS SEE IN ME?

When reflecting on one's self-image and how others see one, SIBE is concerned with those personal conditions that precede an act as well as the social consequences that follow. Specifically, all elements of the personality (knowledge, competence, temperament, identity, values and virtues) and the appreciation received from others (which results in prestige, charisma and authority) must be fully and thoroughly reflected on. Thoroughly means first that the process should include self-reflection as well as external assessment. Thoroughly also means that the learner should reflect on whether he can achieve the defined learning objectives or educational ideals – and wants to.

To make the student's educational progress intersubjective and visible, the so-called »SIBE Competence Estimate (SCE)« is used.

The above-mentioned educational objectives of the TGC can be further differentiated into the following goals. In the context of the SCE seminars and other events, the aim is to accomplish the following:

- Impetus for increased sensitivity for the topic of personality, especially the element of »competencies«
- Reflection on one's own personality, especially in the area of competencies.
- Paradigm shift in students: from orientation to qualifications toward an orientation to competencies

On the other hand, the SCE seminars and other TGC seminars should also achieve the following:

- Create an understanding and commitment in students for the SIBE educational philosophy and educational ideal of the creative personality
- Encourage and promote an active definition of one's own career goals
- A professional orientation.

A number of SCE seminars are held in the TGC context. The educational emphasis of these seminars is to give students the means for self-help:

- Students reflect on their own self and actions based on the results of competence estimates
- Students reflect on the self and actions of others

based on the results of competence estimates
- Students reflect on their innermost goals and values
- Students coach themselves and others based on reflection
  of the competency estimates and taking their own
  innermost goals and values into consideration.

The reflections begun in the seminar on one's own self-image and how one is seen by others are supplemented by the student through, among other things, competency estimates from his/her manager, partner (spouse, registered partner), a friend, work colleague or acquaintance. Based on these assessments, each student writes a transfer paper after a SCE seminar, the grading of which goes into the final grade of the program. Each transfer paper contains the following:

- A protocol for the student
- How do I see my skills and why?
- How do others see my skills?
- To what extent do my self-image and the way others see
  me match? Where are there big differences?
- What was essential feedback for me; what major things did I learn?
- A contract with myself until the next SCE seminar
    — The ACTUAL SITUATION of my personal potential, i.e.
      my currently actualized personality
    — The FRAMEWORK for my personal development, personal
      situation, i.e. private, professional, etc. as
      well as opportunities and chances
    — My OBJECTIVES – in terms of my personality
      that I can and want to accomplish
    — My education, i.e. my personal development STRATEGY: What
      do I do, why, with whom, how and when to achieve my objectives?

In addition to the transfer papers, a Talent Curriculum Paper is the focus of the TGC examinations. It also flows into the final grade of the program. In this process the students work particularly on the following questions:

- A self-assessment and assessment by others of one's
  personality, in particular an estimation of individual skills
- The student's potential for and performance while creating
  value: illustration of this based on the project work in the SIBE
  TGC and, where applicable, the results of other activities
- My network: presentation of one's current network that

     may be of significance to one's personal career
 –   My career goals: based on previous reflections, a presentation
     of career goals for the next five years with a written statement of
     reasons, if necessary by the use of appropriate job profiles, job
     advertisements or job descriptions. This presentation must present
     a convincing case in itself and for a potential employer.

5.3.4   COMPETENCE ESTIMATION

Aware of the growing importance of competencies, SIBE consistently and syste-
matically uses competence measurement methods before and during the program
– optionally after graduation as well. Valid statements about the status quo or chan-
ges can only be made about things that can be measured. In other words, only a
person who knows his current level can actually know whether, how and in what
direction he/she is moving. Measurement of one's own competency position and
history is made at SIBE primarily using the two measurement procedures KODE®
and KODE®X / SKE-Center® [Translator's note: when the SKE-Center® is refer-
red to, the German name is used; otherwise, the English acronym »SCE« for the
SIBE Competence Estimate is used].[73]

KODE®
KODE® is the abbreviation for Kompetenz-Diagnostik und Entwicklung [Compe-
tence Diagnostics and Development]. This procedure was developed in the mid-
1990s and is based on many years of theoretical and empirical work by John
Erpenbeck and Volker Heyse as well as the design solutions by Horst G. Max (Er-
penbeck, Heyse and Max 2004 and 2007). KODE® is an objectifying assessment
procedure for the comparison of competency levels; in this measuring method,
the appraisal results are quantified and, if appropriate, compared on a timesca-
le. KODE® presents a complete overview of basic competencies and builds on
classical methodological sentence completion and multiple-choice procedures (cf.
Heyse 2010: 77). The evaluation of KODE® competency tests consists of differen-
tiated observation of the four so-called meta-competence fields or basic compe-
tencies (Erpenbeck, Rosenstiel 2007: 490):

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73 For a further description of the KODE® procedure, cf. Heyse 2010; for further presentation of the KODE®X
    procedure, cf. Heyse and Erpenbeck 2007a. Regarding a scientific assessment of the reliability and validity of
    these two measurement procedures, cf. Heyse, Erpenbeck 2010.

- P – personal competence: the ability to be intelligent and critical in regard to oneself and to develop productive attitudes, values and ideals
- A – activity and empowerment: the ability to implement all knowledge and abilities as well as all results of social communication and all personal values and ideals actively and in a strong-willed manner
- F – professional and methodological competence: the ability to creatively cope with daunting problems, well equipped with professional and methodological know-how
- S – social communication competence: the ability to come together with as well as confront others of one's own accord. Creatively cooperating and communicating.

KODE® is the first analytical procedure in the world that

- Directly measures the four types of basic human competencies
- Is concretely and consistently based on modern theories of self-organization (incl.
- Hermann Haken and in the broader sense Ilya Prigogine and Humberto R. Maturana)
- Is founded on the fundamental management work by Peter Drucker, Fredmund Malik and Gilbert J.B. Probst
- Is specifically oriented to competence development and not only the determination of competencies
- Permits people, teams and companies to be analyzed precisely and according to a joint perspective (cf. Heyse 2010: 77-78).

The KODE® procedure allows differentiated statements to be made about how an individual approaches the problem-solving process and what potential may actually be present in him/her (which may have been undetected until now). The so-called competence atlas shows a person's strengths and weaknesses. To this end, the four basic competencies are further differentiated into a total of 64 partial competencies, which can be used both for formulating requirements as well as describing competencies.

61 | KODE® competence atlas.
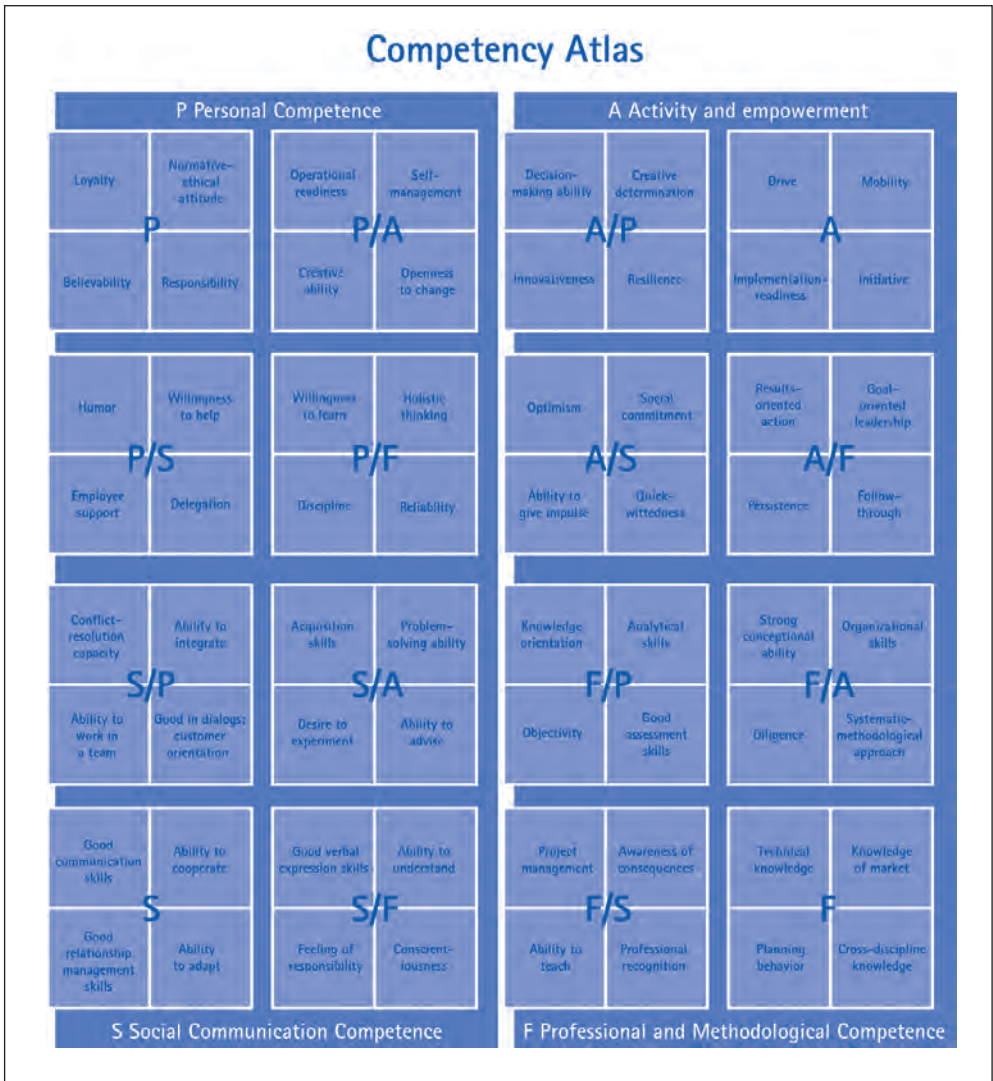
The status quo of the respective expression of the competencies is viewed in nor-mal everyday situations (under favorable conditions) as well as in very difficult situations with stress and conflicts (under unfavorable conditions).

At SIBE, KODE® is used for self-assessment, i.e. student applicants must comple-te and hand in an online questionnaire. In addition to this, assessments of students

by others, also based on KODE®, are generated by application document analysis, assessment center, interviews and other procedures.[74] Together, these two assessments constitute the basis for a decision as to whether and to what extent a candidate is suitable for a SIBE program. Accordingly, KODE® must be worked on before the commencement of studies.

KODE®X / SKE-CENTER®

The KODE®X / SKE-Center® procedure is intended to explore competency potential (Heyse, Erpenbeck 2007). In principle, strategically important competencies are determined from the above-mentioned 64 partial competencies by KODE®X / SKE-Center®. This process is used to analyze the requirements that a particular activity or position requires. After this, the desired profiles for tasks and/or positions, consisting of 12 to 16 sub-competencies, are defined. Intervals show the desired position of the degree of competence (»desired corridor«). Subsequently, estimates are made of the respective expression of the queried competencies. Because self-assessments and assessments by others (e.g. managers, fellow students or others) can be combined, the KODE®X / SKE-Center® procedures form a basis for analyzing these two types of assessment.

During the program, students carry out the assessment process several times using KODE®X / SKE-Center®. Their focus is on the area of competencies; through further surveys and in the associated seminars, students can additionally explore their entire personal development during their studies. The KODE® test before the program, together with the associated seminars and tests allow students' success to first be monitored, the current situation to be continuously redefined and strategy changes made if required. Monitoring and any necessary adjustments are intended to promote the success of the »hidden« project of competence development. At SIBE, the success of this project is defined by the following key performance indicators. At the end of the program,

- The student shall be in the »desired corridor« in terms of the manifestation of all sub-competencies of KODE®X / SKE-Center®
- The student's self-assessment and assessment by others will match
- The student will have achieved his own personal development objectives.[75]

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74 Assessment by others takes place before, during and after the so-called »career days«, which are held by the SAPHIR Germany human resources company for SIBE. The selection procedure is structured based on KODE® systematics.

75 A commitment is demanded from the entire course that all students achieve these goals.

At the conclusion of the program, a certificate provides information on the graduate's actual competencies in the context of the desired competence corridor. At a graduate's request, his/her competence development can also be followed after the end of the program. The 16 sub-competencies collected at SIBE by means of KODE®X / SKE-Center® form the set of competencies that are necessary for the performance of management functions. This general set of management competencies was created by:

−   Interviews / surveys of HR managers and managers that SIBE has
    collected for some years. Every year, SIBE interviews approximately
    150 companies about their general criteria for executives.
−   Analysis of job want ads
−   Evaluation of studies
−   Panel of SIBE experts[76] (cf. Erpenbeck, Faix, Keim
    2010: 405 and Faix, Schulten, Auer 2009: 157).
−   Regular reviews, e.g. by questioning experts (Delphi method)
    (see the contribution by Sax in Blumenthal, Faix et al. 2012).

This set of managerial competencies remains general because all of the required competencies listed – regardless of branch, company or level in the hierarchy – seem particularly relevant for exercising a management function. The term ‚set' means that this list synthesizes the smallest common denominator of all required management skills, covering branches, companies and hierarchies. In developing this skill set, it is important to note that in a specific case, i.e. the concrete job profile for a particular company that belongs to a particular branch and that is looking for an employee at a certain level, not all competencies in the set will show up. With high probability, this job profile will overlap to a more or less large degree with the skill set, i.e. one or more competencies from the set will be represented in the specific job profile.

The 16 sub-competencies formulated at SIBE through KODE®X / SKE-Center® are:[77]

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76   This panel of experts consisted of the following individuals: John Erpenbeck, Bettina Rominger, Annette
     Horne, Peter Wittmann, Silke Keim, Werner G. Faix

77   Cf. Faix, Mergenthaler 2010b: 144 and Erpenbeck, Faix, KEIM 2010.

62 | The partial competencies of the SIBE KODE®X:
a general set of competencies needed to exercise a management function.

These 16 partial competences can be defined as follows:[78]

Results-oriented action	– Consciously pursues and implements objectives actively and with great will and perseverance, and is only satisfied when clear results are available. – Actively influences all aspects of the actions that lead to the goal. – In the face of temporary difficulties, perseveres to ensure results. – Is motivated by the expectation of concrete results.

78 The following descriptions are found in Erpenbeck, Faix, Keim 2010: 405 ff.

Loyalty / Integrity	– Is clearly on the side of the company and all employees / colleagues – both when it comes to being positive or critical. – Is open and cooperative with managers. – Is committed to the company and its goals; identifies with its products / services and represents them with conviction. – Actively represents the company in public and refrains from expressing any personal dissatisfaction with the company.
Analytical skills	– Comprehends quickly, has an excellent command of abstract thinking and expresses himself clearly. – Can distinguish the essential from the non-essential, condense information overload, quickly get to the heart of issues, recognize trends and connections and derive the correct conclusions and strategies from them. – Easily handles facts, figures and data, and knows how to create a clearly structured picture from them.
Problem-solving ability	– Identifies problematic situations, processes and target structures, solves tasks and problems as quickly as possible by intensively taking recourse to his own as well as the organization's existing technical and methodological knowledge. – Brings up recognized problems in creative discussions in the working group or company. – Effectively designs communication and management structures in accordance with the detected problem. – Initiates systematic-methodological practices or procedures for problem-solving processes with individuals or (project) groups. Systematically limits risks and solves complex problems in workable sub-problems or steps.

Reliability	– Develops a high level of personal responsibility and (work) discipline, a strong sense of awareness for tasks and is trustworthy. Has a values-oriented attitude towards work, makes high demands on himself and others and is committed to anchoring important values in the corporate culture. – Rapidly implements solutions recognized as correct, keeping emotions and value judgments out of factual statements. – Supports the company's interests through economic behavior and high loyalty, focuses on errors and problems if they endanger the company.
Decision-making ability	– Is willing to make decisions and implement them consistently. – Recognizes alternative options for action; is capable of assessing alternatives, based on cognition as well as on values. – In the event of unpredictable decisions, can rely on analysis as well as intuition. – Can set clear priorities.
Creative determination	– Enjoys actively designing systems and processes. Is motivated by challenges and has the will to enforce solutions even in the face of resistance. – Can select projects as needed, sets clear priorities in the development of solutions. – Is able to systematically develop comprehensive solutions; can systematically generate, develop and integrate knowledge and ideas of others into the solution. – Can complete complex projects on time, cost-effectively and with high quality and can coordinate and organize complex processes.

Communication skills	– Enjoys building relationships and communicating with people; approaches others with openness and a positive attitude, but also with the necessary distance. – Respects others, listens carefully and sympathetically, handles objections factually and with a tolerance for frustration. – Has a high ability to convince. – Can adjust his communication to the target group, convincingly control the process of goal setting and plausibly convey objectives; ensures that employees know and understand the objectives.
Initiative	– Demonstrates great personal commitment, not only throughout the entire work process, but also in private life. – Develops his own goals and ideas and promotes them actively and successfully. – Learns any knowledge required for the task. – His own activities find a high level of acceptance in others.
Operational readiness	– Is selfless and responsible both when promoting common business and operational objectives as well as in private life. – Places high demands on his own efforts as well as those of employees and colleagues. – Acts as a model for others. – Can get others to take decisive action.

Holistic thinking	– Directs his thinking not only to technical and methodological details of tasks, but to their comprehensive content, context and background. – Can see beyond his own working group and company; recognizes and considers the narrower and broader environment of the task. – In doing so, does not only observe technical relationships in the strict sense, but also the ethical, economic, political, social and ecological effects of his actions. – Integrates the technical and does not simply subordinate it.
Conflict resolution capacity	– Recognizes the conflicting interests of others as well as his own interests. – Has the necessary understanding and tolerance to examine the interests of others with an open mind and to critically examine his own. – Sensibly conducts discussions with colleagues, managers, customers, etc. on conflicting goals and interests and withstands antagonism. Is persuasive, breaks through resistance and blockades with convincing arguments, creates trust and has a confident demeanor. – Does not resolve conflicts at the expense of the conflicting parties, but in such a way that their personal responsibility, creativity and social communication increases, and is therefore a person who is gladly sought out as a mediator in conflict situations.

Ability to work in a team	– Is ready and able to work in groups and teams; approaches others openly and sympathetically but retains the appropriate distance. – Ensures open presentation of other views and opinions, listens carefully and sympathetically, handles objections factually and with a tolerance for frustration, considers other views and opinions and is able to introduce them into group processes. – Is capable of consensus and promotes common solutions by using arguments to convince, even in the face of differences. – Acts as an intermediary between his own performance, the group's average performance and social definitions of performance and value.
Acquisition skills	– Approaches other people actively and with great initiative; understands and influences others through intensive and continuous communication. – Develops specific solutions and conveys the feeling that everyone affected by his work is fully involved. – Quick to recognize what is essential and independently promote it; can prioritize people and contacts according to importance. – Orients himself to any special characteristics of his counterpart; concludes discussions with specific agreements (follow-up activities, dates etc.)

Resilience	– In the event of uncertainties, difficulties, resistance and stress, remains organized for a reasonable period of time. – Sticks with projects even under difficult conditions and feels challenged and enabled by increased requirements. – Through his behavior, also encourages others to respond to stresses and accept them as a challenge for personal development or the development of the group, department etc. – Considers past conflicts and critical situations as stimuli for personal development and maturity; tries to act objectively and is mentally stable enough to positively handle stress.
Innovativeness	– Actively looks for and implements positive changes for products / services, production and organizational methods, market relationships and overlapping networks; is happy to deal with problems and situations with uncertain outcomes. – Is open to the new, both outside of the working sphere, in the social environment, during leisure activities, and actively puts novelties into practice. – Often brings the best and most creative performance in situations that are open to change. – Through the intensive benefit gained from experience and through learning and continuous exploration of the environment, expands the conditions that enable innovative work.

Table 5 | Definitions of sub-competencies of the SIBE KODE®X.

5.4 ADDITIONAL FEATURES OF THE SIBE PROGRAM

The Talent Growth Principle serves as a unique selling point and defining feature of SIBE compared to other universities and adult education institutes. In addition, SIBE programs also differ due to the following:

- − Focus on the Master's segment
- − Financing concept
- − Special contractual clauses.

5.4.1 FOCUS ON THE MASTER'S SEGMENT

Around 15% of the registered students (for Bachelor's and Master's programs) at the SUB study at SIBE. SIBE focuses exclusively on Master's programs; about half of all registered Master's students at the SUB study at SIBE. The focus on the Master's segment has two primary consequences related to the creation of a European Higher Education Area, the so-called »Bologna Process«.

An important consequence of this process is the transition to Bachelor's and Master's degrees. Among the countries that participate in the Bologna Process, there is great consensus on formalities.[79] For the further development and design of the European Higher Education Area, one challenge remains, which is to find basic agreement on the qualification profiles that are obtained with a degree. For this purpose, the European Ministers of Education have advocated »developing a framework of comparable and compatible qualifications for their higher education systems whose goal is to define qualifications with regard to workload, level, learning outcomes, competences and profiles« (Berlin Press release 2003: 4). In other words, what is at stake in these qualification profiles is determining what a student knows, understands and can do upon or after completion of a given level of education.

According to the Ministers of Education and Cultural Affairs (KMK 2005: 2f.), the Bachelor's level has the following profile:

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79 These include quantitative targets for Bachelor's and Master's degrees (Bachelor's degree 180-240 ECTS credits, Master's 60-120 ECTS credits), the nomenclature of the two degrees (Bachelor's and Master's or equivalent national designations), individual basic principles (employability, internationalization, etc.).

KNOWLEDGE AND UNDERSTANDING	ABILITY
– The knowledge and understanding of graduates builds on the level of the higher education entrance qualification and extends beyond it. – Graduates have demonstrated a broad, integrated range of knowledge and understanding of the scientific basis of their field. – Graduates have a critical understanding of the major theories, principles and methods in their program and are able to deepen their knowledge vertically, horizontally and laterally. Their knowledge and understanding is in line with the current state of the literature, but should also include some in-depth knowledge of the current state of research in their areas.	– Graduates can apply their knowledge and understanding to their activities or profession and work out and solve problems and arguments in their fields of expertise. – Graduates can collect, evaluate and interpret relevant information, in particular for their program. – Graduates can derive scientifically well founded judgments that take social, scientific and ethical information into account. – Graduates can develop their own further learning processes. – Graduates can formulate specific positions and formulate and solve problems. – Graduates can exchange knowledge, ideas, problems and solutions with scholars and laypersons. – Graduates can assume responsibility in a team.

Table 6 │ Qualification profile of the Bachelor level according to the Conference of Education Ministers.

According to the Ministers of Education and Cultural Affairs (KMK 2005: 2f.), the Master's level is determined according to the following profile:

KNOWLEDGE AND UNDERSTANDING	ABILITY
− Master's graduates have demonstrated knowledge and understanding that is usually based on the Bachelor's level, and significantly deepened and expanded it. They are in the position to define and interpret the specific features, limits, terminology and doctrines of their fields. − Their knowledge and understanding is the basis for the development and/or application of independent ideas. This can be application- or research-oriented. They have a broad, detailed and critical understanding of knowledge that is up-to-date in one or more specialized areas.	− Master's graduates can also apply their knowledge and understanding as well as problem-solving skills in new and unfamiliar situations or in a broader or multidisciplinary context. − Master's graduates can integrate knowledge and handle complexity. − Master's graduates can also make scientifically based decisions even on the basis of incomplete or limited information while taking into account social, scientific and ethical findings. − Master's graduates can independently acquire new knowledge and ability. − Master's graduates can carry out self-directed independent research and/or application-oriented projects. − Master's graduates can clearly and unambiguously communicate their conclusions – based on the current level of research and application – and the underlying information and motivation they are based on, both to specialists and lay people. − Master's graduates can exchange knowledge, ideas, problems and solutions with scholars and laypersons at a scientific level. − Master's graduates can take prominent responsibility in a team.

Table 7 | Qualification profile of the Master's level based on a decision by the Conference of Education Ministers.

It is a requirement of SIBE that during their studies, students completely work through an innovation in Schumpeter's sense – be it radical or incremental – conceiving, organizing, planning and executing it independently. Even if the qualification profiles contain idealistic assumptions, we can nevertheless conclude that students at the Master's level or Master's program graduates are better able to deal with the challenges of self-organized work on an innovative project.

5.4.2   FINANCING CONCEPT

The SIBE financing concept is also noteworthy. As a general rule, the costs for the program (program and service fees as well as the travel costs to the training locations) are paid by the company for whom the students work as part of their studies. This approach puts SIBE in the long tradition of dual education in Germany.[80] The financing concepts of SIBE and of vocational training academies are similar. It is also true for the latter that »firms assume the cost of in-house training and pay the students a training allowance, even during periods of theoretical training at the vocational training academies« (Hippach-Schneider, Krause, Woll 2007: 33).

The background of this financing concept is the Steinbeis principle that public tasks should be solved by private enterprise. In view of the enormous pressure to innovate and the growing demand for upwardly mobile employees, this principle in particular seems to be increasingly necessary, especially in education. Even more explicitly, one can no longer only trust state education, but must also organize, implement and finance private education. The financing of the program by companies is considered by SIBE to be »cost-neutral«, i.e. the claim and the reality of SIBE in the design of its programs is that the (monetary) value that students create through their projects easily exceeds the program costs many times over.

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80   The system is designated as dual because training is carried out at two places of learning: the workplace and the vocational school.

5.4.3   SPECIAL CONTRACTUAL CLAUSES

The design of the general work contract is unusual. With these specific contractual clauses, SIBE is primarily reacting to the ideal course of a SIBE program from a psychological point of view. The following illustration shows this course based on an exemplary SIBE student without professional experience.[81] Normally, a SIBE student with professional experience (in the MBA-degree program) has a different experience, namely without a trough at the beginning of the program.

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81   This course is based on the ideal course of a change-management process.

Perceived competencies

Very positive self-assessment
in regard to skills, qualifications
and future success in manager role

Great discrepancy between
self-assessment and reality
Self-image does not match
how others see one
Rejection of image that others
have of student

Insight
Development of frustration
due to insecurity about how
requirements should be met
In the doldrums
Acceptance

Awareness

Integration

Career

Recognition
Benefit to company is
clearly defined
Success in the program
Takeover offer
Job-market value

Experimentation
phase

Project
definition
phase

Recognition

First successes

Project is well defined
Initial phase has been completed
Goals and strategies are clear
Implementation begins

Seeming difficulties:
«no one helps me»
«no one has confidence in me»
«others have better projects»

Positive
program begin

Program begin   End of studies   Time

63 | Existential destabilization in the SIBE TGC.

Often, neither students and to some extent not even companies have experience, let alone expertise, in the project areas. Thus, students can often not rely either on experience gathered from colleagues and superiors, or their own. Sometimes students have not even acquired the appropriate technical background from their first degree program. A further challenge may be for many students that when they begin their studies they are also new to the company and thus do not know the company's background. In addition, these complex projects involve many internal

and external barriers. Students must deal with many different intervening factors: They must promote their project internally and search for support for the project. To do this, they must communicate the significant value of the project and their own very personal services for the company without having demonstrated this previously – either to themselves or to others. They must make their voice heard in regard to the project – in large companies with interdisciplinary and multilingual teams and possibly large hierarchies – and assert their interests against those of other employees, who might well have spent decades in the company. They might have problems being accepted, because as students they are on the lowest level in the company and occasionally attend seminars.

By agreeing on the goals of the project, high expectations are made of students and demands are also made of them by their superiors. Because the students are responsible for the success of the project, they will address all of these challenges sooner or later. The responsibility for the project's success leads to increased involvement and thus to increased awareness and action. In the course of the project implementation, students have a variety of experiences. They are put into conflict situations, stimulated and irritated. Students are not pampered but learn to handle challenging situations out of necessity. This leads to a constant disruption of their emotional balance, to an existential destabilization.

Students start with the feeling of success because they have passed the entrance exam and begin their studies with the corresponding enthusiasm. They are convinced that they can work and study without any problems and with great elan. After confronting the new and unusual situation in work and study, it becomes clear that the students' own perception does not match the reality. Students first reject this discrepancy, but over the further course of their studies, they accept the reality and »differentness« of their new situation. They become aware of their lack of skills and respond with a feeling of frustration. They do not know how to comply with demands made of them. At this stage, they struggle with thoughts such as »No one helps me!«, »Other people have better projects!«»No one trusts me to succeed!«. Students are seemingly overwhelmed and the downward trend continues until the project is finally defined cleanly and its objectives as well as the strategy are in place. Finally, the implementation is done through different experiments, which result in the first successes and add to the prestige of the company. Students finally learn from this; they integrate successful experimentation into their behavior.

In the long term, these types of behaviors result in success for students, both in the program and the project. They thus create value for the company and increase their own attractiveness there as well as on the general labor market.[82]

In short, the contractual clauses of the SIBE contracts can be explained as follows: Even if students' performance should waver at the beginning or in the middle of the program due to an identity crisis, both the companies and the students should be more or less forced to persevere. Ultimately, in SIBE's experience, this is generally for the good of students and the company.[83]

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82 Of course, not every student goes through this process. Some students cannot definitively recognize their self-image or how others see them and become less strongly involved in the process of existential destabilization. They ultimately remain trapped in this uncertainty and alternate between confidence in their own powers and feelings of frustration.

83 Moreover, it should be noted that this model offers a great advantage especially for Bachelor graduates who have had no time for internships etc. during their studies: due to the two-year commitment to one company, the often-found sequence of internships and associated consequences (existential uncertainty, frequent moves, etc.) is eliminated.

6   SUMMARY OF PART TWO

As we understand it, the aim of education is the shaping and refinement of the personality, in the sense of having one and being one. In the sense of »having« personality, our view is that this consists of having knowledge, competence, character, temperament, identity, values and virtues. These are expressed by a person's actions, which is also to say that a person's personality is revealed through his actions. In the second sense, »being« a personality or creative individual is the result of receiving appreciation from others to the extent that the person not only appreciates himself as well but also acquires prestige, radiates charisma and gains authority. Both in the sense of »having« as well as »being«, personality stands for actualized momentum, for interim entelechy.

Our educational ideal is having a creative personality and being a creative personality. In our opinion, the fact that a person has a creative personality means that in addition to his deeply individual manner, he is characterized by the following elements that determine his nature: business knowledge, a business competency profile, an entrepreneurial temperament, an entrepreneurial identity and entrepreneurial values and virtues. The manifestation of the synergistic interaction of these elements is actions which a community judges in terms of the value they result in.

The consequence of this social process is first, that the individual and his actions experience a certain amount of appreciation from the community (prestige, charisma); second, this individual also gains influence over this community as a result of his actions (authority). Given the immense importance of innovation, the (desired and required) assumption of a leadership role in a community appears closely linked to the development of a creative personality. In other words, having a creative personality and being a creative personality seems to be not only the inevitable outcome, but also the fairest and most justified way for someone to take on a leadership role in a community or have the community request it of him.

64 | »Having« a creative personality / »being« a creative personality.
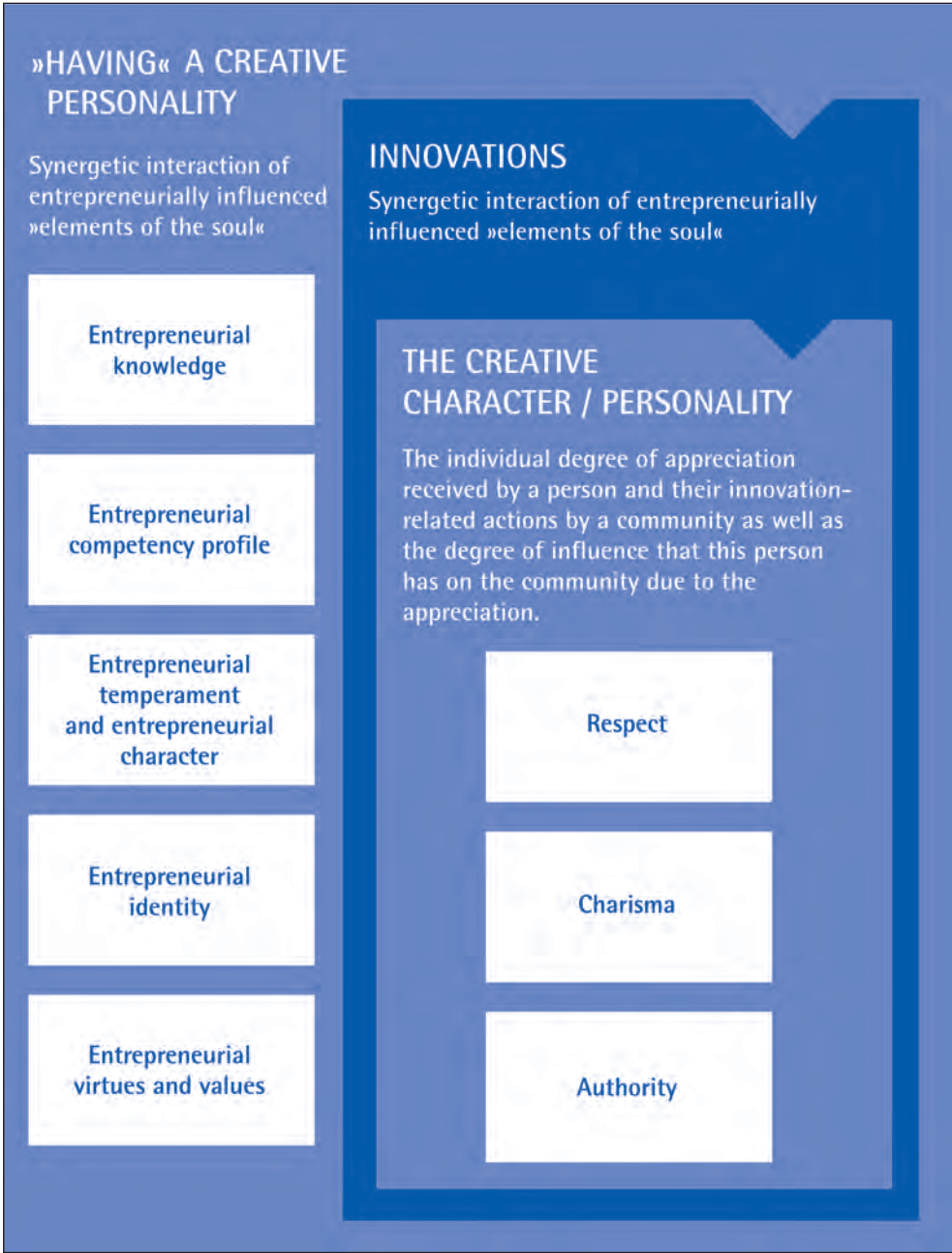
An educational model that contributes to the holistic development of a creative personality is thereby influenced, in our view, by the educational philosophy that positive knowledge can be learned at the same time as students are gaining experience. A fruitful educational methodology for this purpose is coupling the methods of inquiry-based learning, project learning and action-integrated learning. This educational model is considerably influenced by the fact that the learner is more or less protected, but always concretely involved in the world in order to better comprehend it. Another key principle of this educational model is that the learner has the opportunity to express concern as well as reflect his own deeply personal being, actions and desires and thus to profoundly change his entire personality.

6.1   A PLEA FOR HUMANISTIC AND REAL–WORLD–STUDIES

»Study«, in its original Latin meaning, denotes eager pursuit. The goal of this pursuit, according to Wilhelm von Humboldt's humanistic concept, is this: man should learn as much as possible about the world in this life, as well as absorbing it so as to transform his own being. A humanistic course of study is based on these two principles. The first principle – learning about the world – implies that man should strive to have the widest varieties of experience in, through and with the world. The second principle – absorbing it to transform his own being – means that the result of this learning cannot result solely in the accumulation of knowledge about the world or changes to this body of knowledge. Rather, it is that even the deep layers of our own being – e.g. competencies, identity, values – should be included in the absorption and transformation process that holistically shapes man's experience in, through and with the world.

Our interpretation of Humboldt's ideal is that the goal of education is the design and refinement of the personality. However, understood in this way, education can never be brought to students from the outside, but only encouraged. To form an independent personality, the student must have self-awareness and work on, for and with himself. The student does this through active involvement in the world – by bringing his entire being to the world to explore, recognize and shape it. Our job as an educational institution, as we see it, is to offer people a framework that in general allows them to form their personality, and specifically, to develop an autonomous and creative personality. We do this by having students work on an innovative real case project in a company as an integral part of their curriculum, i.e.: SIBE students are faced with real, concrete challenges with a new and/or different makeup.

In regard to the general aim of the formation of personality, in the course of implementing these innovative real case projects, students have a variety of experiences – both positive and negative. They are put into conflict situations; they are stimulated and irritated; they must inevitably learn to deal with challenging situations. Small- and large-scale successes during project implementation give students confidence and the realization that they can take care of themselves and succeed by relying on their own knowledge, skill and desires. Such positive and negative experiences lead to the continuous shaking-up of the students' emotional balance; to emotional destabilization. This destabilization occurs in situations that are painful, moving and/or irritating, or that lead to deep reflection, a new start and reorientation. Only during such poignant moments does a person feel in touch with his entire being. Only during such overwhelming moments can the feeling of deepest engagement set in. And it is only such harrowing moments that set in motion the deepest layers of the personality and allow processes to occur such as competence development and the internalization of values. This is because:

> *It takes concern. Without concern there is no commitment. Maybe one does do something once, in some place. Without concern, however, this remains trivial participation. Concern tries to find the causes. Only concern leads to a different consciousness. And only a different consciousness leads to different behavior. (Pestalozzi, 1989: 8 f.)*

With regard to the specific aim of educating individuals to develop a self-determined and creative personality, executing and accomplishing an innovative real case project leads to two things:

1. The formation of heuristic and creative thought and action. Only when the new and the different really engage students in their entirety do they learn that everything depends on the following knowledge, skills and desires:

- – I must formulate goals myself.
- – I must think through situations and the possible complex consequences of actions and decisions.
- – I must judge situations and the possible complex consequences of actions and decisions in the light of my own values.
- – I must have the strength and courage to take action.

2. The formation of comprehensive self-awareness and self-confidence and a pronounced desire for self-determination. With a loudly thought »I«, the student should be able to say:

- I know who I really am, because I've seen that, and how I act.
- I know that others also see me this way.
- I know what I can really achieve because I have implemented a major project, one that was very substantial for me in my current situation.
- I know that I can repeat this at any time.
- I know that I can and must shape my future in order not to have to depend on the benevolence of others.
- I know that the way to a free and independent life is the formation of my personality.
- And I know that this is a lifelong process that I must handle on my own.

6.2   THE SIBE PATH TO A CREATIVE PERSONALITY

The following figure describes the design of the TGC (Talent Growth Curriculum) at the School of International Business and Entrepreneurship (SIBE):
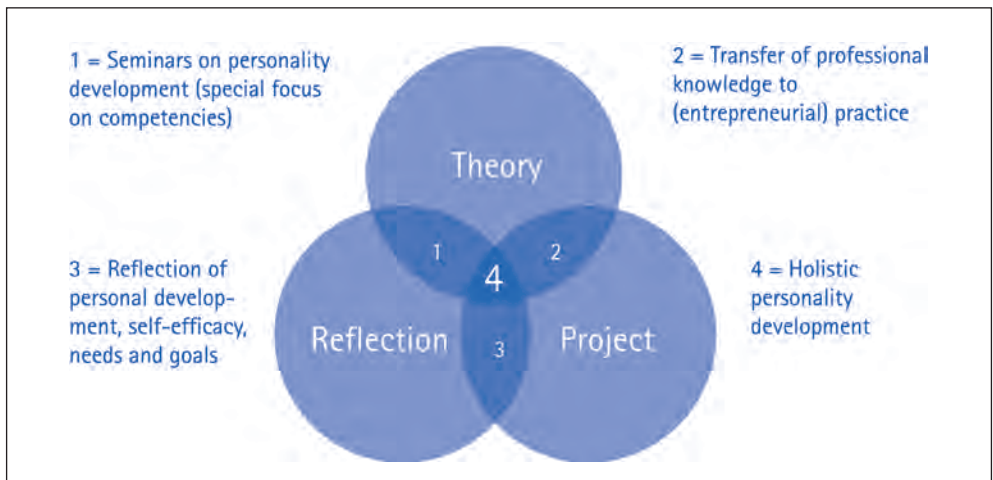
65 | Total overview of SIBE TGC (based on the concept of »personal development« by Faix, Rüttermann, Wollstadt 1995).

In a narrower sense, a typical program concentrates above all on »theory«, i.e. on total knowledge transfer during the program (seminars, periods of self-study). Due to the particular structure of the SIBE TGC, »reflection« and »project« are likewise incorporated into the »theory«. »Reflection« involves contemplation of development, needs and goals. The »project« aspect means the totality of all project work,

i.e. all project phases (including the development of solutions for the underlying business problem, implementation of these solutions and project documentation) as well as all practical phases of the program (seminars, project days etc.).

The intersection between theory and reflection (1) is developed during seminars on »personality development« and other events (Stuttgart Competence Day, Steinbeis Day, Steinbeis Engineering Day, Steinbeis Consulting Day, so-called »Fireside Chats«, at which successful SIBE alumni discuss their experiences, »Company Discussions« and other events concerning personality, education and entrepreneurship).

The intersection between theory and project (2) involves mutual, concrete knowledge exchange between the program and business practice. This transfer is guaranteed by SIBE through the special content-based and formal integration of the project. The intersection between reflection and project (3) means that students become aware of their own personality development as a result of the normal business working environment. This meta-level is created through regularly scheduled competency tests; the process of »stepping outside of one's role and observing oneself from a distance« takes place through reflection on the project, i.e. by thinking about what one can accomplish and has accomplished. Reflection also involves examining whether this career path is really right for someone, i.e. whether it corresponds to their own needs and objectives. This can only be done by having to confront concrete everyday management tasks. The SIBE TGC thus provides orientation for medium-term career goals and plans as well.

Finally, the synergistic interaction of all three elements (4) allows the holistic development of a creative personality:

- Knowledge and qualifications: through the curriculum, which is oriented to the logic of a business plan, students become acquainted with the interdisciplinary aspects of a company. Contact with other students from different academic and/or cultural backgrounds increases their general and intercultural knowledge.
- Competency profile: based on the knowledge imparted during the program, students implement an innovative real case project, i.e. they face a challenging, unprecedented entrepreneurial problem, which they work and hone their skills on. Both the process of »grappling with the problem« as well as the development of competencies are systematically and scientifically monitored, i.e. during the program, students are encouraged to continually analyze what they are doing

and prove themselves, whether through the documentation and defense of their project performance at the university and company or through the competency assessment procedure. Students are provided with two types of objective feedback on their concrete actions, project work (e.g. through the RCP [Real Case Paper] and appraisal meetings with their business mentors) as well as competency tests that show the development of expertise and where room for improvement may lie.

- Temperament and character: the ambitious goals intrinsic to an innovative real case project make students leave their comfort zones.
- Identity: regular feedback from other students, supervisors and teachers in regard to personal development and the course of their project supports students in their own self-reflection processes and in the development of self-awareness. Students must regularly defend their projects inside their companies as well as to their fellow students, which gives them practice in presenting themselves and their work. In addition, to successfully implement their projects, they must sell their goals to diverse stakeholders and target groups. The result of this is to make them mature. An awareness of responsibility is supported by working in groups and teams within the company just as in the program. Students must bear in mind that in addition to their own objectives, they must consider those of the group or team and of their colleagues, supervisors and faculty.
- Reputation: students must make clear the benefits of their projects for the company to gain prestige.
- Charisma: students must advertise their projects with conviction throughout the company and thereby demonstrate charisma.
- Authority: by successfully implementing an innovative real case project, students provide their communities (managers, employees, customers etc.) with lasting value. This gives them »natural« authority.

6.3 CONCLUSION

SIBE's Talent Growth Curriculum (TGC) is a special form of academic work-integrating curriculum. The core idea of this curriculum results from development of competencies through real-world-application. During the program, students work in a company and implement a project whose general aim is to create an innovation in Schumpeter's sense. Through their intensive involvement with these challenging, innovative and open-ended projects, students develop their own competencies.

The result of integrating the innovative real case project and competency deve-
lopment is that the companies, as well as the students, can benefit. Companies
can systematically and over a relatively long period evaluate a student's potential
and see whether he/she is a good match for them – and vice versa. In addition,
successful completion of an innovative real case project secures and develops
the company's success over the long term. Students have relatively protected
and yet intensely real circumstances for testing an innovative venture. This means
that students are given the opportunity to further realize their potential to become
a creative personality and thus further their careers. Both the development of the
project and the student's personality are evaluated with curriculum elements such
as seminar papers etc. (for projects) and competency assessments etc. (for per-
sonal development). Due to the ongoing opportunity to reflect on such aspects as
their actual situations, conditions, goals and strategies in project- and personality
development and the resulting dynamics, the following four-fold development dy-
namics can result (of course with the usual idealistic exaggeration):
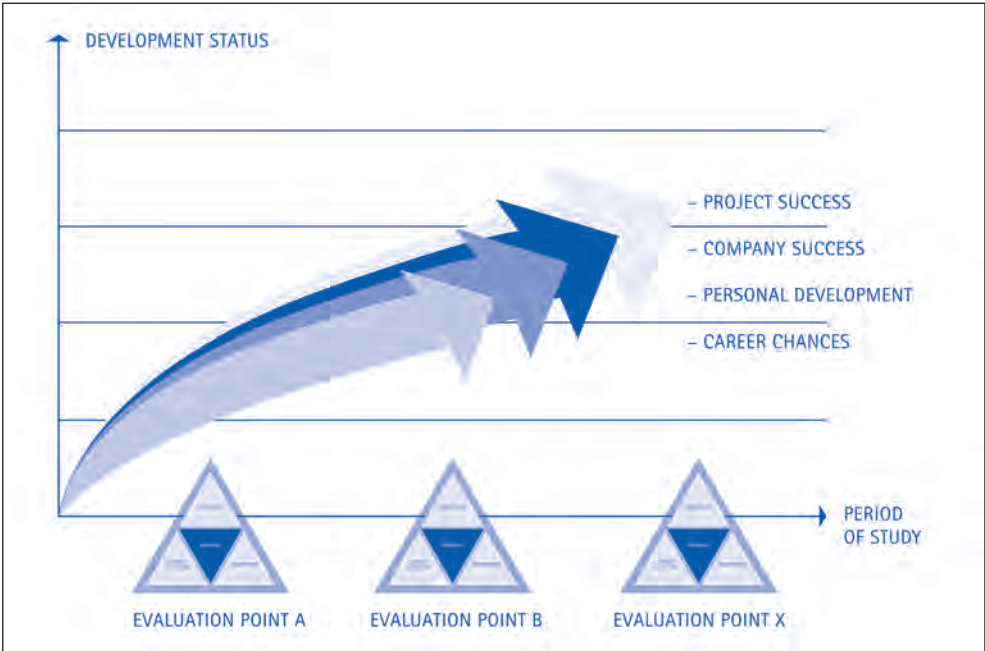
66 | Developments in the SIBE TGC (typical course).

The educational process that SIBE wishes to enable with its educational model can
be easily summarized: SIBE students work on an innovative real case project and

achieve an innovation. Through this process, they come to understand and deve-lop those implicit and explicit elements that belong to the creation of something new or better. That is, they grasp and develop those elements that are intrinsic to a creative personality; specifically, the entrepreneurial-specific expression of know-ledge, competency, temperament, identity, values and virtues. Innovations are the condition for long-term business success. Thus, students provide their communi-ties (i.e. their companies) with great value through their innovations. Students also meet with appreciation due to their performance. In the eyes of others, they are now seen as creative individuals; they have prestige, charisma and authority.

Ultimately, this project execution and achievement serves to develop comprehen-sive self-awareness and self-confidence.[84]This self-awareness gives people the confidence that their future does not depend on the benevolence of others. The formation of a creative personality ultimately means »the subjective and objective control [to] optimize« i.e. to develop something in oneself that enables »being able to influence one's own working and life situation for the good of one's own inte-rests.« (Baitsch & Frei, 1980, p. 30). The opportunities for project execution and achievement – as well as for comprehension and development – ideally provided by the SIBE curriculum, result in students who have confidence in themselves and the secure feeling that they can take care of themselves on their own, that they can succeed due to their own knowledge, skills and desires.
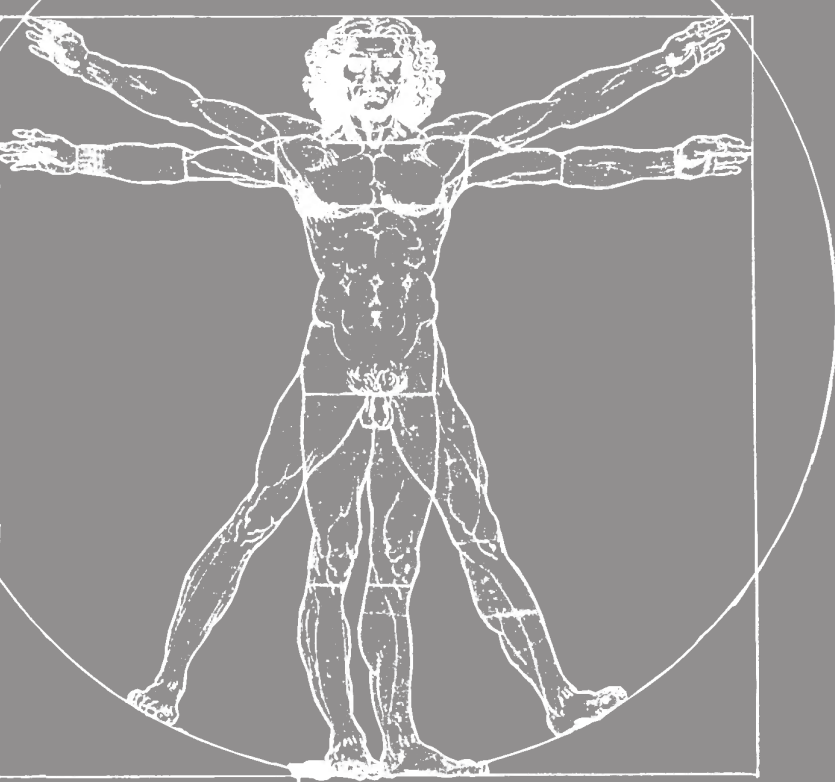
Additionally, we feel that this confidence and feeling of security should be used above all not only to achieve autonomy, but also to become independent in the legal sense – i.e. for taking the step of starting one's own company and own ven-tures. To sustain competitiveness, economies need not only capable employees, but capable entrepreneurs as well.

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84 Both the awareness and the development of this trust are supported by SIBE through various competency tests as well as by the mandatory target agreement that students be in the target area of KODE®X at the end of their program.

CONCLUSION
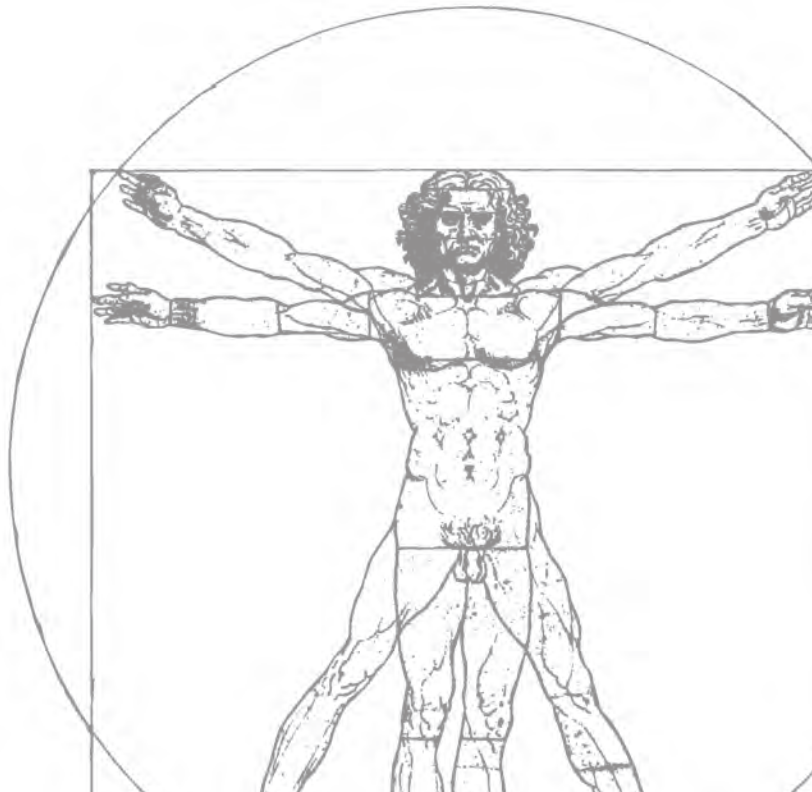
7   CONCLUSION

The issues we have addressed in this work are of the highest relevance for countries and economies, for businesses and individuals. For countries or economies, this means for example:

- That education in today's world cannot be limited to preparing people to reproduce knowledge in an examination. Education today must create conditions in which people can optimally acquire knowledge, and above all develop their competence and personality;
- That priority must be given to education – in the sense of holistic personality development – because the acquisition of knowledge and the development of competence, character and individuality is the necessary condition for innovation, which in turn is an essential condition for economic growth;
- That »entrepreneurship« must be developed in all educational institutions, in the sense that people must be provided with the knowledge, skills and desires to put their ideas into action;
- That optimal conditions are created in which both a country's own highly qualified and competent people as well as those from foreign countries feel comfortable;
- That in the case of such highly qualified and competent people, barriers are kept as low as possible (e.g. immigration and naturalization regulations, recognition of qualifications acquired abroad);
- That the immigration of highly qualified and competent foreigners can be quite an effective way to survive in the war for talent, but can be problematic in other ways – not least from an ethical standpoint.

For companies, this means for example:

- That sustainable success develops when one continuously implements innovation opportunities based on Schumpeter's ideas;
- That a balance between incremental and radical innovation must be sought;
- That innovation and talent management must be integrated with each other and established at the highest level;
- That this type of integrated innovation and talent management must be aligned both locally and globally;
- That a balance must be found between the Closed

Innovation and the Open Innovation paradigms;[85]
– That one cannot just rely on government-run education, but
   that education must also be privately organized, implemented
   and funded (by companies, organizations and individuals).

For individuals, this means for example:
– That education, in the sense of holistic personality development,
   is the most – possibly the only – important personal resource
   with any value on today's labor market and even more so,
   the only one that will have any value on tomorrow's;
– That education does not stop after obtaining formal qualifications; character
   and personality must be developed throughout a person's lifetime;
– That everyone must become an entrepreneur on their own account
   in one way or another; everyone must develop the knowledge, skills
   and desires to transform their ideas or those of others into reality;
– That a knowledge- and information-based economy requires an
   ever higher level of education as well as greater flexibility;
– That above all, the following is required of individuals: (Cf. BMBF 2009: 18)
– Personal responsibility in project-centered work organization
– The ability to cooperate in interdisciplinary and intercultural teams
– Self-organization in flexible business organizations
– Sustainable employability and lifelong learning skills for
   successfully handling discontinuous employment biographies.

We would again like to highlight the immense importance of education for the
lasting success of economies, businesses and individuals. To put it even more
drastically: lasting success is only possible through education, because education
is the Alpha for the Omega of »sustainability«.

– Only through education – in terms of knowledge
   acquisition, skills and personality development – can people
   develop into individuals with creative personality.
– Only through the knowledge, skill and desires of creative
   individuals can mere ideas be transformed into innovations.
– Only through innovation is healthy qualitative

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85 Both extremes – Closed Innovation and dependence on foreign ideas as the only source of innovation – can
    hinder the growth of a company. It is therefore important to find a balance between the opening of the
    innovation process and the maintenance of internal competencies that will also allow the company to renew
    and assert itself in the future by using its innovations to compete. Open Innovation is thus not a substitutive
    but a complementary approach to a company's own innovation activities.

and quantitative growth possible.
- Only through such growth does it become possible to secure and increase prosperity for all people (social, economic, ecological) in a sustainable manner.
- At this point, we come full circle. As long as we can and must think about sustainability – and thus about the well-being of future generations – we will need a continuous flow of innovative developments. Throughout the ages, these have had their origin in education. To maintain this evolutionary cycle of life, education must be consistently supplied with resources from previously achieved increases in prosperity at each new revolution of the circle.

The road to social, business as well as individual sustainability passes in our view via the formation of a creative personality. We refer to people as being/having creative personalities when,
- Based on their broad, deep education and great rationality, they prudently and conscientiously think through the possible complex consequences of their decisions and actions;
- They understand the formation of and work on their own selves and the development of their own deeply personal being as a life-long challenge as well as a freedom;
- They have the knowledge and expertise, strength and courage to formulate and achieve goals in situations that have no templates, no standards and no pre-formulated right or wrong.

Our educational ideal of the »creative individual« could be accused of exploiting people, because in this context people are considered simply as »carriers of knowledge and potential«, who are only valuable because they use their outstanding knowledge and impressive skills as tools for creating value. The suspicion may even arise that individuals are being reduced to objects who have an abundant quantity of the skills deemed necessary from an external point of view, who exceed all the requirements demanded from the outside. We assert very clearly here that every person is irreplaceable and immeasurable simply due to the dignity of being human. And we resist the idea that people must be »made fit for total integration into the system«. (Grigat 2010: 250) We also resist the idea of defining people solely due to their functionality for social purposes, i.e. with the implication that they do not exist as a subject beyond the current corporate or market-relevant

requirements.[86] As valuable as the contributions made to companies and firms by creative individuals are, these people always have the potential not only to think critically, but also to take action against abuses. The way out of social dead-ends of all kinds is not through individuals who withdraw from these impositions through depression, irony or passive resistance. None of these sub- and counter-currents »is a good model for the tactical practice of criticism that is searching for a different freedom than the marketplace«. (Bröckling 2007: 288)

The only way out of social impasses leads via those individuals who not only talk about alternatives but also make them happen! Our understanding is therefore that all creative individuals are characterized by the fact that they are free and freedom-loving individuals in the most positive sense. Not only do such creative personalities add value, but they are also unruly, they are full not just of quality, but also of the capacity for going against the grain. Their actions always reflect their values; their reflection always demonstrates sustainability. They are the ones, in the end, who actually use their knowledge, skill and desires to make real the vision of the »good life« for themselves and for others.

With »creative personality«, we want to present an educational goal that appears desirable to us – and we see this as one of our central missions as an educational institution. That we develop the ideal of »creative personality« here has a lot to do with the fact that we agree with the British writer Joseph Addison: »The things that are essential for gaining happiness in this life are to accomplish something, to love something and to hope for something.« In regard to the first of these aspects, a happy life with the accomplishment of something, it seems to us to certainly be very beneficial to have a creative personality and be a creative personality. We are also well aware that:

> *The first value associated with the term education is self-actualization. Education should not develop a person to achieve extrinsic goals – but to accomplish intrinsic goals he alone has discovered within himself. In Aristotelian terms, this is his »telos«. The discovery of one's personality »telos« and how to realize it can only be done oneself. (Joas 2012) A humanistic view of education is based on the ideal of autonomy. The ability to lead a life by one's own rules, freely and responsibly, is the primary goal of a humanistic education. (Nida-Rümelin 2013: 60)*
> We see the ideal of educating a creative character, however, as one if

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86 Criticism of the concept of competencies is often similar. What is often not taken into account is that skills are not only shown in professional situations but in principle, everywhere in life – as a responsible citizen, as part of a family, as a member of a group, on vacation... anywhere where people successfully face new challenges, they demonstrate competence.

not the condition for people to be able to formulate and achieve their own goals and, through this, to live in a self-determined manner, on their own initiative, independently and in a truly mature manner.

[We like to trust] someone who leads us. The roots of this certainly lie in childhood. The child wants to be cared for. If personal responsibility is taken from people by doing everything for them, they are infantilized to a certain extent. This is not to say anything against good social laws and social welfare, but only to indicate that giving too much can harm. In this case, we tend to do too much, because being cared for is comfortable and awakens childlike tendencies in us. And caring for someone gives the caregiver power due to the dependencies created by the situation. (Eibl-Eibesfeldt 1991: 36)

The formation of a creative personality is a long and arduous journey from self-imposed dependence to finding a meaning that is deeply one's own.

On the search for self, man is referred back to himself. He cannot wait for a guided tour of the world; he must set his own goals and be guided by reason as well as strive to fulfill his own ideals. On the search for meaning, man is more mature, more independent and freer; he learns to deal with the unpredictability of the universe and to reconcile himself with the idea that it is not aimed at him. In the end, this experience makes him a free spirit who does not lapse into nihilism or despair, but who is guided to the happiness of fulfillment and a successful life. (Kanitscheider 2008: 210-211.)

For us, creative personality is an expression of faith, hope and love for the freedom to use one's entire being, one's total knowledge, skills and desires to absorb and transform as much of the world as possible in order to gain as much experience and realize as much potential as possible. The development of creative personality is a comprehensive and holistic task, a task that can be completed neither by a single institution (e.g. a university) nor a single segment (e.g. the tertiary educational sector). »The formative power of education must thus prove itself over and over in early childhood education, in the schools, in vocational training, in adult and continuing education and in higher education.« (Tippelt 2013b: 239) The development of a creative personality further requires the synergistic interaction of all educational institutions – the formal (»teaching«) and the informal (»nurture«).

It is our empirically based conviction (e.g. Keim, Erpenbeck, Faix 2010) that in this overarching and holistic task of education, the SIBE educational model can make a fruitful contribution to the development of a creative personality.

EXKURS
»ABOUT STEINBEIS«

8   EXKURS »ABOUT STEINBEIS«

CONTENT

1   INTRODUCTION

The Steinbeis Network is active throughout the world. It focuses primarily on transferring the market-oriented, concrete knowledge and technology needed for business processes. It also promotes effective, efficient cooperation between science and industry by providing access to sources of knowledge and technology in accordance with market rules. Steinbeis Network clients thus obtain direct access to knowledge and expertise (cf. STW 2013B).

In 2012, the Steinbeis Network consisted of 918 companies. This includes all Steinbeis Enterprises (SEs), in which experts work – according to their discipline and professional assignment – in legally dependent Steinbeis Transfer Centers, Steinbeis Research and Innovation Centers, Steinbeis Consulting Centers and Steinbeis Transfer Institutes, or in legally independent companies. Furthermore, the Network also includes franchise businesses and minority interests. In 2012, over 1,500 employees and approximately 3,700 freelancers worked for it and some 750 professors were active in Steinbeis companies. Through services including research and development, consulting, training and further education as well as analyses and expertise, Steinbeis companies achieved a total turnover of 141 million euros (cf. STW 2013C).

We would now like to present the Steinbeis Network as well as explain the relationship between the Steinbeis Foundation, the Steinbeis University Berlin and the Steinbeis School of International Business and Entrepreneurship.

2   OUR NAMESAKE »FERDINAND VON STEINBEIS«

Today, the Steinbeis Foundation is actively involved in knowledge and technology transfer throughout the world. Our namesake Ferdinand von Steinbeis laid the foundation for this over a century ago.
In the second half of the 19th century, Ferdinand Steinbeis (1807-1893) founded the modern promotion of trade and commerce in Wuerttemberg. The industrial structure that developed in Wuerttemberg – a resource-scarce and poor area at the time – owes its success not least to Steinbeis's progressive economic development policies.
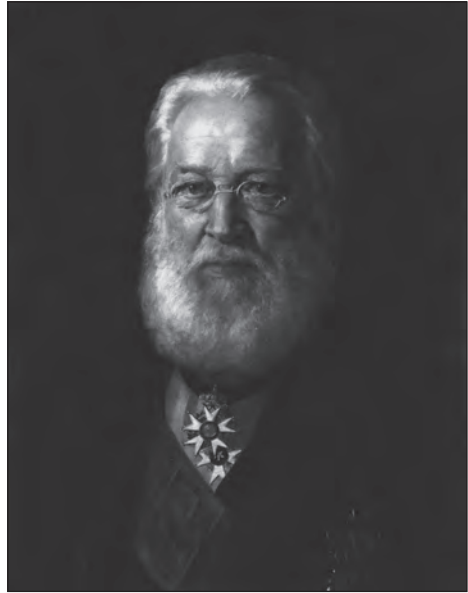
67 │ Ferdinand von Steinbeis (1807–1893).

In 1848, Steinbeis was appointed director of the Center for Trade and Industry, later called the Regional Trade Office; he was its President from 1855 to 1880. As holder of these posts, Steinbeis was able to put into practice his then revolutionary ideas. He initiated the idea of »technology transfer via people«, for example, seeking out foreign professionals from Great Britain and Ireland and bringing them to Germany while also sending capable engineers (e.g. Gottlieb Daimler) to these countries. These measures served the aim of utilizing successful technologies and methods from other countries in Germany. Steinbeis implemented this by testing the newly gained knowledge and expertise in individual companies in the Kingdom of Wuerttemberg and making it available to the entire economy via apprenticeship workshops based on the dual work-study principle.

These production improvements resulted in high-quality, competitive products. To expand the markets for these products, Steinbeis arranged for them to be presented at international exhibitions, reformed tariffs and established the Wuerttemberg trading company. In addition, he promoted the development of sample stock that included various materials, tools, fabric patterns, etc. so that domestic traders could acquaint themselves with foreign products and vice versa. After his death, these and many other activities meant that Steinbeis became known as an »architect of modern commercial promotion«. Important figures in Wuerttemberg's

economic history (especially Gottlieb Daimler) as well as well-known companies also owe their success to Steinbeis's support, e.g. Rund- und Strickmaschinen-Nadelfabrik Th. Groz (Ebingen), Wuerttembergische Metallwarenfabrik (Geislingen), Maschinenfabrik Schuler (Göppingen), Gebr. Märklin & Cie. (Göppingen), Matthias Hohner (Trossingen), Magirus Deutz (Ulm), Tool Factory C. & F. Fine (Stuttgart) and Maschinenfabrik Voith (Heidenheim). In recognition of his work Steinbeis was elevated to the nobility. (cf. Alberti 2007 and 2008)

3   THE STEINBEIS FOUNDATION FOR ECONOMIC DEVELOPMENT (STW)

Ferdinand von Steinbeis set up the »Steinbeis Foundation« in 1873. To supplement the trade schools he had already established, he intended this foundation to promote commercial training and support for young people based on the principle of »dual education«. Steinbeis was convinced that comprehensive and sustainable professional training could only take place through the systematic integration of theoretical knowledge and practical skills. He obtained funding for the foundation from well-known industrialists and used a large part of its income to develop commercial training.

Due to the inflation of the 1920s, the Steinbeis Foundation's capital shrank so much that it largely ceased operations in 1923. Eventually, the foundation was formally dissolved in 1971 to prevent any confusion with the new foundation of the same name.

The idea behind the creation of the new foundation was as follows: in today's intensified and international competition, manufacturers as well as service-providers must react rapidly to market changes as well as quickly providing products or services with unique selling propositions that have been developed, produced and distributed as efficiently as possible, and that earn high revenues. The national government must also help the economy, among other things by enabling Ferdinand von Steinbeis's practice of »transfer via people«.

> *The aphorism by Johann Wolfgang von Goethe »It is not enough to know, we must also apply; it is not enough to want, we must also act,« aptly describes the core problem of knowledge and technology transfer today. In particular, it continues to be problematic to implement research results and innovations made at government-funded know-*

> *ledge bases – universities, colleges and research institutions – into marketable products and services in a timely manner [...] (Friedrichs 2008: 9).*

To solve this problem, the State of Baden-Wuerttemberg created an institution that would enable continuous transfer in both directions. On the one hand, the knowledge and experience created primarily by teachers and researchers at universities, colleges and research institutions – which often remain unused in the economic sense – should be made available to companies, both indirectly through employee training and directly through concrete solutions to problems (consulting, analysis, development). On the other hand, companies with practical experience should give new impetus to research and teaching, thus creating ongoing transfer and dialog between industry and science. Not least because of its obviously greater flexibility, the task of knowledge and technology transfer should not be integrated into a state-sponsored teaching institution, but in an independent foundation. The Steinbeis Foundation for Economic Promotion (STW) was founded to do just this.

The new Steinbeis Foundation for Economic Promotion (STW) was based on an idea of Baden-Wuerttemberg's Ministry Head Herbert Hochstetter of establishing a central service facility for small and medium-sized enterprises (SMEs). As a result of his previous responsibilities in the Baden-Wuerttemberg Ministry of Education and Cultural Affairs, Hochstetter was very familiar with the excellence of that state's engineering universities and colleges. After joining the Ministry of Economic Affairs in 1967, he wanted to make the outstanding expertise and teaching in these institutions available to the state's SMEs and thus exploit their potential multiple times. The idea was to establish technical advisory services at engineering schools as a new form of business development. The administrative body responsible for this initiative should not be the state, but an independent foundation – with Ferdinand von Steinbeis as its namesake.

As early as 1969, and at the suggestion of the Ministry of Economy, trial Technical Consulting Services (TSCs) were set up at five of the state's engineering schools. Following a positive response from industry, seven further TSCs were set up by 1971. The sponsorship of the TSCs was not intended to be incorporated into the engineering schools and technical colleges because certain legal questions concerning secondary employment would have otherwise been unresolvable. In addition, greater flexibility was also expected because the services were not integrated in the organization of a state institution whose first purpose was teaching. Therefore, all TSCs were incorporated into the Steinbeis Foundation on January 1, 1972 (cf. Friedrichs 2008: 62f.).

Originally, the Steinbeis Foundation was oriented to technology. In a 1982 ministerial decision to form a »Research Committee Baden-Wuerttemberg«, which was also relevant to the Steinbeis Foundation, mention was still exclusively made of »technology transfer«:

> *The transfer of technology is intended to make technical knowledge and skills from universities, research institutes and technology-oriented enterprises so accessible to potential users – particularly those in manufacturing companies – that they can be quickly and creatively transformed into as many new products and production techniques as possible, in order to achieve a competitive advantage. (From the Ministerial Council decision dated 05/17/1982 concerning the formation of a »Research Commission Baden-Wuerttemberg«, cited in Frederick 2008: 26.)*

However, since the late 1980s, the market has increasingly demanded solutions that go beyond the technological. From the early 1990s on, the Steinbeis Foundation has responded to this by expanding its purpose from transferring technology to transferring knowledge as well. In other words, the Steinbeis Foundation does not see its purpose solely in promoting technological innovation, but all kinds of innovations that follow Schumpeter's philosophy, namely:

- Development and introduction of new products and development and deployment of new services
- Development and introduction of new production methods and business processes
- Development of new markets
- Development of new purchasing markets
- Development and introduction of new organizational structures.

The Steinbeis Foundation has evolved continuously since its inception, both organizationally, through the ever-growing network under the aegis of the foundation, and in terms of content through clearer differentiation in its various fields.
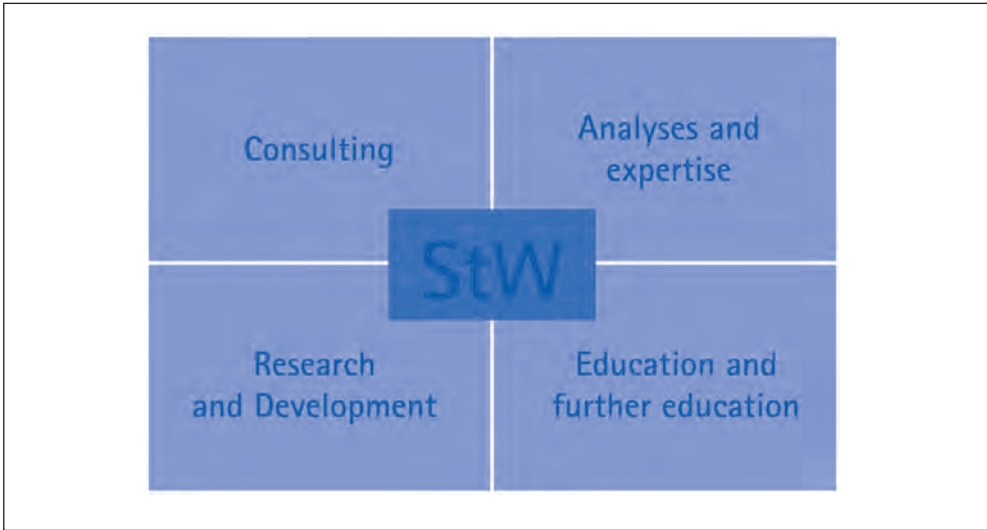
68 | Portfolio of the various fields of the Steinbeis Foundation for Economic Promotion.

As different as these fields may seem, they all reflect the purpose of the Steinbeis Foundation: knowledge and technology transfer, the networking of science and industry, and the implementation of innovative potential into practice (cf. Friedrichs 2008: 5).

3.1 THE STRUCTURE OF THE STEINBEIS NETWORK

In 1983, Johann Löhn was appointed Government Commissioner for Technology Transfer of the State of Baden-Wuerttemberg as well as Chairman of the Board of the Steinbeis Foundation.

69 | Prof. Dr. Dr. h.c. mult. Johann Löhn.

70 | Prof. Dr. Michael Auer.

Johann Löhn is now the Honorary Trustee of the Steinbeis Foundation and President of the Steinbeis University Berlin. In 2012, Michael Auer took over the chairmanship of the Steinbeis Foundation.

Through the new development and restructuring of the foundation initiated by Löhn in the years following 1983, the Steinbeis Foundation has come to have the following form (cf. for the following Friedrichs 2008: 44f.): the exclusive, direct pursuit of not-for-profit purposes. The income from its endowment capital flows into ideal technology transfer such as lectures, publications, etc. The Steinbeis Foundation's purpose has been essentially reduced to operating projects in the field of concrete knowledge transfer. Its commercial undertakings only include investment management and, to a lesser extent, projects related to pre-competitive transfer. The foundation is the sole limited partner of the Steinbeis GmbH & Co. KG for Technology Transfer (StC) and the sole shareholder of the Steinbeis Verwaltungs-GmbH (StG), and assumes personal liability and management for the StC.

The foundation handles all of its economic transfer activities through the StC. The business purpose of the StC is technology and knowledge transfer. It fulfills this essentially through projects and the production and distribution of its own products, insofar as they are based on developments of the foundation or of the companies with which the foundation is directly or indirectly involved. In addition, the StC's

purpose also includes management consulting and tasks related to the governance of its associated companies. With few exceptions, Steinbeis Foundation employees all belong to the StC.

Through its restructuring, the »new« Steinbeis Foundation and its companies have more freedom of action as well as opportunities to develop new activities. As a non-profit holding company, the original StW continues to exemplify goodwill and solidity. The StC is a private, market-oriented service company – especially towards customers and competitors. It can also set up subsidiaries, for example, as spin-offs from the transfer centers whose aim is to commercialize proprietary products, or as technology-oriented business start-ups or consolidations.

Steinbeis Foundation StW

Steinbeis GmbH & Co. KG for Technology Transfer (StC)

| Steinbeis transfer centers | Steinbeis research and development centers | Steinbeis consulting centers | Steinbeis University Berlin | Steinbeis holdings | Steinbeis real estate |
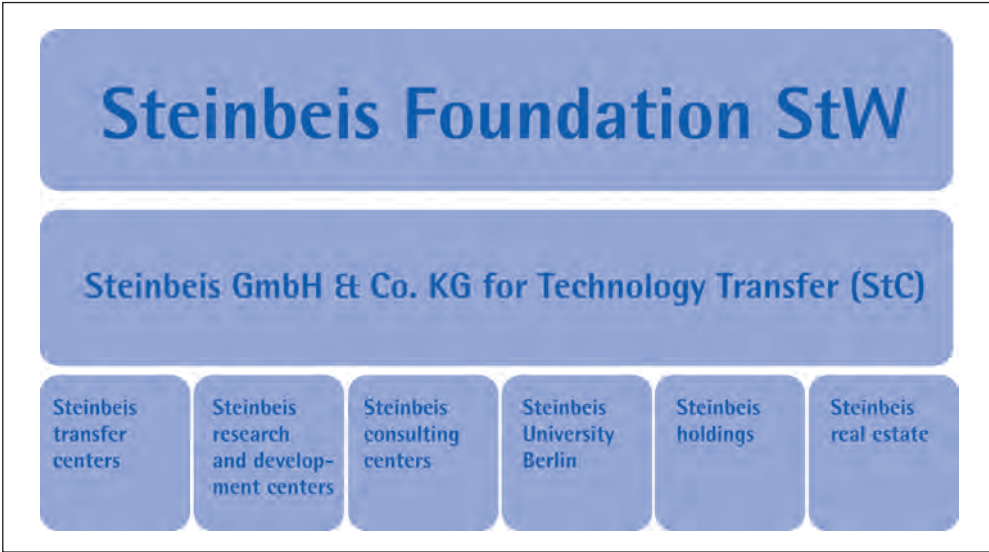
71 | The organization of the Steinbeis Foundation (simplified).

3.2   STRUCTURAL PRINCIPLES OF THE STEINBEIS NETWORK

One fundamental principle of today's Steinbeis Network is the »decentralized central management« (DCM) method. The decentralized structure of the Steinbeis Foundation is evidenced by the so-called Steinbeis Enterprises (SEs).
Originally, the decentralized units within the Steinbeis Network were called »Transfer Centers (TCs)«; today they are called »Steinbeis Transfer Centers (STCs)«. Due to the expansion from technology transfer to comprehensive knowledge and technology transfer, there are now consulting, research and development, training and continuing education centers as well. Some of these centers have contractu-

ally close ties with each other, so that we speak here of networks, e.g. of Steinbeis Transfer Institutes (STIs). STCs and the other centers, including the associations, are grouped under the umbrella term Steinbeis Enterprises (SEs).

The SEs are the operational units for technology and knowledge transfer. The focus here is »transfer via people«: the SE director or its employees transfer knowledge to their customers through business practices. In general, SE directors are fully employed as professors or researchers at a knowledge base (universities, colleges or vocational colleges). To fulfill its purpose, Steinbeis uses the existing infrastructure, i.e. the knowledge base infrastructure, which necessitates framework agreements. In Baden-Wuerttemberg, for example, the Steinbeis Foundation headquarters has concluded such agreements for their SEs at the knowledge bases with the Ministry of Science, Research and Art.

Today, the concept of the »transfer entrepreneur« has also been successfully extended to external knowledge bases in and outside of Baden-Wuerttemberg such as universities, research institutions and companies, as well as to internal sources such as Steinbeis University.

The SEs set prices and carry out their jobs independently, are responsible for generating their own profits and sometimes even decide on investments and liquidations. The Steinbeis Enterprises can thus be understood as a »company within a company«. Against the background of the foundation's purpose of »transfer«, the second method, which complements the DCM, is »Transfer Entrepreneurship« (Auer 2007: 49f; cf. also Walter, Auer 2009).

Operational responsibility lies with the director of the Steinbeis Enterprise (SE), i.e. with the »transfer entrepreneur«. He makes autonomous decisions in his SE within the central formal and normative framework valid for all SEs. The SE director has the entrepreneurial freedom to make decisions for his SE companies. It is his responsibility to determine offers, terms, costs, employees, marketing of services, fee arrangements, salaries, depreciation and amortization through business investments and to ensure the sustainability of the SE. In external relationships, he and his SE act as suppliers in the operational relationship with the customer (cf. Friedrichs 2008: 14).

An essential task of Steinbeis headquarters is to develop the »Steinbeis« brand as well as to maintain the stable and secure central framework of the Steinbeis Network. As parts of the whole – i.e. the Steinbeis Network – individual SEs benefit from the brand value and framework conditions of the network. In return, the SE contributes to Steinbeis headquarters by paying a sales-based fee (cf. Friedrichs 2008: 16).

Transfer entrepreneurs organize their own »Transfer Centers«, which are part of the Steinbeis company. The framework of their organizations gives them legal certainty on the one hand; on the other hand, they are part of a larger whole and can thus gain from the synergies and goodwill of the Steinbeis brand (Friedrichs 2008: 6f.).

The central structure of the Steinbeis Foundation is reflected in the connection of decentralized units to the Steinbeis company as a whole. The formal connection exists due to the various director and partnership agreements; the informal connection through the alignment of the decentralized units and their actions to joint Steinbeis principles (values, purposes, goals, rules and standards).

The central Steinbeis units maintain and shape the stable, secure, centralized framework of the system. Leadership is based on the self-management method espoused by long-standing Chairman of the Steinbeis Foundation Board, Johann Löhn:

»First of all, values, then goals, then self-discipline, then success.« This is the only way that the natural and positive tension decisive for the success of Steinbeis, i.e. »centralized-decentralized« can be managed with great efficiency. Steinbeis lives due to its flat hierarchy and the great freedom of the transfer entrepreneurs. One of [Steinbeis's] greatest overall corporate responsibilities is centrally defining the limits to this freedom so that although present, these limits are not perceived by transfer entrepreneurs as restrictive for business development (Friedrichs 2008: 6f.).

The Steinbeis headquarters define a formal framework. In its formal external relationship, the headquarters together with the SE, is responsible to its customers. The director of the SE is formally only responsible for the internal relationship with headquarters. The center also provides services to the SE [e.g. classical functions in the areas of finance, accounting and human resources as well as consulting and assistance in SE establishment and management] (ibid. 15).

Above all, the following convictions explain why the Steinbeis Foundation is organized according to the two complementary methods of »decentralized central management« and »transfer entrepreneurship«:

— Thanks to the variety and diversity of the SEs, they can provide help to small and medium-sized enterprises by functioning as contact points for the clarification of technical or managerial questions.

— Success requires a business concept that can be practically implemented and is oriented towards market needs. The SEs offer services that are accepted by the market – i.e. sustainable, successful services that customers can utilize to their advantage. The principle behind an SE is that it exists only as long as its services make it economically viable. SEs are not kept alive artificially and no SE director must keep his SE running longer than desired. They can be simply and unbureaucratically closed down. Based on the stable success model, continuous innovation is possible and necessary without compromising the overall system per se. (cf. Friedrichs 2008: 13f.)

— These two complementary methods make the highly complex Steinbeis network a »lean enterprise«:

The basic idea behind lean concepts is the creation of units that are both manageable and responsible for themselves. In semi-autonomous work groups, all responsibility lies directly with the employees and it may – depending on the size of the company – continue through to semi-autonomous business units. The goal of this comprehensive step is the creation of units that ultimately bear full responsibility for a product/product line or a service/service range. [...] Under a »corporate umbrella organization«, these semi-autonomous business units operate independently and must successfully compete on the market to justify their existence (Faix, Buchwald, Wetzler 1994: 151).

3.3   SELF–ORGANIZED, AUTONOMOUS INTRAPRENEURSHIP

Application of the »Distributed Central Management« and »Transfer Entrepreneurship« methods requires an organization based on self-organization and self-responsibility (cf. Faix/ Kurz/ Wichert 1995: 14f.). »Everyone is his own Director General,« is an aphorism expressed by Johann Löhn that aptly summarizes the work paradigm of the Steinbeis Network. This paradigm means that each employee operates in a self-organized manner based on the idea: »This is my business«. The opposite of self-organized, autonomous action is the handling of concrete problems using predetermined solutions (cf. Erpenbeck, Sauter 2007). Self-organized,

autonomous action is thus action initiated and guided by abstraction in the form of purposes and values that are common to a company or organization. In other words: »First of all, values, then goals, then self-discipline, then success« – Johann Löhn's self-management method (the »Löhn method«), which he used as a template to redesign the Steinbeis Foundation and which still characterizes all of the network's businesses and enterprises.

The Steinbeis principle of transfer entrepreneurship can be concretely summarized as follows:

— Internalization of the common set of values,
   purposes, goals, rules and standards
— Self-organized action based on this common canon
— The core of self-organized action should be transforming new knowledge
   or knowledge that has not yet been applied – into concrete answers
   to new questions – or ones that may not have been asked yet!

In short, the actions of Steinbeis partners are characterized by the autonomous creation of self-organized knowledge based on shared values, purposes and goals as well as the assurance that this knowledge becomes self-organized reality, especially in situations that have no matrix, no standard and no right or wrong.

3.4 VALUES, PURPOSES AND GOALS OF THE STEINBEIS NETWORK

In the Steinbeis Foundation, the core values of trust, tolerance, sustainability, consistency and the guarantee of freedom for the personal and professional development of its employees are understood as universally valid decision-making criteria (Friedrichs 2008: 24).

The Steinbeis Foundation and all of its parts wish to play a central role in the knowledge society and help shape it. The purpose of the Steinbeis Foundation is derived from the above values. It thus understands the basis for all of its actions and its existence as follows: »The purpose of the foundation is to provide scientific findings [...] to the country's entire business community« (Steinbeis Foundation 1983: § 2, 1). In other words, the foundation's purpose is knowledge and technology transfer.[87]

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87 The colloquial meaning of »transfer« is the transport of a commodity.

Originally, technology transfer was only understood as the actual brin-ging together of science and industry for the purpose of the concrete application of an existing technology. Today, the term must be more broadly understood because knowledge, its half-life and the nature of technologies and applications have changed.
Classical technology transfer must be extended to include additional services. Knowledge transfer must also be given new emphasis and a new role due to the necessity of lifelong learning. Briefly, it must involve the efficient and effective application of existing or newly crea-ted knowledge in concrete project work via an independent service process. The project work must be based on research and develop-ment, consulting, and training and professional development (Fried-richs 2008: 6).

In short, the purpose of the Steinbeis Foundation is to transfer scientific knowledge to commercial fields and contexts, primarily so that they can cope with new entre-preneurial situations.

Competitive knowledge and technology transfer is the interface or pi-votal point between pre-competitive research on the one hand and competitive demand from the economy for development results, as well as specific applications, on the other. Today, this transfer plays an even more significant role because international competitiveness requires that the potential created by science is effectively and effici-ently transformed into an economically recognized application. How should this form of transfer be shaped? To function, transfer requires a clear distinction between pre-competitive research and concrete transfer. Pre-competitive research must be supported and subsidized by the government; concrete transfer, however, serves the economy because it translates research results into competitive products. Thus, research funding cannot only depend on whether a researcher has economic benefit in mind. This should not be his original intention. Rather, it is the task of the transfer. This awareness is a prerequisite for the success of both pre-competitive research as well as concrete transfer of synergies. Any model that guarantees this transfer from its source to the economy without subsidies – i.e. research institutions and universities – must act according to market criteria and based on fair rules. The government's job is to guarantee these fair rules (Löhn, 2013, quoted in Steinbeis Foundation 2013A).

As a result of the establishment of Steinbeis University in particular, knowledge transfer now takes place in two directions: scientific and theoretical knowledge becomes entrepreneurial reality and practical entrepreneurial knowledge is included in the scientific discourse.

Creating networks in the sciences is considered an essential, even key criterion for promoting German research and knowledge transfer. The Steinbeis Network has lived this concept of networking for nearly 30 years. The utilization of interdisciplinary expertise that reaches far beyond subject boundaries creates synergies in the research landscape and yields innovations. Naturally, the economy benefits indirectly through the pre-competitive transfer as well as directly through the concrete competitive transfer. In addition, the sources of this knowledge also benefit, not only by gains in their reputation, but also economically (Löhn, 2013, quoted in Steinbeis Foundation 2013A).

The following Steinbeis Foundation goals are derived from its purpose of »transfer«:

SELF-DETERMINATION IN FINANCIAL MATTERS AS WELL AS IN CONTENT:

Steinbeis strives for self-determination, both financially and in content. The former is achieved through entrepreneurial action, which ensures the self-financing of our projects. To us, technical and substantive independence means working with a network of qualified professionals. Steinbeis supports and encourages its employees and thus ensures that current knowledge on nearly every technology and management field is always available (Friedrichs 2008: 24f.).

EXCEEDING EXPECTATIONS:

To us, having the advantage means exceeding expectations in all areas, especially in technology, and recognizing and implementing trends and innovations earlier than the market. To do this, we rely on relevant and competent resources ranging from the university and private sectors to the political and public sectors. By working with these sources, our qualified staff drive comprehensive excellence in technology and management. We measure this excellence and our lead based on the demand for our products (Friedrichs 2008: 24f.).

PROVIDING BENEFIT:

We understand benefit, our central corporate objective, to be the added value offered by the work of Steinbeis. Benefit should extend to all areas and be open   to all target groups. Our clients have access to current knowledge and skills that were previously unavailable to them for various reasons. Both our sources and employees benefit from the cooperation and supplementation of their own knowledge. This helps us expand and maintain our own excellence – added value that is reflected not least in the quality of our products (Friedrichs 2008: 24f.).

The strategy for achieving these goals and objectives is thus (see below Steinbeis Network, 2010):

UTILIZATION OF RESEARCH RESULTS

The Steinbeis Network exploits the potential of research institutions, particularly universities, and implements scientific knowledge directly and indirectly into professional business solutions (STW 2013b).

AVAILABILITY OF KNOWLEDGE

The Steinbeis Network offers its customers and partners opportunities and solutions. Its transfer-oriented service offers are flexibly tailored to structural and technological changes as well as to market requirements. Knowledge is available from Steinbeis's own publications, events and particularly the Steinbeis companies. Its transfer potential is continuously supplemented by the creation of new Steinbeis Enterprises (STW 2013b).

BROADENING COMPETENCIES

Steinbeis offers consulting, education and training services as well as in the area of research and development, in addition to expert opinions and expertise. Knowledge and technologies successfully flow into recognized applications via these services and expand our customers' competencies (STW 2013b).

DECENTRALIZED ACTIVITY

The Steinbeis network is decentrally organized and characterized by flat hierarchies. Each Steinbeis company operates as a »business in the Steinbeis company«. Within the central Steinbeis framework, the directors of these companies act independently, autonomously and in direct and confidential contact with their customers (STW 2013b).

PRIVATE-SECTOR SOLUTIONS TO GOVERNMENT TASKS

Steinbeis partners with the public sector to complete tasks and provide services (STW 2013b).

The Steinbeis Foundation – however complex and flexible its organization may seem – as well as the units of which it is comprised, all follow the same principles. Just as two mirrors facing each other infinitely reflect and miniaturize the captured image, the principles of the Steinbeis Foundation are reflected in the Steinbeis University and even in the institutes of which the SUB »is comprised«.

An essential aspect of the Steinbeis network consists of intrapreneurship; of the autonomy of the parts that make up the network.

An association is far from being a network and no one works with added value in a network node if he does not derive additional benefit from it. The design of the Steinbeis company as a whole is not – and will never be – geared towards the creation of a network. That would be unsuccessful for various reasons. A major one of these is the success factor ‚transfer entrepreneur'. Ultimately, it comes down to his success, which must be centrally and capably used to benefit the whole. Initially, he is less interested in the success of another enterprise. However, he is quite anxious to derive benefit from the Steinbeis umbrella brand. Johann Löhn always formulated the core problem as an opportunity: »If we make sure that everyone thinks about himself, we can guarantee that no one will be forgotten«. The key is thus not the development of an overarching network but the emergence of small functional networks within the community. The central task is to establish appropriate SEs and suitably mediate the initial contact among them. Examples of such SEs might be those that complement each other due to their content or ones that serve different regions with similar content (Friedrichs 2008: 21).

Analogous to the personality and character of an individual, the same is true for the personality and character of a company (in the following, cf. above all Mergenthaler 2008): personality and character are not biological programs, but social ones. They are never a solitary island, but always an eddy in the social current. Society thus shapes the psychological experience and organizational patterns of consciousness. The more differentiated and complex a society, the more differentiated and complex are the relationships and situations that individuals as well as companies find themselves in. Individuals and companies respond to the increasing complexity of the external environment by developing an increasingly complex personality and character; handling life is only possible with a »broken head« (Georges Bataille).

> *This [world] no longer fits into a single head. It has become too complex and diverse. Anyone who still assumes it to be a one single [world] is forced to reduce it and constantly deny his perceptions. Therefore, an open relationship with the world requires an ‚open head'. What Hegel said about the heart now also applies. One can only make a man's heart bigger by tearing it asunder. The fate of the head does not permanently mean brain damage. One can learn to live with a broken head, just as one previously lived with a broken heart. For the place that breaks ‚sees', it perceives, it ‚thinks' (Kamper 2000: 95).*

The Steinbeis Enterprises form, as it were, these seeing, perceiving and thinking breaking points, which open up wherever the market offers an opportunity and close again once the occasion has passed.

4 THE STEINBEIS UNIVERSITY BERLIN (SUB)

In 1998, under the umbrella of the Steinbeis Foundation, the Steinbeis University Berlin (SUB) was established as a state-approved, private university.[88] In terms of the number of enrolled students, it is now the largest private university in Germany that is entitled to confer doctoral degrees, a status it has held since 2003.[89] The university's main focus is on the development of junior executives.

Just like the Steinbeis Foundation, the SUB is organized according to the principles of transfer entrepreneurship and decentralized central management. The SUB consists of among other things, of decentralized Steinbeis companies that operate in accordance with the profit-center or business-unit concept. The decentralized Steinbeis Enterprises – in the case of SUB the so-called »Steinbeis Transfer Institutes« (STIs) – thus form the operational part of the SUB. Although they are all autonomous and economically independent, they act on behalf of the SUB.

Courses are conducted in Steinbeis Transfer Institutes, the legally non-autonomous units of the SUB. The President appoints the director of each STI, who oversees all business of the Institute and is bound by the policies of the President. To support the interests of the public as well as to advise and assist, the STI may form an advisory board (SUB-GO: §3).

Thus, the SUB consists principally of two elements: the SUB headquarters and the decentralized STI. The SUB headquarters assumes responsibility for various STI tasks such as external accounting. In addition, the SUB headquarters monitors compliance with certain frameworks by the STI. STIs pay a turnover-based fee to SUB headquarters for its services.

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88 In Germany, the term ‚private university' or ‚private college' is used for institutes of higher education that are in private ownership; the term ‚university' is usually reserved for state universities.

89 In Germany, the right to confer doctorates is seldom awarded to state-accredited private universities; of a total of 96 such institutions, only nine have this privilege.
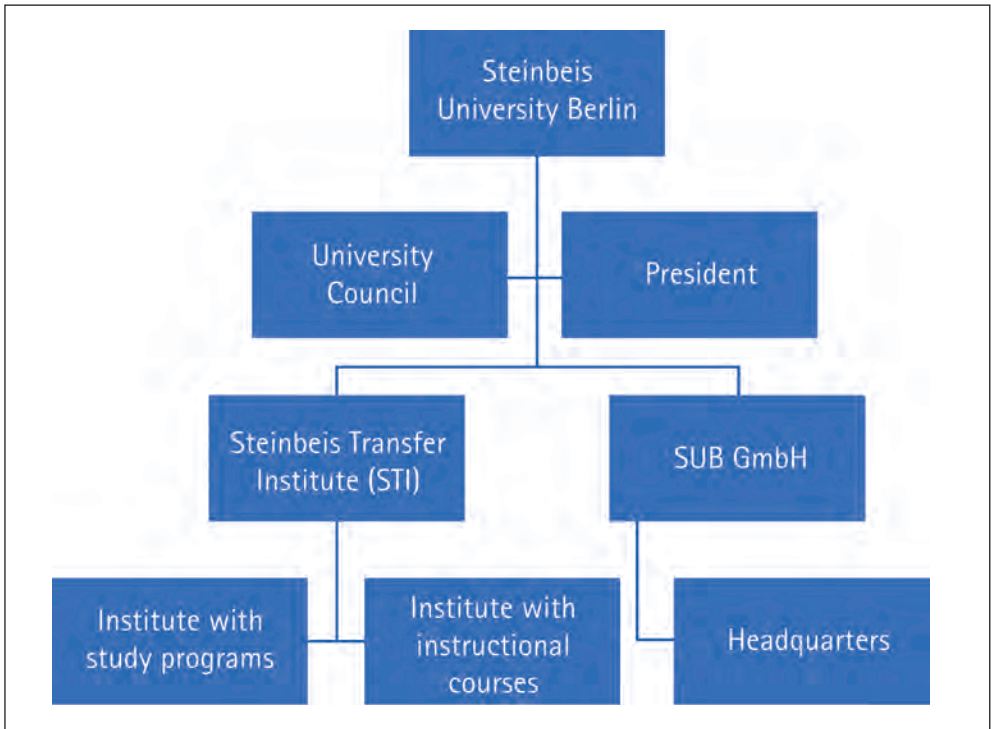
The focus of the SUB is on networks of institutes – the so-called »Schools«[90] – which are themselves comprised of several STIs.[91] The SUB Schools are:

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90 Generally, the following must be noted about institutions considered to be »Business Schools«. In contrast to departments of economics in Germany, Business Schools are (semi-) autonomous institutions of higher education with their own legal capacity and budgetary sovereignty, even though they often remain connected to a university.

91 Although the seat of the Steinbeis University is Berlin, Steinbeis Institutes are located throughout Germany. Because the »mother« of the SUB, the Steinbeis Foundation, has its roots in Baden-Wuerttemberg, it is not surprising that many Steinbeis Enterprises and indeed many Steinbeis Transfer Institutes of the SUB are based there.
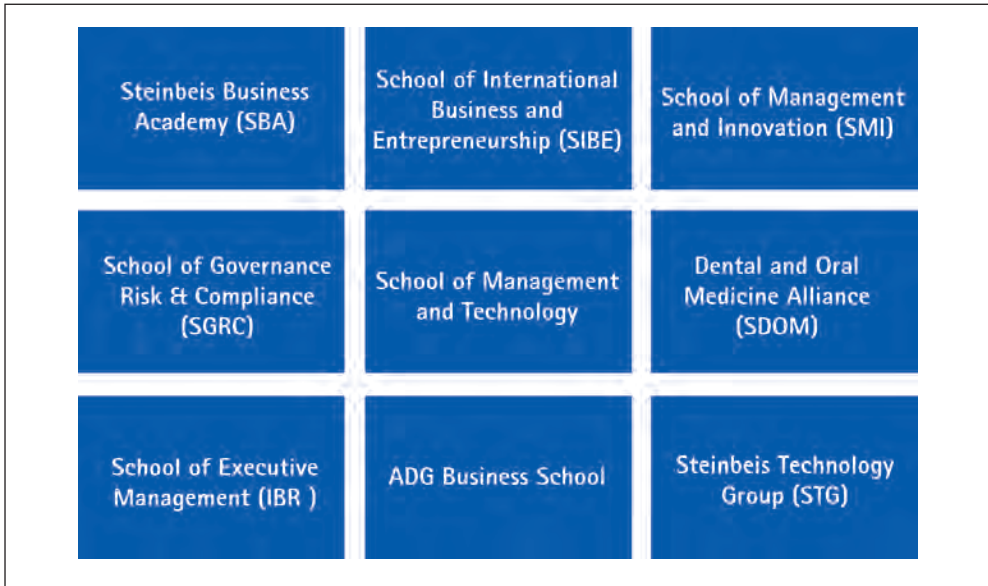
Above all, the SUB headquarters organizes and guarantees the formal framework within which the decentralized member units act.

> *Our network of more than 100 Transfer Institutes offers a wide ran-*
> *ge of customized, specialized programs and courses for the practical*
> *training of specialists and executives. Central to our philosophy is the*
> *organization of the institutes as autonomous »enterprises within the*
> *university enterprise« (SUB 2009).*

The relationship of the institutes, i.e. networks of institutes, to the Steinbeis Foundation and to the Steinbeis University will now be illustrated using the example of the School of International Business and Entrepreneurship (SIBE). The Steinbeis University is a transfer enterprise in the Steinbeis Foundation network. SIBE, on the other hand, is itself a transfer enterprise of the Steinbeis University and as such, organized as a profit center. In short, this means that SIBE is an economically independent, decentralized unit of the Steinbeis University.

Just as the structural elements of the Steinbeis Network are reflected by the SUB, the purposes and goals of the Steinbeis Network are also seen in the essence and actions of the SUB and all units that comprise this network. The purpose of »technology and knowledge transfer« is illustrated particularly by the unique feature of

the SUB: the so-called »Talent Growth Curriculum«. The foundation objectives are as follows:

— Self-determination in financial matters as well as in content. A special feature – even in private universities – is that without exception, all undertakings and activities of the SUB are privately financed. This financial independence also gives the educational facilities the freedom, for example, to organize themselves and develop their content as desired.[92]
— Exceeding expectations. The inevitable result of the SUB's special financing structure is that the SUB is committed to fulfilling and even exceeding the expectations of its »buyers« (enterprises, organizations, students etc.) in terms of the educational opportunities offered.
— Providing benefit. Against the background of the goal of »self-determination« and the concomitant principle of independence from government funds, it is not surprising that the »SUB enterprise« and its activities, i.e. the essence and actions of the SUB, differ little from those of private sector enterprises. Specifically, at the SUB and all its institutions, including SIBE, a clear focus lies on providing economic benefit.

5 THE SCHOOL OF INTERNATIONAL BUSINESS AND ENTREPRENEURSHIP (SIBE)

As discussed in the previous chapter, the Steinbeis University – in accordance with the structural principle of decentralized central management – consists both of central units (the SUB headquarters) as well as decentralized units (the SUB institutes). It was discussed above that these institutes are in turn grouped into networks of institutes – the so-called schools. This also includes the School of International Business and Entrepreneurship (SIBE).

With currently over 1,000 students in Masters' programs (as of August 2013), the School of International Business and Entrepreneurship (SIBE) of the Steinbeis University Berlin is one of Germany's largest private academic postgraduate Business Schools. Since 1994, over 2600 graduates have successfully completed SIBE Masters' programs. Since then, over 350 companies have cooperated with

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92 Of course, programs of study that lead to nationally recognized qualifications are subject to certain governmental framework conditions and must comply with these.

SIBE. The SIBE curriculum focuses on postgraduate courses in management and law. Both »open enrollment« as well as corporate programs are offered. SIBE offers these management and law programs in Germany as well as in cooperation with renowned universities in other countries (Brazil, China, India, Poland, Switzerland and the USA). Transfer-oriented teaching and research are the core competencies of SIBE. In addition, SIBE provides companies with comprehensive consulting and support in the areas of recruitment, personnel selection as well as employee retention. Applicants to SIBE's programs are intensively and individually counseled and connected with companies and organizations as part of our dual academic programs. In addition, SIBE offers the opportunity to obtain scientifically based competency development and measurement. As a research university, SIBE includes the following research priorities: competency management for individuals and organizations, internationalization, strategic management, innovation management, supply chain management, business and personnel management and leadership education.

5.1 SIBE AS PART OF THE STEINBEIS NETWORK

The Steinbeis University is a transfer enterprise in the Steinbeis Foundation Network. The School of International Business and Entrepreneurship (SIBE), on the other hand, is a transfer enterprise of the Steinbeis University Berlin and as such, organized as a separate entity. In short, this means that SIBE is an economically and legally independent, decentralized unit in the Steinbeis University Network. This legal independence is a special feature of SIBE that contrasts with other Steinbeis enterprises.

In the case of SIBE, the structural principle of transfer entrepreneurship is handed down; the institutions of which SIBE is composed are likewise organized as SIBE-Institutes (SI) as well as according to the business unit concept.

SI Program Management SMM	SI MBA and International Programs	SI Relationship Management	SI US Collaborations and M.A./MBA Program
SI SIBE Alumni	SI Logistik-Management	SI Law School	SI Unternehmensführung & Internationalisierung
SI Studien- und Qualitätsmanagement	SI Business Development	SI Centrally arranged functions	SI Europa der Marktwirtschaften

74 | SIBE– Institutes.

Just as the structural elements of the Steinbeis Network are reflected by SIBE, the above-mentioned purposes and goals of the Steinbeis Network also show up in the essence and actions of SIBE. Thus, the courses offered by SIBE are designed strictly according to the Talent Growth principle. Just as consistently, SIBE orients its essence and actions to the foundation goals.

— Self-determination in financial matters and content. SIBE
   is financed exclusively through project and tuition
   fees and claims no government subsidies.
— Exceeding expectations. The inevitable result of SIBE's special
   financing structure is that SIBE is also committed to fulfilling and even
   exceeding the expectations of its »buyers« (enterprises, organizations,
   students etc.) in terms of the educational opportunities offered.
— Providing benefit. Due to the special organization of the SUB
   unique selling proposition, its work-integrated learning Talent
   Growth Curriculum, SIBE directly benefits both its students and the
   companies they work in during their studies. The economic benefit
   for students is the development of »competence«; for companies, it
   is the scientific and advisory support and implementation of projects
   for which students are responsible in their respective companies.

5.2   THE DEVELOPMENT OF SIBE

The history of SIBE dates back to 1993 (cf. below Blumenthal 2009). As early as the late 1980s, the founder and director of SIBE, Werner G. Faix, had pointed out various problems that existing educational institutions had in terms of fulfilling the great need for flexible and creative professionals (cf. Faix, Laier 1989, 1991, 1996). In his critique he referred among other things to Hildegard Hamm-Brücher (1972), who complained in the early 1970s that children were not sufficiently supported to develop themselves; instead, they were being shaped to adapt to society's norms and standards. Faix said that schools and universities had recognized the necessity of promoting social and decision-making competence, but they were not successful in implementing it. This was due among other things to the exclusively subject-based curricula of the universities. Their focus lay solely on having students reproduce knowledge in exams. Faix concluded that today's educational crisis consisted of:

– The failure to develop decision-making competence, i.e. when in new or unfamiliar situations, the ability to independently transfer knowledge and autonomously convert it into concrete action. Given the presumably limited ability of the education system to produce a competent workforce, Faix saw on-the-job educational training as an important task for the future (Dosenbach, Faix, Stulle 1992). Due to the ever-changing demands placed on employees, the knowledge they acquired for their first degree could not possibly cover all the challenges they face. This means that the importance of lifelong learning – which is covered by further on-the-job training – is always increasing. This should be marked by alternating phases of theoretical and applied learning. In this way, motivation and a better understanding of learning and the relationships between knowledge and its applied application would be retained. Decision-making competence can ultimately only be trained in the active transfer, i.e. the application of learned material in practice-relevant and open situations.

Even if further education is no novelty, its significance has long been ignored or dismissed as educational leave to be taken almost exclusively by executives (Faix, Buchwald, Wetzler 1991: 49). Furthermore, the further education measures that existed at that time were isolated developments located far away from the companies themselves and functioned more reactively than proactively. These measures thus focused more on closing short-term gaps and on the dissemination of knowledge.

As an educational manager for IBM Germany, Faix therefore initiated the first training programs with curricula that were not only oriented to knowledge acquisiti-

on but also to the development of skills (See Faix, Buchwald, Hoffmann, Wetzler 1989: 28-42). At IBM Sindelfingen, the existing short-term training program« was supplemented by the option of developing methodological and social skills such as learning to learn, project management and the like. In addition, new long-term courses were developed in collaboration with various universities for the purpose of addressing different target groups (employees educated in vocational institutions or in colleges and universities). The prerequisite for participation in a long-term course was first, nomination by the management and second, successful completion of an entrance test. In addition to the development of social and methodical expertise, the long-term programs focused on the transfer of expertise and were also supplemented by practical exercises.[93]
Long-term courses were completed by submission of a practical thesis and successful participation; those who qualified received a certificate.

In collaboration with the University of Stuttgart, the »postgraduate seminar Personnel Development (ASPE)« was created in 1992. It was designed to provide a longer period of systematic support for young managers and executives in business enterprises and organizations outside the everyday work environment (Faix 1995b).

Under the umbrella of the Steinbeis Foundation for Economic Promotion, in 1993 Faix founded the »Steinbeis Academy of Business Management«, which developed an Executive MBA program in cooperation with Danube University Krems. The first courses were held in 1995, and in 1997, the program was accredited for the first time by the FIBAA (Steinbeis Academy of Business Management 1994 / StW 1995 / Danube University Krems 1996). The two-year program included special management courses and was aimed primarily at business owners and managers of small and medium-sized enterprises (cf. Korölus 2000). This so-called Krems method was further developed and introduced as the first version of the Talent Growth Principle now implemented at SIBE.

The Steinbeis University Berlin was founded in 1998. At the same time, the »Business Administration and International Entrepreneurship« transfer enterprise was created in the Steinbeis Academy of Business Management. In addition to the Executive MBA program, the »International MBA in Globalization Management« and »General MBA Growth Management« programs were initiated in 1998. In February

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93   In cooperation with the Institute for Material Handling and Logistics at the Karlsruhe Institute of Technology, a one-week seminar was developed for engineers (cf. Faix, Linder-Vogt, Arnold, Mannchen, Widman 1989: 133). The objective of the seminar was working in an interdisciplinary group to develop a practicable solution for a complex production and logistics problem.

2003, they were accredited for the first time by the FIBAA. The first of the regularly scheduled re-accreditation processes occurred in 2009. Both the International as well as the General MBA program were developed on the basis of the Krems method. In these programs, the main focus of the program was on project work. This was the first step towards development of the Talent Growth Curriculum widely used at SUB today. The emphasis of the projects in the International MBA Globalization Management program is helping German companies establish themselves on the Chinese market.[94] The General MBA Growth Management, also known as »Growth Offensive,« on the other hand, was aimed at recent graduates with a first university degree and presumably high development potential.

Other milestones in SIBE's more recent history include:
— In 2001 and 2002, offices in Brazil (São Paulo) and China (Shanghai) opened and partnerships with large, established universities in these countries were launched. Further collaborations of this kind currently exist in Switzerland, the USA and India.
— In 2005, the first corporate programs to deal with the specific challenges of individual companies (including Kaufland/Lidl, IBM and Siemens) were developed at SIBE.
— In 2006, the SAPHIR GmbH and the SIBE branch »Steinbeis Business School Rhein Main« were founded in Hanau.
— In 2007, SIBE expanded its portfolio by adding a Master of Science in International Management: a consecutive, scientific and application-oriented Talent Growth program.
— The General MBA Growth Management was restructured in 2008. A Master of Arts in management was developed out of the non-consecutive MBA program.
— Since 2011, the MSc in Innovation and Technology Management has specifically targeted engineers and scientists and is geared toward the individual stages of the innovation process. For their projects, students begin with market analysis and end with the concrete implementation of their innovation, thus making a tangible contribution to the competitiveness of their companies. Furthermore, by deepening their knowledge of »Aerospace & Testing«, they gain insights into the key themes of these industries.

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94 The program is entitled »Growth Market China. A market development program for mid-sized businesses«. During the two-year postgraduate Talent Growth Curriculum, more than 200 Chinese students worked here full-time on the project »Market Development in China for my German partner enterprise« for the purpose of supporting the approximately 100 German sponsoring companies with their entry into the Chinese market.

— Since 2011, SIBE has offered a double degree program together with the Brazilian Universidade de Taubaté (UNITAU Mauá), Instituto de Tecnologia (MAUA) and the Universidade Católica de Brasília (UCB). In addition to the titles »Master of Arts« (M.A.) and »Master of Science« (M.Sc.), students have the opportunity to obtain an MBA from the Brazilian university partners. The foundation for this is the recognition of SIBE academic achievements and the study abroad program in Brazil, where our Master's degree students must provide part of the required proof of performance.

— The Global Executive MBA (GEMBA) has been offered since 2013. In conjunction with this, SIBE cooperates with universities and organizations in Brazil, China and the USA. This program is carried out in the framework of a global blended-learning format, which is adjusted to the needs of international participants by combining on-line educational units with classroom seminars. The four classroom seminars mean that participants are only absent from their jobs for 25 days over the 24 months of the program. Each of the partner organizations organizes seminars in their own country, so that in the context of their GEMBA program, students meet once in Brazil, China, Germany and the USA respectively. In the time between these on-site seminars, they study from their home countries by fulfilling tasks via e-Campus and exchanging information with each other as well as with experienced professors.

— Since 2013, SIBE has also offered the degree program »Master of Arts in Philosophy.Culture. Society«. This course is specifically aimed at those who are no longer in paid employment, but have made the decision to work in and for society. In part, this program takes on current and existential themes from research, society, economics and philosophy. Secondly, during the course of the program, students jointly plan and implement a project with the goal of significantly contributing to solving important and urgent social problems of our time.

— Last but not least, SIBE has extended its overall orientation to include jurisprudential programs, thereby becoming a Business and Law School. With the Master of Laws in International Business Law, students who have completed a first degree expand their international orientation for global law firms and companies, as well as their knowledge about foreign legal systems. During their studies, they independently work on international mandates as well as legal issues and learn about the legal background of the global economy. The program focuses on the growing market of Brazil and on the legal system of the USA. The Master of Laws in Jurisdiction compares jurisdiction in Germany, the USA and Brazil. The program is designed for judges, prosecutors and lawyers who wish to acquaint

themselves with and compare foreign legal systems. Students reflect and work independently on cases against the backdrop of comparative legal studies and learn to handle cases and processes more efficiently.

In 2013, SIBE had over 1,000 students and over 2,000 graduates in all of its programs. SIBE has cooperated with approximately 350 companies since its foundation. Its roster of names and start-ups reflects a principle of the Steinbeis Foundation: through transfer entrepreneurship, the foundation and all its parts should be able to respond flexibly to the needs of the market; whenever the market offers an opportunity, e.g. the growing desire for education in the so-called BRIC countries, a Steinbeis Transfer Institute could respond to this by founding a specific transfer enterprise that fulfills the exact needs.

Each of the above programs is an independent transfer enterprise formed like a Steinbeis Transfer Institute. As of 2008, these were combined into an institutional network, i.e. a school. Inspired by the focus of the programs, this network was named the »Steinbeis School of International Business and Entrepreneurship«, or »SIBE« for short.

5.3   SIBE'S MISSION AND GOALS

Mission, goals and approach of SIBE:

The SIBE mission is based on the following two goals and responsibilities:
1. SIBE provides general conditions that enable people to develop creative personalities. A creative personality is characterized by the fact that he/she clearly recognizes, boldly tackles, carefully considers and prudently as well as responsibly assesses opportunities and subsequently creates value from them.
2. SIBE provides general conditions for facilitating the evolution of ideas into Innovation-Quality. A high-quality innovation is characterized by the fact that its newness not only makes it different from an existing product or service, but that in a broad sense, its new quality also adds more value.
These goals and responsibilities apply to teaching, research and the corporate culture at SIBE. The focus of teaching at SIBE is to empower students to develop a perspective on life distinguished by a desire to discover, understand, assess, implement and exercise leadership. Research at SIBE stands for successful and significant knowledge transfer between science and industry. The corporate culture at our

institution is characterized by social practices, structures and proces-
ses that allow SIBE to fulfill its own goals and responsibilities as a
loyal and trusted partner.

The SIBE Statement:

As teachers, employees and executives of SIBE, we wish to qualify
our graduates and put them in a position that lets them achieve great
success in bringing about value-added and sustainable contributions
in companies, organizations and society due to the strength of their
creative personalities.

People with creative personalities look for jobs that are interesting and challen-
ging, i.e. tasks that give them great leeway and responsibility. They want to be
empowered to try out and explore their own skills and potential and test them on
complex problems. In short, creative personalities want to prove their knowledge
and expertise, their energy and courage, to themselves and to others in order to
get ahead and continue to evolve.
The best way to achieve this is by entrusting such people with and involving them
in innovation projects. Such activities allow creative personalities to independently
take on the largest and most interesting of all business challenges, namely, ac-
tively shaping the future of a company.

By entrusting creative individuals with projects on which the future of the company
depends, they additionally have the certainty that they can take things into their
own hands and lastingly develop their own professional futures. It is these innova-
tion projects that also offer the widest development opportunities and the greatest
career chances. People who prove themselves and stand out are seen as benefi-
ting a company the most; they are the ones who sustainably secure and develop
the company's competitiveness.
To maintain the loyalty of current or future company leaders, it is best to offer them
two things: development opportunities and challenges. The former is ensured by
SIBE, in that it offers an additional formal qualification. Despite the ever-increasing
importance of informal educational goals and competencies, an academic degree
is very often considered to provide access to certain career paths. The SIBE con-
cept offers challenges in the following manner. Educational programs center on
innovative projects in Schumpeter's sense, i.e. projects that protect and expand a
company's competitiveness.[95]

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95 There are two ways to define a project: 1. A company has more or less defined an innovation project and
     »assigns« it to a student. 2. A company provides a framework under which the student defines his own pro-
     ject. The second option offers students greater freedom and greater challenges and thus, more opportunities
     to demonstrate and develop knowledge, skill and impetus. For companies, the second option makes it look
     particularly attractive to motivated, capable people.

6   SAPHIR

The talent growth principle serves as a unique selling point and likewise as a defi-
ning feature of the SUB compared to other universities and adult education institu-
tes. Since the transfer enterprises of the SUB as a profit center – regardless of all
collaboration – also compete with each other, they must differentiate themselves
as well. In regard to SIBE, this is primarily the case in regard to the following va-
riables:

— The business model
— The design of the Talent Growth Principle
— The curriculum
— The upstream and accompanying program services.

The upstream and support services for SIBE's Talent Growth Curriculum (TGC)
(personnel services and competence measurement) are the responsibility of SA-
PHIR Holding (Steinbeis Associate Partner of Human Resources International), a
transfer enterprise under the SUB umbrella.
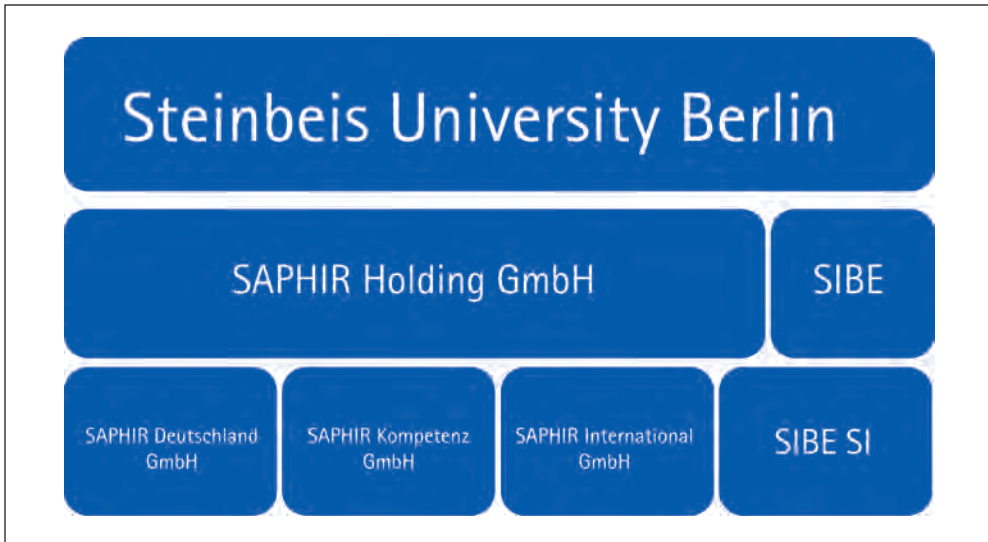
75 | The organization of the SAPHIR transfer enterprise.

Aware of the growing importance of competencies, SIBE consistently and syste-
matically uses competence measurement methods before and during the course

of study – optionally after graduation as well. Valid statements about the status quo or changes can only be made about things that can be measured. In other words, only a person who knows his current level can actually know whether, how and in what direction he is moving. The measurement of competency and its development is carried out at SIBE primarily with the two measurement methods KODE® and KODE®X, which are implemented by SAPHIR Kompetenz GmbH.

SAPHIR Deutschland GmbH (hereafter: SAPHIR Dtl.) supports companies in the recruitment, selection and retention of academics using DIN-certified[96] personnel selection processes.[97] SAPHIR Dtl. also supports aspiring or young graduates by providing career counseling, coaching and above all, by helping them find sponsoring companies for the Talent Growth Program.

In short, SAPHIR Dtl. takes over all personnel services upstream from study at SIBE. The purpose of SAPHIR Dtl. is to bring applicants and sponsoring employers to the conclusion of an employment relationship in the context of the Talent Growth Curriculum.

The personnel services of SAPHIR Dtl., together with study at SIBE, constitute a comprehensive offer for companies and students. Thus, it is not surprising that the target groups of SAPHIR Dtl. are analogous to those of SIBE. On the one hand, SAPHIR Dtl. supports companies in the recruitment, selection, placement and retention of employees in the context of the SIBE Talent Growth Curriculum.[98] On the other hand, SAPHIR Dtl. supports applicants for SIBE's TGC in their search for and placement in sponsoring companies. Here, the SAPHIR Dtl. offers – analogous to SIBE offers – have the following characteristics. On the corporate side, the offers target companies of all sizes and in all industries. In addition, they are oriented to all of a company's departments and encompass almost all subject areas. On the student side, SAPHIR Dtl. offers target young professionals with an academic background and up to circa five years of professional experience.

With the establishment of SAPHIR Dtl. we have reacted mainly to the following challenges (cf. for the following Rominger 2009: 221):

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96 The SAPHIR (qualification) diagnostic system, including all procedures used (KODE®, KODE®X, assessment center and interview) were inspected on 24/03/2009 by an independent institute that used the ComCheck DIN 33430. The DIN 33430 is intended to ensure the quality of aptitude assessments as well as the transparency of the aptitude assessment market. It includes quality standards for the entire personnel selection process.

97 While SAPHIR Dtl. concentrates on the German-speaking market, SAPHIR International GmbH focuses on the international recruitment, placement and support of executives and junior executives.

98 Recruiting employees with or via SIBE programs is one of the possible options offered by SAPHIR. It is also possible to recruit SIBE alumni or select external applicants (http://www.saphir-deutschland.de).

DECLINING NUMBERS OF APPLICANTS:

As surveys in recent years repeatedly confirm, a majority of companies in Germany is threatened by a shortage of specialists and management executives (Bienzeisler, Bernecker 2008: 11). Since early 2007, SIBE partner companies report that the number of applications, compared to previous years, has declined dramatically – in some areas by up to 75%. The numbers of applications received for ordinary jobs as well as unsolicited applications and applications for internships and dissertations have dropped, regardless of company size and industry. Although this trend mainly affects medium-sized enterprises at present, large companies also confirm that the former flood of applications is steadily ebbing.

LACK OF A »TALENT MINDSET«:

Although the numbers and trends are alarming and media attention is now growing, awareness of the problem is still relatively low, particularly in technical departments of enterprises (Kienbaum 2006: 7). The concepts hidden behind slogans such as »Talent Management«, »Employer Branding« and »Talent Relationship Management«, are well on the way to becoming solid strategic components of human resources departments. However, such strategies are not necessarily implemented in the daily operations of departments, and the »talent mindset« is found only sporadically. Many executives do not seem to actively act upon their company's talent management strategy (Hewitt Associates 2008). Probably the most serious reasons for this are that managers don't have the necessary time and/or knowledge to sufficiently deal with existing and future talent (ibid.).

To handle such challenges, SAPHIR Dtl has responded with the following business model (cf. for the following Rominger 2009: 235f.):

TARGETED PROACTIVE RECRUITMENT OF ACADEMICS:

On the one hand, SAPHIR Dtl. recruits academics via a variety of classical and modern elements of marketing communication (Web 2.0 marketing, university marketing, etc.). The focus is on dialog marketing, a special form of direct marketing. In dialog marketing, the content and form of the marketing activities are tailored to the interests and needs of the target group. On the other hand, in contrast to other more monolog-based forms of marketing communication, a dialog usually takes place with the customer. As part of the recruitment process, focusing on dialog marketing tends to guarantee that the addressee understands the message better because he or she is asked questions that check comprehension. In addition, in an increasingly anonymous world, building a relationship and a certain emotional attachment during the recruitment process would offer a great advantage, for example, over the mere placement of job ads.[99] Dialog marketing is usually more

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99 This state of affairs tries to take advantage of active Talent Relationship Management.

time-consuming than other forms of marketing communication because it does not address large numbers of people at one time. Instead, its emphasis is discussions with individuals. It is therefore not surprising that companies often find this form of marketing overwhelming, whether in regard to classical product marketing or marketing in the context of employee recruitment. This is the point where SAPHIR Dtl. comes in, primarily by offering the following services:

— Candidates searches in CV databases (»Talent Pool«): SAPHIR Dtl. has its own candidate database. Relationships with candidates in this database are maintained in accordance with dialog marketing principles. The advantage of this approach is that – from the perspective of applicants – candidates are rapidly matched. From the perspective of companies, open positions can also be rapidly filled. Particularly in the case of critical or difficult-to-fill positions, other databases are also searched. Via this method, the potential of the passive job market is also developed, i.e. candidates are also contacted who are not actively looking for a job at the moment, but show a fundamental willingness to change.
— Direct approach: In the recruitment area, the direct approach is becoming increasingly important. Contact is carried out by phone, on campus or via e-mail and social networking sites. This also makes profitable use of the passive candidate market.
— Headhunting: In individual cases, especially for critical positions, candidates in specific fields are addressed in a targeted manner.
— Trade fairs: Companies are also represented by SAPHIR Dtl. at recruiting fairs (e.g. the Graduate Congress in Cologne as well as smaller fairs at universities), i.e. their jobs are also marketed there. On request, companies are supported at their own stands by SAPHIR Dtl. staff with information material.
— Joint recruiting events: If appropriate, SAPHIR Dtl. holds selection procedures for SIBE Master's degree programs in companies themselves. Such events are conducted for the target group of trainees, students who are just about to receive their diplomas or bachelor degrees, and the company's own employees.
— Networking and referral marketing: Overall, recommendations have a very strong influence on the behavior of applicants. Candidates make their decisions faster and are more likely to choose a particular job. As disseminators and thus possible transmitters of recommendations, the SUB and SIBE network of students and alumni is also available to SAPHIR Dtl.[100]

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100 Since the influence is further enhanced when the sender of the message has a certain similarity to the recei-ver of the message, current and former graduates play an important role.

SINGLE-SOURCE APPLICANT MANAGEMENT:

As the internal recruiter for SIBE, SAPHIR Dtl. is responsible for the complete applicant management process: selection, recruitment and placement of students for the SIBE Talent Growth Curricula. Given SIBE's two cooperation partners – companies and students – SAPHIR Dtl. provides two complementary forms of personnel services:

— For companies, SAPHIR Dtl. acts as a recruiter. It acquires open jobs for the SIBE TGC at companies, prepares job descriptions, compares them with existing prospects in the internal candidate database and/or carries out external searches for candidates. To reduce the complexity of the recruitment process, companies receive pre-selected applications from candidates who have already been through a selection process. In the subsequent selection process, companies can rely on the results of scientifically-based, DIN-certified testing procedures.

— For applicants, SAPHIR Dtl. acts as a sort of »private employment agency«. To reduce the complexity of the application process, SAPHIR Dtl. offers individual and group counseling, career counseling and coaching, and above all, direct placement with companies that cooperate with the SIBE in the framework of the TGC.

In summary, this means that SAPHIR Dtl. attempts to bring together the right companies with the right candidates, who cooperate together with SIBE as part of a TGC. To achieve this, SAPHIR Dtl. primarily uses the following instruments:

SELECTION PROCEDURE:

SAPHIR Dtl. employs a combination of various qualitative and quantitative personnel assessment methods. The selection tools measure competence and systematically determine the candidate's potential and performance. The entire SAPHIR Dtl. selection process relies on the instruments developed by John Erpenbeck et al., KODE® and KODE®X. These include application document analysis, an assessment center, an interview and other procedures that are embedded in a methodological whole.

DOCUMENTATION OF CANDIDATE COMPETENCIES:
The results of the selection process are documented in varying degrees of precision as requested by the company. The following instruments are available:

— Application forms for documenting knowledge and skills.
— A brief opinion summarizing the candidate's knowledge and qualifications as well as initial statements about competencies identified through qualitative methods.
— A detailed opinion summarizing the candidate's knowledge and qualifications as well as statements about competencies identified through quantitative methods.
— Opinions obtained by the use of KODE® and KODE®X.

MATCHING THE DESIRED AND ACTUAL COMPETENCE PROFILES:
The first step that SAPHIR Dtl. takes is to collaborate with the company (e.g. its technical and/or human resources department) to develop the desired profile for a potential candidate. Depending on the company's wishes, different methods of profile development can be applied: simple listing of job specifications; joint development of requirements and competency profiles using KODE®X; systematic development of competency profiles using KODE®X with consideration of corporate strategies. The next step is comparing the desired profile (from the requirement profile of the company) with actual candidate profiles.

7   THE SIBE PORTFOLIO – A COMPREHENSIVE STRATEGY IN THE WAR FOR TALENT

In a 2008 online survey held by the Boston Consulting Group, personnel managers and other executives from 83 countries were asked about their most important future challenges. Over 4700 executives participated in the survey; they commented on 17 topics related to human resource management and on a total of 194 specific measures. In addition, a team from BCG held in-depth interviews with over 200 executives throughout the world. The survey identified challenges that will be particularly important in the future and where the survey respondents currently see major weaknesses in their companies. The most important as well as critical point shared by those surveyed was »Talent Management« i.e. finding, attracting,

motivating and retaining the right highly qualified and competent people for their companies (BCG 2008).
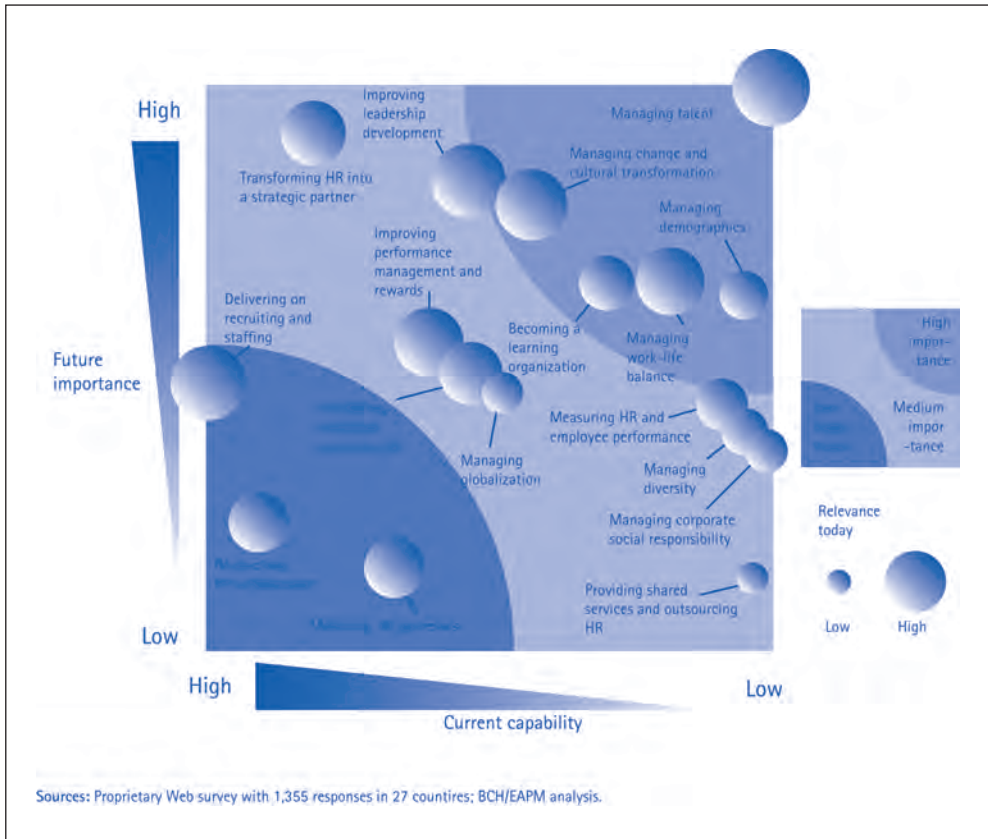
76 | The challenges for HR (BCG 2008).

A large majority of the 1130 private- and public-sector CEOs and executives around the world who were interviewed as part of the IBM Global CEO Study reached the same conclusion.

> *In 2008, employee qualifications were just as important as market factors. [...] In order to support expansion into new geographic markets and replace the aging members of the baby boom generation who are retiring from the labor force, CEOs are seeking qualified employees with industry-specific knowledge, technical expertise and especially leadership qualities. This is why the insufficient number of qualified employees was on top of the list of the biggest hurdles that stand in the way of global integration – before legal requirements and the necessary budgets (IBM 2008: 15f.).*

77 | Inhibitors of growth (IBM 2008).

Highly qualified and competent people, especially those with a creative perso-
nality, are the driving force behind innovation, the sine qua non without which no
company can maintain its competitive edge, let alone expand. However, highly
qualified and competent people are and always have been a scarce resource. In
view of the previously described developments, they will become even scarcer in
the very near future. What must be done? The results from in-depth interviews
with selected company representatives in the study »Pro 50 – Work with a Future«
(PwC, 2008: 23) show that some companies have already developed promising
countermeasures to deal with the impending shortage of qualified technical and
management personnel, such as:

— Recruiting junior staff by intensifying contact with schools and universities and by supporting occupational and work-integrated learning programs.
— Concepts to improve their image as an employer (»employer branding«)[101]
— Programs for employee retention (e.g. promoting the compatibility of work and family life / leisure time.
— Greater emphasis on staff development in order to make optimal use of the existing potential.
— Development of new target groups, such as targeted recruitment of older employees.

For these measures to achieve long-term success, it is important to conduct strategic human resource management based on the company's objectives. Specifically, this means that HR departments must be involved early on in the definition of medium- and long-term corporate objectives so that they can proactively address and provide the needed human resources when they are needed (cf. Faix, and others 1991b: 63f.; cf. Vater 2003: 246). Successful personnel management in time of today's war for talent additionally means implementing a sophisticated system for attracting highly qualified and competent people, identifying those who are already in the company, and maintaining their loyalty. When implementing this kind of strategic human resource management, the following points must be observed (cf. o.V. 2008):

— Development of strategic human resource management that states organizational goals and defines strategic workforce planning and the need for highly qualified and competent people.
— Focusing strategic human resource management on areas, employees and issues that are critical to success and/or have to do with innovation projects.

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101 It must always be borne in mind that the group of highly qualified and competent people is certainly not a homogeneous group. A company successfully obtains such employees when it responds to their specific values. Broadly speaking, however, the following company images can be identified, which highly qualified and competent – and above all, creative individuals – react positively to (cf. Fishman 2006):
»Lifestyle«: This image attracts people who are looking for freedom, leisure and self-fulfillment.
»We offer stability«: This image attracts people who are looking for security, loyalty and reliability. »We save the world«: This image attracts people who have high moral demands on a company and who are looking for inspiring, meaningful tasks.
»Families welcome«: This image attracts people who seek to combine professional success with their families or partnerships.
»High risk/high chance«: This image attracts people who are looking for activities that could quickly catapult them to the top, but carry a certain risk.
»Come to a winner«: This image attracts people who want to work for a »high-performing company«.

— Establishment of global strategic human resource management
 through »intellectual global delivery« (international knowledge transfer
 within global expertise networks) and/or by »open innovation«.[102]
— Positioning responsibility for strategic human resource management
 at the senior manager level and allocating process and
 governance responsibility even after the introduction phase.
— Intense involvement of line management in both the planning
 and operation of strategic human resource management.
— Active change management to successfully implement changes
 in values and activities in terms of a new cultural orientation.
— Introduction of a controlling system for ongoing
 performance measurement and management.

To recruit and retain highly qualified and competent employees, it is essential to create conditions that make them feel good and that enable them to develop – and want to develop – their talent. As a rule of thumb, highly qualified and competent people should be seen as customers, and it is necessary to find out what they want. The general answer to this is that by and large, they want what all »normal« people want – but in the case of highly qualified and competent people, all of these wishes need to be fulfilled. The latent willingness of such people to change jobs is only surpassed by the willingness of other companies to immediately hire such a person at the best conditions (cf. o.V. 2002a and Werle 2008).

A study carried out by the McKinsey consulting firm with the participation of circa 13,000 executives provides information on what young high performers want (McKinsey & Company 2001). In summary, the authors of this study believe that the following issues make a company attractive to high performers:[103]

Exciting work – quite simply, people want interesting, challenging jobs and they want to feel passionate about their work. A great job is demanding and stretching and full of requirements that the individual finds interesting.

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102 The fundamental question is whether to hire highly qualified and competent people on a permanent basis or to rely on a network of freelancers.

103 The following studies arrive at almost identical results: The DGFP- Bertelsmann-Study »Desired profile attractive employer« (DGFP 2004); the Austrian Study »Employer of Choice« (o.V. 2002b); the study »Fringe Benefits for Executives« from the consulting firm TOPOS (2007); a study of the recruiting service Access (o.V. 2002a), in which more than 3,700 academically trained professionals and managers, who were circa 31 years old and had an average of three to four years of professional experience participated; the study »Is Europe Ready For The Millennials?« (o.V. 2006); the study »Employer Branding 2007« (o.V. 2007), which was conducted by TNS and the weekly newspaper »Die Zeit«.

Great company – managers want to work for companies that are well-managed, that have admirable corporate cultures and values, and great leaders. Two aspects of culture are critical: a strong emphasis on performance and an environment that is open and trusting.

Wealth and reward – people want to make money that is commensurate with the value they create and with their other options. This is about more than the tangible value of the money; people want to feel recognized and valued for their individual contributions.

Growth and development – managers want the company to help them develop their skills. This is particularly important today, when people realize that their only real security in the job market is the collection of skills they possess (McKinsey & Company 2001: 5).
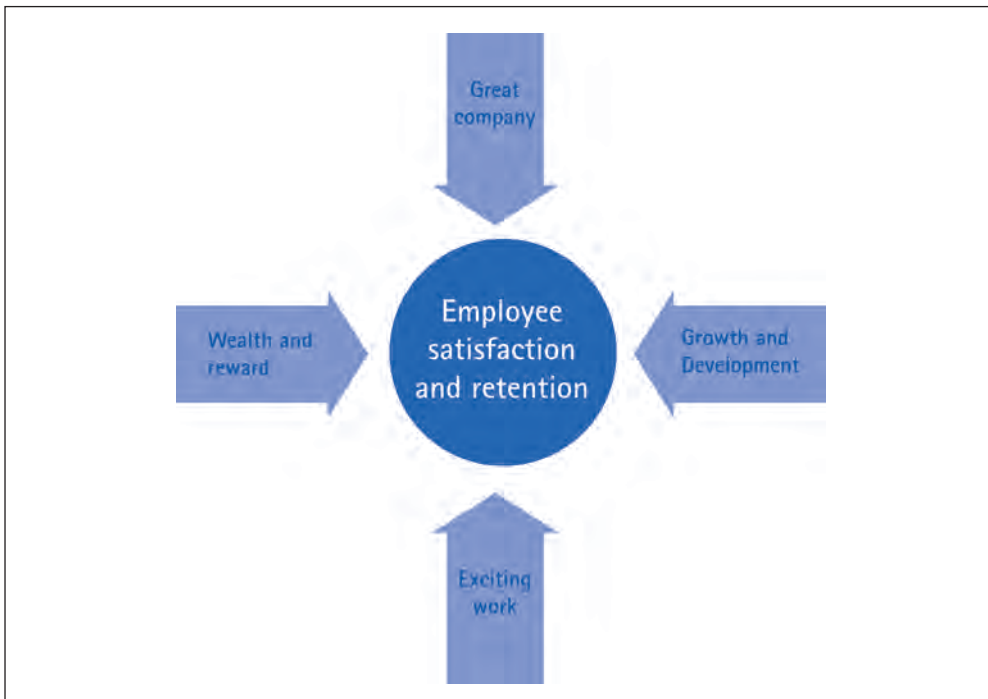
78 | What makes companies attractive to highly qualified and competent people
(McKinsey & Company 2001: 5).

An idea of what high-potential employees want can be found in the study »Generation 05 – How does the new elite tick?« created by Manager magazine in cooperation with McKinsey in 2005 (o.V. 2005). In this study, 1072 20- to 29-year-old students in Germany were interviewed. When asked about their career goals, they rated »interesting work content« at the very top (93%). This was followed by

such professional goals as »recognition of one's performance« (86%), »work-life balance« (82%),»individual development opportunities« and »further education opportunities« (each 81%), »independent work« (80%), reconciliation of work and family« (79%) and »job security« (73%). The career goal »high income«, however, was important for less than half (42%). The career goal »high prestige of the profession or position« is desirable only for 27% of respondents.

As to their values, the students interviewed were free of ideologies without being oblivious to values. The top values are freedom, leisure and self-realization (93 to 92 to 90%). After these, traditional conservative values such as loyalty (87%), responsibility (86%) and social commitment (86%) are found. In the midfield, values such as performance and success, material values such as enjoyment and consumption (45%) or wealth (37%) can be found.

Other findings include these: When selecting an employer, the majority of Generation Y believes that a secure professional future today is due largely to a company's innovative capacity and international orientation. Between the demands of the expected profession and the expected chances of realizing themselves, there is a significant discrepancy: two out of three do not expect to be able to realize their ideas in their professional life. The judgment of the surveyed students on the German economy is rather mixed. The image of the German economy is on the borderline between neither particularly positive nor negative. This leads to the conclusion that the German economy does not particularly attract young, highly qualified and competent people in their own country.

What do these results mean for the war for talent? To the extent that one assumes that highly qualified and competent people are distributed relatively evenly throughout the groups surveyed, one can first conclude that no highly qualified and competent person can be tempted by offering only one advantage – be it money, security, training opportunities or work-life balance. Each preference must be presented in connection with other advantages offered by the company and individually adapted to the needs of the particular individual. It must also be observed that performance must be fairly rewarded – monetarily, but above all by offering the chance to obtain further education. However, as the results above show, money does not play the main role. Highly talented people can be won by a company offering interesting, challenging job content and tasks that give them great leeway and responsibility – and by talking about it. They want to be empowered to try out and explore their own skills and potential and test them on complex problems. In short, such employees want to prove their knowledge and expertise, their energy and courage to themselves and others in order to get ahead and continue to evolve.

The best way to achieve this is by entrusting or involving highly qualified and competent people with innovative projects. Innovation projects allow such employees, especially the creative personalities among them, to independently take on the largest and most interesting of all business challenges, namely, actively shaping the future of a company. By entrusting them with projects that the company's future depends on, they also have the certainty that the development of their own professional future is in their own hands. It is particularly these innovation projects that offer the widest development opportunities and greatest career opportunities. People who prove themselves and stand out appear to be those who benefit a company the most; they are the ones who sustainably secure and develop the company's competitiveness.

Given the situation described here, the Talent Growth Curriculum offers a solution with many advantages for both sides:

— Students work in growing and sustainable businesses, because only these companies develop projects that are conducive to the development of new business opportunities.
— Students work on business-relevant projects and make a valuable contribution to the company or organization's success. Through this, they can secure their organizational future and develop their careers.
— During the course of the program, high potential candidates (graduate students) and high performers (with appropriate experience) have the opportunity to get to know their skill levels and develop their management skills in a targeted manner. The program thus promotes personal and character development.
— At the same time, students are asked to define the objectives of the project as well as their own objectives, such as personal development and career. These serve as a framework and offer incentives to achieve these goals.
— During the course, students develop wide networks. In addition to the very important network consisting of their program peers and those in their companies, they also get to know the international Steinbeis network in science and industry.
— At the end of their program, young graduates possess two years of professional experience and due to the work on their own projects, join the group of attractive young executives or high performers.
— The high performers who join the program have additional, systematic evidence of their high performance that immediately advances their careers.

Companies benefit equally from the Talent Growth Curriculum:

— Through the project in the work-integrated Master's
    degree, a company can gain new business opportunities
    and employees can likewise develop further.
— The Talent Growth Curriculum removes the burden of staff and
    management development from the company, to lasting effect.
— While professional recruitment and personnel development by human
    resource departments and external services are usually connected
    with high costs, the costs of the Talent Growth Curriculum recede
    into the background due to the new business opportunities that
    are opened up. The proceeds from the projects usually far exceed
    the costs and lead to profit for the sponsoring companies.
— The young graduates or high performers can be judged on the success
    of a comprehensive, business-relevant project. The Talent Growth
    Curriculum thus represents a comprehensive approach to staff appraisal.
— Traditional leadership development usually closes with an assessment
    center and generates only winners and losers. The Talent Growth
    Curriculum provides performance and competency assessment
    in a real environment and based on the success of a real project,
    which makes it much more meaningful. Consequently, the result for
    companies as well as for participants and managers is tangible.

LITERATURE AND LIST OF FIGURES

9 LITERATURE AND LIST OF FIGURES

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Table 8 | Development in Brazil, China, Germany, USA; GCR overall index (2007 to 2013),
value of 7

GCR Indices	2007	2008	2009	2010	2011	2012	2013
Brazil	4.07	3.99	4.13	4.23	4.28	4.32	4.40
China	4.55	4.57	4.70	4.74	4.84	4.90	4.83
Germany	5.48	5.51	5.46	5.37	5.39	5.41	5.48
USA	5.80	5.67	5.74	5.59	5.43	5.43	5.47

Table in Ill. 15

Table 9 | Development in Brazil, China, Germany, USA; GCR overall index (2009 to 2012),
value of 100

GII Index	2009	2010	2011	2012
Brazil	32.5	29.7	37.7	36.6
China	35.9	33.2	46.4	45.4
Germany	49.9	43.2	54.9	56.2
USA	52.8	45.7	56.6	57.7

Table in Ill. 17

Table 10 | Development of Brazil, China, Germany and the USA (2000, 2005, 2011, 2012);
innovation Indicator for overall rankings, points 1 to 100

Innovation indicator	2000	2005	2011	2012
Brazil	0	0	0	0
China	9	12	18	15
Germany	49	51	57	56
USA	61	57	53	56

Table in III. 21

Table 11 | Average age of the population of Brazil, China, Germany and the United States by 2100

Brazil							
1950	1960	1970	1980	1990	2000	2010	2020
19.2	18.6	18.6	20.4	22.6	25.4	29.1	33.4
2030	2040	2050	2060	2070	2080	2090	2100
37.4	41.3	44.9	47	48.4	48.7	48.3	47.5
China							
1950	1960	1970	1980	1990	2000	2010	2020
23.8	21.3	19.7	22.4	25.1	29.7	34.5	38.1
2030	2040	2050	2060	2070	2080	2090	2100
42.5	46.4	48.7	49.4	49.4	48.4	47.2	46.2
Germany							
1950	1960	1970	1980	1990	2000	2010	2020
35.4	34.7	34.3	36.4	37.6	39.9	44.3	47.7
2030	2040	2050	2060	2070	2080	2090	2100
48.8	50	49.2	47.1	46.1	45.5	45	45.3
USA							
1950	1960	1970	1980	1990	2000	2010	2020
30	29.6	28.2	30	32.9	35.3	36.9	37.9
2030	2040	2050	2060	2070	2080	2090	2100
39.1	39.6	40	40.4	41.1	41.8	42.5	43.2

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Table 12 | Age-specific composition and quantitative development of the population of Brazil
in 1950, 2010, 2050 and 2100 (expressed in thousands).

Brazil	1950	2010	2050	2100
0 − 14	22433	49615	32822	27174
15 − 24	10421	33536	24181	18475
25 − 39	10643	47579	40465	28430
40 − 54	6490	35814	46091	29618
55 − 69	3107	19416	43395	30466
70 − 84	842	7728	27724	28176
85+	41	1258	8168	15010

Table 13 | Age-specific composition and quantitative development of the population of China
in 1950, 2010, 2050 and 2100 (expressed in thousands).

China	1950	2010	2050	2100
0 − 14	188369	260959	174389	149811
15 − 24	98035	225311	124235	101124
25 − 39	115605	312140	212650	154174
40 − 54	85688	297155	247534	159655
55 − 69	50794	174924	291372	165842
70 − 84	11785	64359	204795	147320
85+	760	8549	40630	63115

Table 14 │ Age-specific composition and quantitative development of the population of Germany in 1950, 2010, 2050 and 2100 (expressed in thousands).

Germany	1950	2010	2050	2100
0 – 14	22433	49615	32822	27174
15 – 24	10421	33536	24181	18475
25 – 39	10643	47579	40465	28430
40 – 54	6490	35814	46091	29618
55 – 69	3107	19416	43395	30466
70 – 84	842	7728	27724	28176
85+	41	1258	8168	15010

Table 15 │ Age-specific composition and quantitative development of the population of the USA in 1950, 2010, 2050 and 2100 (expressed in thousands).
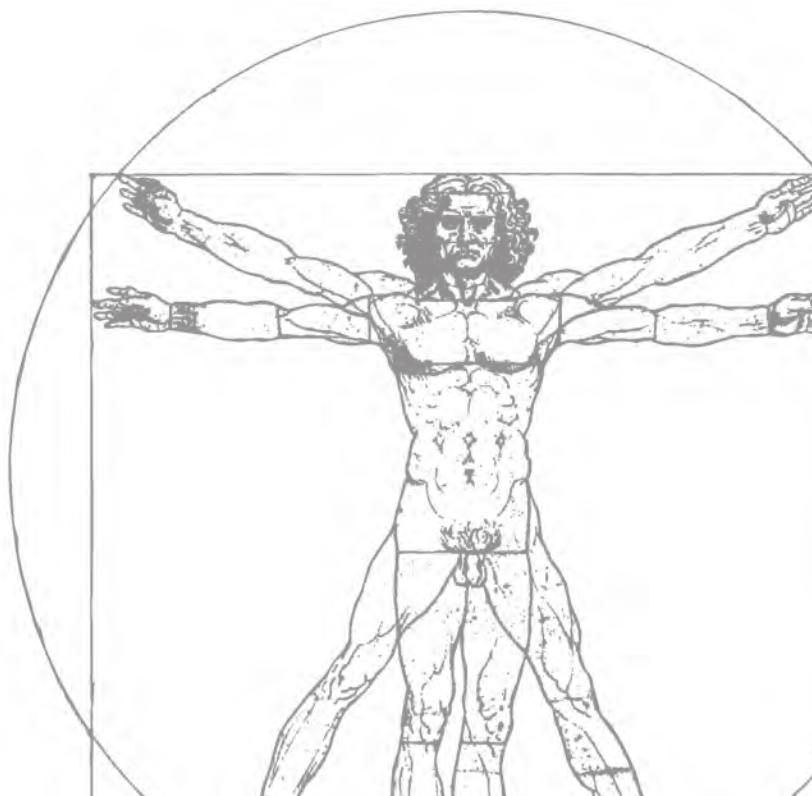
USA	1950	2010	2050	2100
0 – 14	42596	62316	75830	83742
15 – 24	23467	43329	50208	55416
25 – 39	36578	62374	75618	82304
40 – 54	27809	65773	71236	80971
55 – 69	19805	48306	65457	77369
70 – 84	6813	22520	46040	65338
85+	744	5764	18713	32887
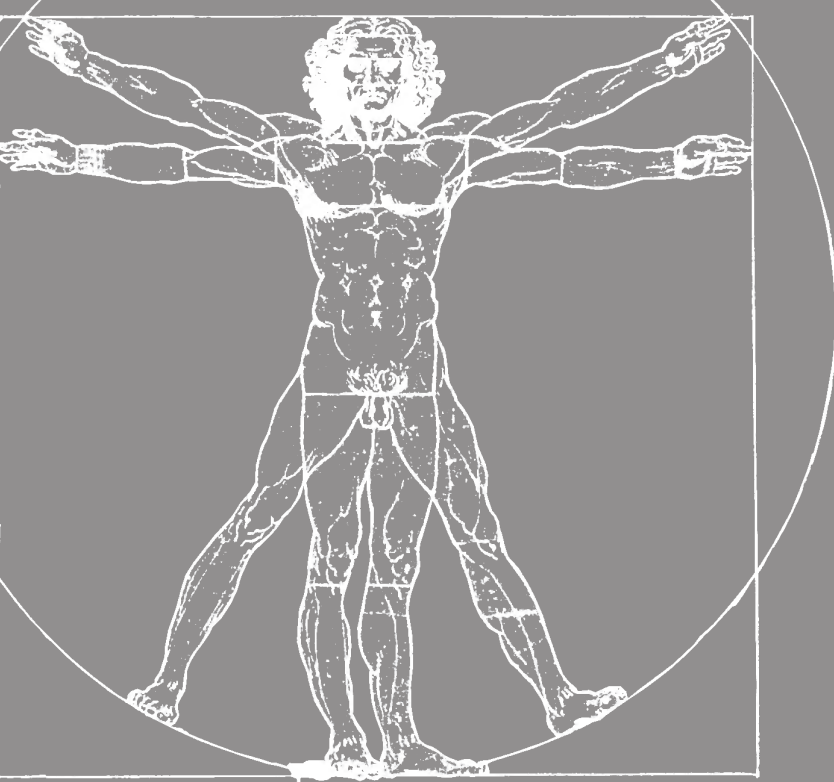
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Study of Chemical Engineering at the University of Applied Sciences in Aalen (Dipl.-Ing. (FH) 1973). Study of Chemistry and Biochemistry at the University of Ulm (Dipl.-Chem, 1978) and Ph.D. (Dr. rer. nat. (1981)) in the field of high purity materials research / trace analysis in cooperation with the Max Planck Institute for metals research and the Karlsruhe Nuclear Research Center. Research associate at the University of Ulm and radiation protection officer (1978-1982). From 1982 to 1995, employee of IBM Germany, manager in various educational, personnel development and management development functions; ultimately director of the IBM Bildungsgesellschaft. Lecturer at the University of Stuttgart (1988-1996), the Freie Universität Berlin (1990-1992) and Heidelberg University (1995-1996); from 1996 to 1999 Deputy Director of the MBA Center at the Danube University Krems (Austria). Extensive publications and lectures in the areas of trace analysis, semiconductor technology, technology management, business management, foreign trade, management development, entrepreneurship and personnel development.
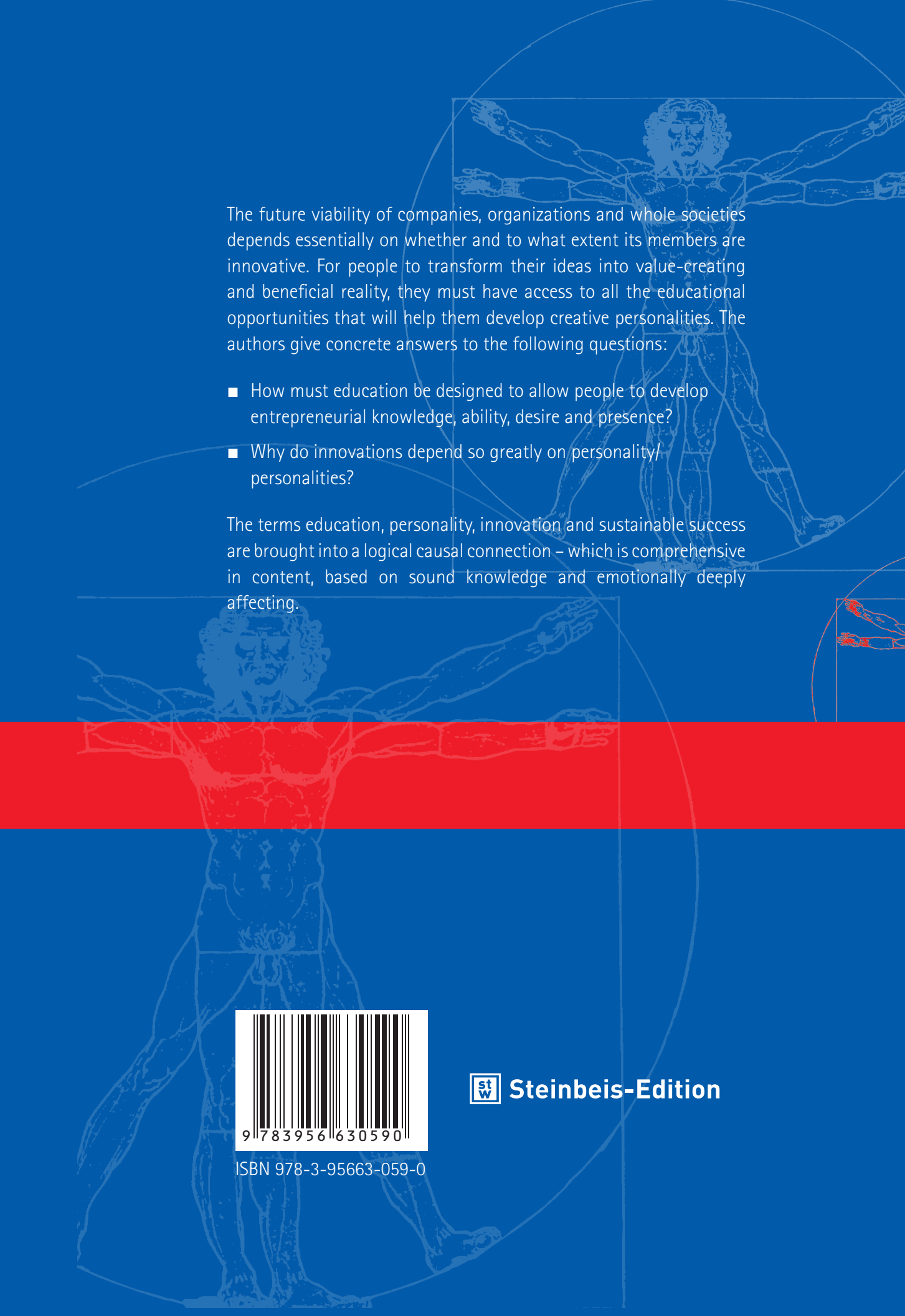
DIPL.-GERM. JENS MERGENTHALER, MBA

Jens Mergenthaler was born in 1976 in Bamberg.

While still in school, he worked for several years as an assistant in a marketing department. After graduating from secondary school he held an internship in an advertising agency. He subsequently attended the Otto-Friedrich-University in Bamberg, taking German studies and literature, journalism and sociology, and focusing on the multidisciplinary research of personality and identity. His thesis handled the interdisciplinary discourse on the phenomenon of multiple personality. During this degree program, he also completed management courses developed specifically for humanities scholars.

As a student, Jens Mergenthaler had already begun acquiring his first professional experience in universities as well as in the communications industry, building on these after graduation by working for several years as a university lecturer and freelance journalist. He simultaneously researched the most diverse aspects of the human psyche as well as opportunities for human knowledge. He is currently writing about Aristotle's concept of the soul and about the socio-historical dependency of human experience.

Jens Mergenthaler completed an MBA program at the School of International Business and Entrepreneurship (SIBE), with multidisciplinary research on innovation, entrepreneurship, education and personality. He wrote his Master's thesis on the question of how students could be educated to become creative personalities, i.e. to become innovatively thinking and acting people. He currently works at SIBE as a project manager for scientific projects as well as a program coordinator for doctoral students, and is also active as a university lecturer. Jens Mergenthaler is a doctoral student at the Ludwig Maximilians University in Munich (LMU) and is writing his dissertation on »Leadership Education«.

The future viability of companies, organizations and whole societies depends essentially on whether and to what extent its members are innovative. For people to transform their ideas into value-creating and beneficial reality, they must have access to all the educational opportunities that will help them develop creative personalities. The authors give concrete answers to the following questions:

- How must education be designed to allow people to develop entrepreneurial knowledge, ability, desire and presence?
- Why do innovations depend so greatly on personality/personalities?

The terms education, personality, innovation and sustainable success are brought into a logical causal connection – which is comprehensive in content, based on sound knowledge and emotionally deeply affecting.

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