

Preface

This year 2001, The Rotterdam School of Management/Faculteit Bedrijfskunde is celebrating its sixth lustrum. In the thirty years of its existence, the School has evolved into an international business school, focused on the acquisition, transfer and application of knowledge, with respect to entrepreneurship and management. Research driven, because we want to pre-act on economical, technological and societal developments and their impact on management, interdisciplinary and guided by the future needs of international business. The School has preserved its distinctive pragmatic identity and has been able to build a solid reputation over the years. In fact, the School has been among the thirty best business schools worldwide the past few years.

Our School is very much aware of the power of contemporary developments in its environment and their possible far-reaching consequences for management education, ways of learning, composition of faculty and students, and the organization of business schools. The reality of the network economy is that it is causing landslide changes in the organization and management of enterprises. More and more, traditional monolithic firms have become flexible networks of international outsourcing and comakership. But these changes have their impact also on management research and education, and for business schools there is an excellent opportunity to reconfigure organizational arrangements following the same network logic. That is, why the School took, on the occasion of its thirtieth anniversary, the initiative to write this book. To show, that we recognize the changes and the consequences they have for our future activities and organization.

This book reflects on these encompassing developments. It tries to grasp the essential characteristics and dynamism of what nowadays is called “the new economy” and introduces the network perspective, in order to integrate the different characteristics of the new economy into one concept. Furthermore, it presents a particular vision on the organization of management education and business schools. On the basis of this vision, the School is actively (re)designing its strategy and preparing its future programs and activities, in order to play its role in management research and education in the coming decades.

I am proud to present this book to you. I hope that you will find enjoyment in reading it and that it will elicit new and innovative thinking regarding the organization of management education and strategy in business schools.

Prof.dr. P.H.A.M. Verhaegen
Dean Rotterdam School of Management/Faculteit Bedrijfskunde

CHAPTER 1

Introduction

WHY THIS BOOK?

“It is change, continuing change, inevitable change, that is the dominant factor in society today. No sensible decision can be made any longer without taking into account not only the world as it is, but the world as it will be (...). This, in turn, means that our statesmen, our businessmen, our everyman must take on a science fictional way of thinking”, Russian born US-author Isaac Asimov (1920–1992) was once quoted. Over time, many things that have been labeled as science fiction have turned out to become reality – or at least pretty close to reality.

Call it science fictional thinking, scenario planning, or anticipation, what is important for organizations is to develop a vision on the future – what it may look like, what its consequences may be, and what the organization’s role in this future may be or should be. Many organizations are faced with this challenge, educational institutions not in the least. Contemporary economic realities are threatening the subsistence of education as society has known it hitherto. These challenges apply all the more to institutions of management education.

This book is about changes and the consequences of these changes in the field of management education and current realities facing business schools. Business schools are encountering a lot of changes, challenges, and new demands in both their internal and their external environment. This book contains both a description of important trends and developments that are taking place within the context of management education and a particular vision on these trends, developments, consequences, and realities: a network vision.

This book takes a broad view on developments in the field of management education and the (need for) progression of business schools in the network economy. By means of a network perspective it aims at exploring future directions and roles for the business school and its activities in order to survive new economic and competitive realities. As the British philosopher Bertrand Russell proclaimed (1872–1970): “change is one thing, progress is another.”

MANAGING AND LEARNING IN THE 21ST CENTURY

In times of change, it is a soothing and convenient thought to capture the essence of reality into a single encompassing notion. What, then, is that one feature, concept, or term that concisely describes what the 21st century (social-)economic landscape is

about? Is it the ‘new economy’? Is it the digital economy? Perhaps it is technology? Or, in more general terms, is it about paradigmatic change?

Economies develop over time and different economic eras are characterized by different dynamics. The transformation from a society based on agriculture to an industrial society invoked fundamental changes, as well as the transformation from the industrial society to a society based on knowledge. Some have labeled this contemporary knowledge society in terms of a new economy, while others have demonstrated a one-sided preoccupation with globalization or information and communication technologies (ICT). What is generally agreed upon is that the transformation to this era of new economic realities brings truly fundamental changes inducing fundamental new dynamics, a new landscape, and new players competing within this landscape.

This book views these changes, dynamics, and the new landscape particularly from a network perspective, since the idea of the network perspective seems to provide the opportunity to integrate different important developments and features into one single concept. The creation of networks, for instance, is facilitated by the application of ICT and the process of globalization. Knowledge, then, becomes crucial in the network economy and can be seen as the glue that holds the network together.

When knowledge becomes of crucial importance, there is a prominent role for education and learning. Transferring knowledge and developing the right competencies and skills are prerequisites for organizational and individual maneuvering. Terms like smart products, the knowledge worker, the learning organization, and the intelligent enterprise have become established parts of today’s business vocabulary. The way of conducting business has changed and so have approaches to organizing: today’s enterprise is flexible and adaptive to changing market and environmental circumstances. Management has changed accordingly and the present-day manager is confronted with different and fast-changing competitive and organizational realities.

In addition, the boundary between work and learning is blurring; ICT has penetrated both business processes and educational processes; management knowledge is changing; skills, competencies, and experience have become integral parts of the learning process,

Concerning educational institutions, and universities in particular, it should be observed that they have manifested themselves as truly enduring institutions. They have existed in the course of many centuries. Though what can be described as their core competencies becomes a crucial ingredient for surviving in the network economy, the seemingly paradoxical question raised by different scholars is if these institutions will be able to endure. It is not so much the transformational process itself that seems a cause for concern – in fact, universities have witnessed and survived different periods of drastic change – it’s the scale and the scope of the

consequences that contemporary changes bring about that pose serious questions to the viability of traditional educational institutions.

Sir John Daniel, Vice-Chancellor of the Open University and author of 'Mega-universities and knowledge media' (1996), summarizes some of the most important challenges that traditional universities are to encounter:

- Emphasis on learning productivity is the route to more effective teaching. This will require institutional redesign in order to provide each learner with an experience that integrates, at a personal level, a range of interactions with the rich resources of the university;
- As the habit of lifelong learning spreads, students will become increasingly diverse. The majority will combine study and employment. Students, who will have a wide variety of academic backgrounds, will expect to choose from an extensive curriculum delivered in a convenient and affordable manner;
- The notion of an academic community will have to be conceived with less emphasis on physical campus as a common focal point. This paradigm shift may strengthen awareness of the core functions of a university and create a new basis for a sense of institutional belonging among students and staff;
- Universities will need to become increasingly adept at managing collaborative ventures with a wide variety of bodies, including other universities. Such collaboration will be required in order to offer students work-related courses and to make the investments necessary for the preparation and distribution of high quality intellectual assets such as learning materials;
- Public funds will constitute a decreasing proportion of the financial support for higher education, demanding a more entrepreneurial attitude from universities to explore other financial resources. Direct grants to institutions are likely to be replaced by mechanisms that channel support through individual students. Governments will, however, continue to develop explicit procedures to ensure accountability and quality assurance in universities.

These challenges also apply to most business schools. In a sense, business schools have been closer to some of the developments that are at the basis of these challenges, since they have had contacts with industry for a long time, have been serving a more varied student body than traditional universities, and have been using a more varied set of learning methods and techniques. This doesn't mean, however, that business schools are, by definition, more adaptive to changes and well-positioned to cope with these challenges. In the 21st century, many strategic challenges are facing higher education in general and business schools in particular: new entrants, new competitive dynamics, institutional change, and a highly differentiated demand for education are posing additional threatening forces. Indeed, a whole new playing field has emerged in the area of management education and business schools, often requiring non-traditional market approaches and new organizational arrangements.

AIMS OF THIS BOOK AND TARGET AUDIENCES

This book doesn't invite the reader to join a purely academic or theoretical journey, nor is it a mere enumeration of remarkable facts or important trends. What, then, is this book aiming for? The objective is threefold.

First of all, the objective of this book is to dig into some of the dynamics of the contemporary developments and the newly emerging playing field of management education and business schools. This means that the reader must have some understanding of some important current macroeconomic developments and the consequences of these developments for society as a whole, the field of management knowledge, management learning, and management education, as well as the logic of organization.

The second aim is to explore the changing nature of education and learning in more general terms. This includes topics like paradigmatic changes in attitudes and opinions about learning and the (consequences of) the use of ICT in creating learning environments.

Thirdly, this book aims for an exploration of the network perspective, especially from an organizational and managerial viewpoint, and to describe a vision on the consequences of the network concept for management knowledge, skills, competencies, learning, and business school organization.

This book takes on the challenge of exploring reality from a network perspective. It's not the first book that takes this concept as a central point for elaborating on and explaining dynamics in different parts of society's realm. Many publications – some quite renowned – have preceded. For example, Manuel Castells, author of a comprehensive trilogy on the Network Society, has produced seminal work from an economic and sociologic view on this theme. From a business perspective, Raymond Miles (former dean of the Haas School of Business at Berkeley) and Charles Snow (Professor of Business Administration at the Smeal College of Business Administration at Penn State University) have written several influential articles about network organization. Ronald Burt's writing on structural holes and the social structure of competition (1992) has been deemed one of the most fertile theories regarding the functioning of networks. However, as Salancik (1995) notes, scholars are still in need of a solid network theory of organization.

Though this book will not contribute significantly to extensive theory-building on this topic, it certainly does explore different topics that are relevant from the perspective of the organization of contemporary management education, management learning, and business schools from a network perspective. Conceptual understanding and exploration of this perspective in the field of management education is perhaps what best fits the idea of this book. Therefore, this book is of a more conceptual nature, trying to get a grip on environmental dynamics and

organizational logics that are in force by looking at things from a specific angle. Therefore, a number of concepts and ideas from the perspective of management education and business schools will come to the fore that provide some insights into the central subjects.

Hence, a broad range of topics is covered in this book, ranging from explorations into the dynamics of the 'new economy', the content of the management curriculum, new ways of management learning, and the role of ICT in creating learning environments to the developing playing field and emerging organizational modes of management education.

This book will therefore be of interest to a relatively wide range of audiences. It should first and foremost appeal to business schools and their stakeholders – including administrators, faculty, staff, students, industry and government. Educational administrators in general may also want to read this book, as well as every person interested in (the future of) management education and learning.

Still, there is more to the transformation in management education and business schools than the topics will touch upon. This book may not do justice to the variety of different institutions of management education, nor will it exhaustively elaborate on every subject. Nonetheless, it is a description of some of the most important developments and challenges in this particular field and provides a vision on how management education and business school organization may look like in the network economy.

COMPOSITION OF THIS BOOK

The writing of this book was seen as an opportunity to discuss an encompassing set of topics concerning management education and business schools in the 21st century's network economy. To a certain extent, the book deals with its title's different constituting topics.

In Chapter 2, the book takes off broadly by examining some of the essential characteristics and dynamics of what has been called the new economy. In this chapter, a picture is portrayed including definitions of the new economy, macroeconomic perspectives, future outlooks, and, at the end of this chapter, different views on the new economy which have in common the assumption that the new economy is largely about the importance of intangibles in common. It shows that ICT as well as knowledge are central defining elements in the new economy, as opposed to the agricultural and industrial era, causing learning and education to move centre stage as a way of economic development. Finally, the idea of conceptualizing the new economy in terms of a network economy and network dynamics is incepted, serving as an outset of Chapter 3.

Chapter 3 introduces a network perspective, since such a perspective allows for integrating different views on and defining characteristics of the new economy into

CHAPTER 2

THE NEW ECONOMY

INTRODUCTION

Generally when speaking of the new economy, reference is made to the role information and communications technologies (ICT) play in society. In fact, there has been a tendency to relate much of contemporary economic successes to the contribution of ICT. Indeed, ICT has led to what is called the compression or even the collapse of space and time, meaning that it enables continuous information exchange and the development of global economic structures. Space and time do not matter as much as they did in the 'old economy'.

It is clear that we have entered a new era of economic development that is accompanied by the emergence of a new economic landscape. But it seems a landscape full of paradoxes, not in the last place due to the prominent place technology and knowledge capture. According to Alan Webber, former editorial director of the Harvard Business Review, the whole logic of the new economy is founded on paradoxes. He says:

"[The] process of technological transformation is a curious paradox. Think of it as the 'self-canceling technological advantage'. As technology transforms the logic of competition, technology disappears as a sustainable source of competitive advantage"
(Webber, 1993: 26-27).

So, what is this new economy about, really? Is it as 'new' as it has been claimed to be? Is it about globalization? Is it the emergence of the information era and the impact of ICT? Or is the new economy a mix of interdependent features that is too complex to be unraveled?

In order to explore the central characteristics of the current economic landscape, to round out the dynamics of contemporary competitive structures, to discuss the influence on the way companies behave and (re)structure themselves, and to explicate the role of ICT, knowledge and global economic structures, some essential insights on the new economy are provided in this chapter. In fact, this chapter will scout what this phenomenon called the new economy actually seems to comprise, how it can be defined, and what its main drivers are. After having briefly defined the major characteristics, the focus will first be on a macroeconomic perspective and some implications of the main drivers behind the economy. More detailed information is provided on the role ICT plays in the new economy, so as to establish its true importance, which still seems a rather controversial issue.

Next, the issue of value creation in the new economy will be dealt with from a number of specific and challenging point of views. Since the new economy will prove to be about intangibles, too, the focus of the ways of value creation will be on perspectives that include the importance of knowledge, experience, and attention.

THE NEW ECONOMY AND INDUSTRIAL REVOLUTION

In recent years, much has been said and written about the so-called new economy. Though very different conceptions of this new economy have surfaced, it has appeared that it refers to an economic era characterized by a whole new set of economic activities, economic turbulence, new organizational forms, and paradoxes. Corporate activity, including huge mergers and acquisitions, numerous internet start-ups and restructuring processes like downsizing, have become high and global, while at the same time ICT has deeply penetrated all layers of society without apparent productivity gains. In this era, change seems to be the only feature that comes close to safe *ceteris paribus* conditions.

This new economy has brought about economic industriousness of a totally different nature and of completely distinct dimensions. Just as the second industrial revolution moved society from local to national economies, by entering the third industrial revolution the global economy will be the scope that matters. Illustrative for this is the observation that the emerging global companies are larger than any national companies ever seen. The market value of the world's largest company in 1990 (a national company, Nippon Telephone from Japan) isn't even close to make it to the 1998 list of the ten largest companies in the world (Martin, 1998). The scope, reach and power of business has become global, and has – especially relative to governments – immensely increased.

For about eight thousand years, wealth was created by agricultural activity. With the world's first industrial revolution at the end of the eighteenth century and the beginning of the nineteenth century, this source of wealth creation came to a large extent to its end. While, in retrospect, the end of the nineteenth century and the steam engine can be considered to be the hallmarks of the second industrial revolution, we already speak of current structural economic transitions to be the third industrial revolution, which is commonly described as the information or knowledge revolution. Boisot (1998) speaks in terms of the transition from an energy-based to an information-based society. In the old economy, the traditional production function shows a trade-off between labor and capital. Capital, represented by new technologies, replaces labor-intensive production, while in the knowledge or information economy there's a trade-off between data and physical production factors. The knowledge or information society arises as a consequence of the gradual substitution of physical production factors by data.

As was the case in the second industrial revolution, corporations that are positioned to take advantage of this third industrial revolution can achieve high rates of returns and growth, even though the economy's growth rate is lagging compared to previous

decades. New big firms, and new big fortunes, can virtually grow as if by magic. In contrast to struggling giants, threatened by the pace at which technological developments take place, new firms have the advantage of not having to destroy (parts of) themselves in order to remain competitively viable, let alone save themselves from total downfall. The new economy demands industrial restructuring, instigates to rethinking value creation, and puts pressure on traditional sectors.

Oil is a revealing example of the impact of the information or knowledge revolution on an traditional industry. The oil industry used to be an industry of luck and brawn, but now leans heavily on brainpower. Supercomputers permit three- and four-dimensional acoustical soundings, which has resulted in a factor ten increase in hit rates for finding new oil and doubled extraction rates. Norway has now become the second largest exporter of oil in the world – instead of the prediction two decades ago that it would be out of oil by now – due to the possibility of drilling two miles deep into the water. On the offshore oilrigs, yesterday's well-paid muscular workmen have been replaced by well-paid knowledge workers. The industry is still producing oil, but in such profound different ways that it can be characterized as a knowledge industry. As a result of these technologies, reachable oil supplies have expanded much faster than demand, and real prices have fallen to the lowest levels in human history (Thurow, 1999: 27).

With rapid changes and advanced developments in technology, it is far from sure where future profits will be made. The question, therefore, is where and how wealth is created in the new economy and where value-adding activities take place. It's not just a matter of technology, nor is it solely a matter of information or knowledge. One should not take for granted the euphoric voices and noises that hail only a preoccupation with ICT, though this is undoubtedly one of the most important drivers of the new economic landscape.

DEFINING THE NEW ECONOMY

The use of the term 'new economy' is by now more than widespread, though managers, policy-makers, scholars, and business magazines that are referring to it, seem to have different perceptions, or even models, in mind. One prominent conception of the new economy is the view that it is merely about information and communications technologies (and young entrepreneurs starting internet companies). Though it's an understandable view, and also a partly true one, this seems to be only a small part of what the new economy actually comprises. Besides, several prominent scholars and new economy gurus, like Donald Tapscott, actually do, in fact, place ICT at the center of anything that pertains to the new economy. Important here is to keep in mind that ICT is a central element in the new economic order as a driver in the sense that ICT has an enabling role. Therefore, it's the central aim of this section and the following sections to acquaint the reader with a broad range of (macro)economic topics related, and often directly assigned, to the concept of the new economy. In order to do this, however, it's necessary to get a definition of this

new economy. A good starting point and a rather encompassing definition of the new economy is provided by Wired's Encyclopedia of the New Economy:

"When we talk about the new economy, we're talking about a world in which people work with their brains instead of their hands. A world in which communications technology creates global competition – not just for running shoes and laptop computers, but also for bank loans and other services that can't be packed into a crate and shipped. A world in which innovation is more important than mass production. A world in which investment buys new concepts or the means to create them, rather than new machines. A world in which rapid change is a constant. A world at least as different from what came before it as the industrial age was from its agricultural predecessor. A world so different its emergence can only be described as a revolution" (Wired's Encyclopedia of the New Economy).

A quote originating from Davis & Meyer complements this definition, by saying that the new economy is governed by new rules, since it encompasses a whole new business reality and economic landscape:

"It's a whole new economy. It's a new business reality resulting from the convergence of three huge forces. You can't get a bead on it because it's a moving target – today's business is marked by unprecedented speed. You can't get your arms around it because it's intangible – the assets that create the most value are not on the balance sheet. And you can't sort it out because it's a rat's nest. The interconnectedness of computers, workers, firms, and economies has reached a point where the famous 'six degrees of separation' is starting to feel more like three" (Davis & Meyer, 1997: 17).

The new economy, following these descriptions, is a knowledge and idea-based economy where the keys to job creation and higher standards of living are innovative ideas and technology embedded in services and manufactured products; it is an economy where risk, uncertainty, and constant change are not the exception but the main rule (The New Economy Index website). Looking at these definitions, one could draw the conclusion that new economy adherents say it really is a new economic era, while, on the other side, new economy adversaries say it definitely isn't: there are no new rules to survive in this economy. Old economic rules still apply, skeptics and adversaries say.

Different scholars assert that this new economy is characterized by fundamental economic transformations. With these transformations, some say, new economic rules are coming into force. But it is the strong and blatant presence of such proclaimers of the new economy, especially those who have been labeled new economy gurus and fad-chasers, that has triggered criticism: this period of disinflationary growth (continuing rapid economic growth, without a stronger than proportional rise in the level of inflation) will end, critics say, and they predict that growth will eventually decline. In a more fundamental and general sense, some authors say there's not that much new to this new economy or even that there's no such thing like a new economy. The influential economist Paul Krugman, for example, is one of these authors. He contends that there is in fact nothing new about technological change and that productivity measures do not measure all productivity in 'any new economy'. Moreover, economic change always seems more dramatic to the people living in such an era of change than mankind, in retrospect, tries to believe when people encounter economic change.

However, there is something new about the economy, as tends to happen about every fifty years (defined as Kondratieff cycles). In fact, it's not the first new economy. From a different point of view, and depicted in table 2.1, global development unfolds through the succession of new economies, underpinned by Schumpeter's concept of creative destruction. The new economy about which people are talking now is, in a sense, an economy that's somewhat reborn, meaning it has successfully weathered what could be termed as a maturity crisis and has challenged relatively recent predictions of economic decline (Norton, 1999).

	Also known as	Period	Main symbols
<i>New Economy #1</i>	The Industrial Revolution	1787-1842	Cotton textiles, iron, steam power
<i>New Economy #2</i>	The Bourgeois Kondratieff	1842-1897	Railroadization
<i>New Economy #3</i>	The New-Mercantilist Kondratieff	1897-1939	Electricity, automobile
<i>New Economy #4</i>	The Cold-War Kondratieff	1939-1989	Defense, TV mainframes
<i>New Economy #5</i>	The Information Age	1989-????	PCs, telecommunications, entertainment

Table 2.1. Five 'new economies'.

Source: Norton (1999)

When taking a broader and more profound economic perspective, some unique elements and developments that constitute the new economy can be discovered. In the next sections a macroeconomic perspective and a focus on the contribution of ICT is taken to illustrate this.

THE MACROECONOMIC VIEW: STRUCTURAL FEATURES OF THE NEW ECONOMY

Looking from a macroeconomic perspective, Norton (1999) states that the idea central to the new economy is that ICT is creating higher productivity growth, which in turn accounts for faster growth in output without a rise in the rate of inflation. Though it can be argued that some of the skepticism of people seems very legitimate ("Everywhere I see computers, but in productivity statistics", Robert Solow once said), others state that in the new economy measurements of productivity are simply useless. After all, the only ones who should worry about productivity are in fact not human beings, but robots, as Kevin Kelly's argument reads. And the areas of the economy that has shown a rise in productivity have been US and Japanese manufacturing sectors, which have seen an annual increase of 3% to 5% in the 1980s and the 1990s. It's these kinds of sectors where the measure of productivity can be a useful one (Kelly, 1998).¹

¹ In later sections of this chapter, a more profound look into the interplay (and discrepancies) between ICT contributions and productivity measures is taken.

CHAPTER 3

THE NETWORK ECONOMY

INTRODUCTION

In this chapter, the concept of the network economy is expounded. The idea of a network economy allows fundamental aspects of the new economy to be integrated into one single (organizational and managerial) concept. The information technology revolution has resulted in the development of advanced infrastructural technological networks. These networks enable and induce global communication and information sharing at decreasing cost and at an increasing speed. Knowledge is being transferred through these interconnected ICT applications and it can be said that, taking into account the prominent place of knowledge in the new economy, it functions as the glue that holds networks together.

Speed, intangibles (knowledge), and connectedness are the three key constituting elements of the new, network economy. As a result of these three factors, one can observe the development of widespread and highly developed social, economic, and technological networks – all interconnected and to an increasing extent interdependent. Both ICT, together with the global scope they create, and knowledge, therefore, are central parts of the network economy. The ongoing process of globalization has resulted in the omnipresence of business in the global marketplace. Many firms now have multiple production sites, regional headquarters, and have access to numerous distribution channels at their disposal.

Next to its encompassing conceptual nature, network organization provides a relatively neutral and sufficiently moldable (and therefore managerially viable) perspective, which has been used in a number of disciplines, like computer sciences and sociology. Network organization, therefore, has the potential to acknowledge and integrate contributions from a range of academic fields, resulting in a holistic perspective. As Van Alstyne notes from this point of view:

“In computer science it represents the linked processor: ‘networking computers’ brings to mind issues of communications, errors, protocols, and control architecture. In economics, networks relate to coalitions and externalities: neither market nor hierarchy, they may still concern vertical integration, scale efficiency, firm boundaries, decentralized incentives, and non-cooperative gaming behavior among agents. And in sociology, the word network calls up connections – lines of interpersonal affiliation and political influence: ‘networking’ at a social function, for example, recognizes the importance of individual persuasion and non-economic aspects of social pressure as the context for group activity” (Van Alstyne, 1997: 84).

As has appeared from the previous chapter, different developments leading to and within this new economic landscape have, particularly, influenced the emergence of

interlinked business relationships or business networks. The impact of technological developments – especially in the field of ICT – and globalization of both the business, (socio)economic, and the political arena has led to a redefinition of different playing fields, evoking profound changes in competitive forces, corporate behavior, and consumer demands. For instance, deregulation, increased competitive pressure, shorter product lifecycles, the need for mass customization, short time-to-market, lean production, focus on core competencies, and flexibility all have contributed to the genesis of network organization.

This chapter is organized as follows. First, the network perspective is briefly elaborated from a socio-technological point of view by Manuel Castells's informationalism paradigm (Castells, 1996). Subsequently, the focus will be on network technology, network economics, and network dynamics. Next, the network perspective is expounded from an organizational and managerial view. Here, definitions, traits, and appearances of network organization are discussed, followed by looking into the business form of the network mode of organization. Finally, challenges for business schools in the network economy are identified, upon which the following chapters will build.

INFORMATIONALISM: THE NEW SOCIO-ECONOMIC PARADIGM

According to Manuel Castells, the renowned Berkeley socio-geographer, the new economy distinguishes itself from its predecessor by the intertwining of its global and informational features, which has been illustrated in the previous chapter. It is informational because productivity and competitiveness of units or agents fundamentally depend upon their capacity to generate, process, and apply knowledge-based information. It is global because the core activities of production, consumption, and circulation are organized on a global scale (Castells, 1996: 66). At the heart of this transformation towards the new economy lies the information technology revolution, which makes this new economy primarily a network economy or network society. The rapid and pervasive development of information and communication technologies can be seen as the most important enabler for the take-off of the new economy, in his view.

The internet is undoubtedly the most notorious example of a network infrastructure. Besides the abundance of information available, a prominent feature of this complex network architecture is its connectedness: it is made up of numerous computer networks capable of linking up to each other in almost infinite ways. Such a world-encompassing network enables the accumulation of knowledge and is oriented towards higher levels of complexity in information processing (Castells, *ibid.*, p. 17). This lies at the basis of what Castells calls *informationalism*. Informationalism is based on a paradigm of new technologies. The term paradigm refers to the cluster of interrelated technical, organizational, and managerial innovations, which commence new ways of doing business and management. The contemporary change of paradigm can be seen as a shift from a technology based primarily on cheap inputs of energy to one predominantly based on cheap inputs of information derived from advances in microelectronic and telecommunications technology (see Castells,

1996: 60-61). Next to technological structures, it also brings with it new social structures, since it provides an organizational logic of global networks of capital, wealth, power, knowledge, information, and symbols around which important social functions are being organized. Although the shape of this new paradigm is not entirely clear yet, this paradigm is characterized by several features (cf. Boisot, 1998):

- *Ubiquitous impact*
As information forms an integral part of all human activity, the new information technologies have impact on all human spheres of life. There is hardly any domain of human activity that will be kept untouched by the pervasive effects of information technologies;
- *Flexibility*
Organizations are able to change constantly and become fluid to a large extent. The ontology of the organization becomes unclear as the boundaries are changing and to a large extent are blurring and reshaped;
- *Convergence*
A next characteristic is the convergence of specific technologies into a highly integrated, global system. This technological convergence has revolutionized the impact of information technologies during the second half of the 1990s and will continue in the next few years;
- *Network logic*
The last characteristic of this paradigm refers to the network logic of information technologies as they become integrated in globally connected information systems like the internet.

The use of new technologies has resulted in the internationalization of core economic activities, such as the functioning of financial markets, multinational enterprises, and the production of highly skilled personnel. No part of the globe has to be isolated from the rest of the world anymore. This global interaction now forms the basis for management, productivity, and competition, which are expressed in more divergent ways than has been the case in former times. As a result, new principles for organizing have emerged. These principles (see Castells, 1996) are being revealed by:

- A transition from mass-production to flexible production;
- A crisis for large corporations (traditionally based on vertical integration), and a focus on the vitality and flexibility of (subcontracted) small- and medium-sized enterprises (SMEs);
- New methods of management (many of which have originated within Japanese firms, such as Kanban, Total Quality Control, just-in-time management, multifunctional labor, worker participation, reduction of uncertainty);

- Networking between SMEs, i.e., linking up with each other and being licensed/subcontracted by umbrella corporations;
- The formation of strategic alliances between larger corporations, limited in time and/or by specific markets, products, and processes (not excluding competition in other fields);
- A shift from vertical bureaucracies to horizontal corporations (forming networks within each firm), where the operating unit is the business project rather than the bureaucratic department.

These changed principles bring about new dynamics in the economic landscape and particularly in the business environment. A different scope, different dynamics, and a different mode of organization come into play.

NETWORK TECHNOLOGY, NETWORK ECONOMICS, AND NETWORK DYNAMICS

The term network society is not merely referring to the new media network that has been developed in recent years but more in general to the successor of the mass society that has grown to full maturity in the 20th century. The mass society has been developed interrelated to the industrial revolution during which large concentrations of people came together in industrial towns, schools, armies, and factories (one place, one time) (Van Dijk, 1999: 23-24).

The process of transformation towards an informational economy is complex and can to a large extent be attributed to the rise of new information and communication technologies. Before ICT could revolutionize business environments a process of technical convergence of different communication networks was needed. Van Dijk (1999) has described this process of technical convergence in three convoluted and interrelated developments.

First, there was the revolution in microelectronics, which led to four generations of computers in 30 years. The miniaturization of components underlies this revolution in computer technology. Through the invention of the integrated semiconductor, the chip, it became possible to concentrate hundreds of thousands connections on a plate of a surface of just a few square millimeters. The capacity of these chips increased exponentially (Moore's law). The real value of this chip technology lies in its multifunctionality, in the sense that this technology could be applied to a whole series of electronic media. It could be applied to central telephone exchanges and micro-electronic updates. It also caused a drastic decentralization of computer processing by which data communication became an important phenomenon. Thirdly, chips and processors were used in audiovisual equipment, which enabled transmission and reception of sound and images on a large scale.

The second main development was, what Van Dijk (1999) calls, the gradual digitalization of all data streams between every piece of hardware used in telecommunication, data communication and mass communication. Until that time telecommunication and mass communication were using natural analogue signals

for text and images. The main problems with analogue signals were the slowness and the fact that these were subject to interference and therefore to misinterpretations. With digitalization, signals are chopped in into identical pieces (zeros and ones) which could be transmitted easily and fast.

The third main technical development concerns the lines of transmission, transmission capacity and transmission and reception techniques. ICT advancements account for higher bandwidth, increasing volumes of bytes to be transmitted, and increasingly compatible technologies. As time goes by, an integration of techniques and technologies can also be witnessed.

The main implication of this technical convergence was that all sort of intangible goods can be processed, stored and distributed over the networks in a easy and cheap way. Like Webster (1995) points out, these information networks routes have become the highways of the modern age, akin to the railways, roads and canals of the industrial era. This new ICT based infrastructure can be seen as the physical foundation for the information or network society. Figure 3.1 pictures the convergence of different technologies constituting the network economy's physical foundation.

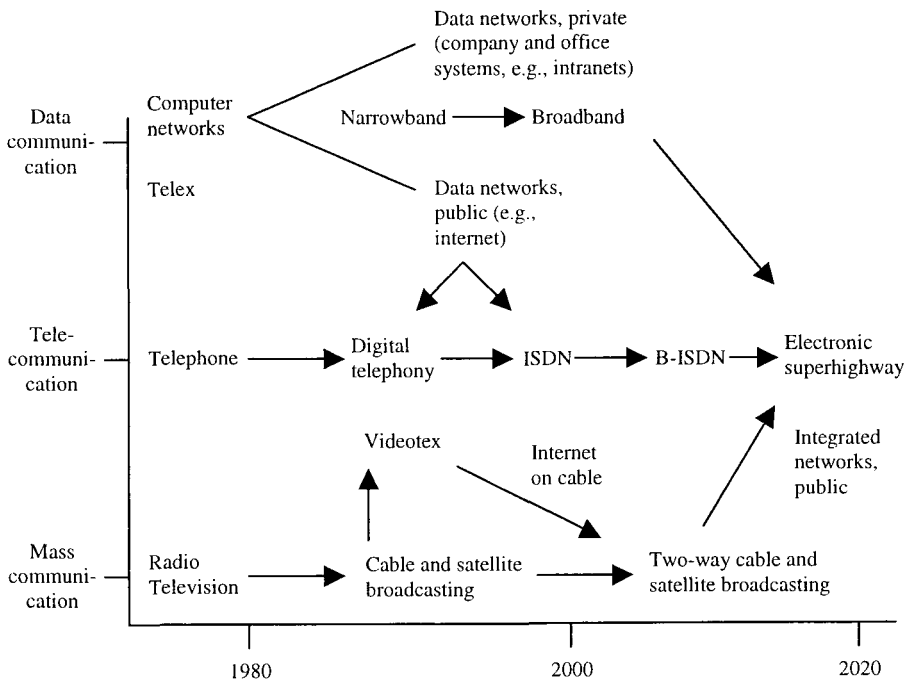


Figure 3.1. Integration of technologies over time.

Source: Van Dijk (1999: 10)

CHAPTER 4

THE MANAGER OF THE 21ST CENTURY

Management knowledge, management skills, and the management curriculum

INTRODUCTION

As became clear from the previous chapter, the network economy differs from its predecessors (the industrial and the agricultural era) in fundamental different ways. Consequently, a different economic reality has emerged as well as new organizational logics. Managing in this network economy, therefore, diverges from the characteristics of the managerial job in previous eras. Not only has knowledge moved center stage in the network economy, novel fields of knowledge have also emerged and are developed quickly. Moreover, the art of management has become more complex in this new economic reality, not in the least place by increased market volatility, uncertainty, the scope of corporate activities, and the pace of technological developments. Network economy managers are continuously encountering new challenges, constantly requiring adjusting and adapting the managerial role.

The ever-proliferating set of characteristics and competencies that seem to make the managerial role increasingly illusive is needed to survive in an uncertain future. The managerial job itself resembles the complex structure (and traits) of a network organization on a micro-level. In addition, with a new economic reality and changing views on how business should be organized, management knowledge also changes rapidly. Management knowledge should reflect these transformations and the challenge facing business schools, from this perspective, is to transform management education in such a way that it offers the required skills and knowledge for the network society.

This chapter starts by looking at the new way in which knowledge is produced in the network economy, according to ideas stemming from Gibbons et al. (1994) in which the 'production' and transfer of this knowledge is grounded. In addition, it elaborates on what set of skills, competencies, and what knowledge is relevant for the managerial job in the network economy. Obviously, the managerial role should be geared to the vigorating organizational logics and current developments in organizational behavior, technology, human resources, and other functional fields. But what, exactly, does the managerial job look like in the network economy? Additionally, this chapter will explore

the business school curriculum, what it contains, and what functional fields should be represented in the management curriculum.

THE NEW PRODUCTION OF KNOWLEDGE

The newly emerged economic landscape, which has been labeled the network economy in the previous chapter, poses new demands and challenges on business and managerial functions. Managers that are being confronted with these challenges will experience that traditional beliefs, assumptions, and methods of approach will no longer suffice. Knowledge, in particular, becomes the major production factor (or, as some say, the key feature underlying all production factors) in the network economy. However, the nature of knowledge has changed. When focusing on management knowledge in the network economy, this transformation can be illustrated by looking at the new way in which knowledge is produced.

Gibbons et al. (1994) contend that in this postmodern age one can speak of a new production of knowledge, as opposed to traditional knowledge production and dissemination. Classic knowledge production (Mode 1) takes place independently of context and practical application and refers to knowledge production in the sense of sound scientific practice. In the words of Gibbons et al.:

"Mode 1 refers to a form of knowledge production – a complex of ideas, methods, values, norms – that has grown up to control the diffusion of the Newtonian model to more and more fields of inquiry and ensure its compliance with what is considered sound scientific practice. Mode 1 is meant to summarize in a single phrase the cognitive and social norms which must be followed in the production, legitimation and diffusion of knowledge of this kind. For many, Mode 1 is identical with what is meant by science" (Gibbons et al., 1994: 2-3).

Hence, knowledge production in the network economy deviates from traditional knowledge production. Compared to the new mode of knowledge production (Mode 2), Mode 1 is based on other premises. Some of the most essential differences are depicted in table 4.1.

Mode 1 Knowledge production	Mode 2 Knowledge production
Problems are set and solved in a context governed by the, largely academic, interests of a specific community	Knowledge is carried out in a context of application
Disciplinary	Transdisciplinary (knowledge resides complexes of heterogeneous networks)
Homogeneity	Heterogeneity
Hierarchical, aimed at organizational preservation	More heterarchical and transient

Table 4.1. Mode 1 versus Mode 2.

Source: Gibbons et al. (1994)

The transition of Mode 1 to Mode 2 reflects the transition to a network economy. The new production of knowledge transcends traditional disciplines and epistemologies, and clearly incorporates elements of co-development, negotiation, and balancing 'supply and demand' in this production. The sources of knowledge origination and production become to an increasing extent diverse, just as the demand for differentiated forms of specialist knowledge comes from multiple sources. The localized nature of knowledge production is an essential characteristic of Mode 2 knowledge production. This organizational dimension is marked by an increase in the number of potential sites where knowledge can be created, the linking of sites together in a variety of ways through functioning networks of communication, and the simultaneous differentiation, at these sites, of fields and areas of study into finer and finer specialities. Next to universities and institutes of higher education, non-university institutes, research centres, government agencies, industrial laboratories, think tanks, and consultancy firms produce knowledge in an interactive process. This interaction is facilitated by the electronic, organizational, social, and informal links that exist in and between networks. The continuous recombination and reconfiguration of specific (sub)fields of expertise forms the bases for new forms of useful knowledge. Over time, knowledge production moves increasingly away from traditional disciplinary activity into new societal contexts (Gibbons et al., 1994).

Within Mode 2, therefore, different contexts are linked together, creating organizational arrangements that are combining the academic venue, the public venue, and the market venue. Examples of such new contexts include the rapid emergence of corporate universities and institutes aimed at start-ups in the sector of advanced technologies (such as BioPartner in the Netherlands, a network and platform for life sciences entrepreneurs) over the last years (see also Chapter 6). As a consequence, working, learning, and researching in Mode 2, bring issues of social accountability, reflexivity, and quality control into play. People from diverse backgrounds cooperate on a temporary (project) basis, working on a specific problem in which they all have a interest. Actors have to consider and appraise each other's needs and inputs and integrate elements of alien contexts into their own contexts. This invokes higher levels of awareness of each other's contexts and requires flexibility in the interpretation, and definition of research problems, while at the same time pointing at to the broader dimensions and implications of (the outcomes of) their research. In addition, quality assessment involves more than mere peer-reviewing individual contributions, placing broader dimensions, like social, economic, and political impact areas, center stage. Hence, Mode 2 knowledge production can be labeled as networking, networked, and network knowledge. Knowledge is differentiated and resides in heterogeneous networks.

From the perspective of management knowledge, a shift towards Mode 2 of knowledge production means a reinforcement of the plea for interdisciplinarity and managing in and between contexts. This indicates the need for skill-building and the ability for a manager to assert him- or herself in complex and a range of different situations (contingency argument). The next sections explore the demands put on and the competencies required

for the 21st century manager from the point of view of the network economy, which are fundamentally grounded in the requirements of managing in Mode 2.

ROUNDING OUT THE MANAGER'S JOB FOR THE 21ST CENTURY

The managerial function has undergone considerable changes during the last century. Formerly, a manager was seen as a homo economicus, or a homo rationalis, objectifying and monitoring the individual corporate operations. This epoch was characterized by a rather mechanistic view of management, top-down command structures, and strict hierarchic interpersonal relations. Within this classical view of managers, emphasis was put on the 'controlling' job. Henry Fayol and Frederick Winslow Taylor are seen as two of the most famous representatives of this view, while Luther Gulick and Lyndall Urwick used the acronym POSDCoRB (planning, organizing, staffing, directing, coordinating, reporting and budgeting) to categorize the activities within the managerial job about seventy years ago.

As time has gone by, the business environment has transformed into a different playing field, posing different demands and challenges on the management function. This changed competitive reality urges managers who want their enterprises to be and remain competitive to search globally for opportunities and resources, maximize returns on all the assets dedicated to a business (whether owned by the manager's firm or by other firms), perform only those functions for which the company has, or can develop, expert skill, and outsource those activities that can be performed quicker, more effectively, or at lower cost, by others (Snow, Miles & Coleman, 1992). Within the 21st century playing field, firms are continuously engaged in boundary-busting, adaptation processes, learning processes and creating the required knowledge and skills to achieve a competitive edge in the turbulent environment of the network economy. The fragmenting impact of firms and often paradoxical processes within them, not only makes it difficult to draw a clear line between the firm and its environment, but also causes their employees to view them and their environments as complicated, turbulent, chaotic, antagonistic, complex and ambiguous realities (Baets & Van der Linden, 2000: 41). Due to these fragmentations, as well as the importance and locus of knowledge and skills, the position of the manager can be viewed as being no longer unique. When a firm's most important assets are its knowledge and skills, then the true capabilities and competences of an organization lie in the worker's mind. As Baets & Van der Linden note:

"Almost everyone can be considered to be a manager in the traditional sense, even the secretary/executive assistant, who must possess a sophisticated level of communication as well as professional skills. Strategic leadership, that was typically part of the traditional management role, for example, is much more widely distributed than ever before" (Baets & Van der Linden, 2000: 41).

The question then becomes, what knowledge and skills should reside within the managerial role for the new, networked era? To answer this question, the following

sections will take a deeper look into the nature of the manager's job, managerial roles, and leadership issues associated with it. First these subjects are elaborated from the perspective of the individual manager – say, the characteristics of the managerial role and the issue of leadership. Secondly, the focus will be on the necessary management knowledge for the 21st century.

TRAITS OF THE 21ST CENTURY MANAGER

Numerous books and articles have been written about the manager and leadership over the past decades. Generally, the hallmarks of leadership are described in two different models: the traits of successful leaders and the behaviors correlating with business success. The former category consists of vision, self-confidence, ambition, intelligence, social skills, while the latter emphasizes that leaders create a vision that others follow; they articulate deeper feelings of their followers and they act in ways that are consistent with the value they represent to others (Frank & Porter, 1997). Empirical studies support the idea of no normative or best style of leadership, and seem to emphasize the contingent character of managerial work and leadership. An effective manager would have to be able to deal with rapid changes, uncertainty and complex and diverse environments both within and outside the firm's boundaries. A vast amount of research on the role and behavior of managers and on defining what leadership actually comprises has been built upon studies by Mintzberg (1973 and 1994), Stewart (1970), and Luthans (1988). In 'The nature of managerial work', Henry Mintzberg concludes that managers have to be 'well-rounded'. Deceptively simple as this observation may be, it in fact implies that a manager's job is of a very complex nature, commanded by contingency. A manager needs must know at least something about everything, being able to manage in a myriad of situations.

Until recently, however, conventional literature has curiously enough emphasized only single particular traits (Mintzberg, 1994). The *need* for leadership in business renewal, however, is undisputed. Less clear, however, is how to *perform* as a leader. Tom Peters tells us that good managers are doers; Michael Porter suggests they are thinkers; in Abraham Zeleznik's and Warren Bennis's view managers are leaders. Others contend managers are facilitators, coaches, or completers. Recently, an article on contemporary leadership characteristics was published in Fortune magazine, called 'Have you got what it takes?' by Thomas A. Stewart (1999), exploring what qualities should reside within the idealtype manager to succeed in the 21st century's corporate environment. Stewart contends that tomorrow's captain's of industry must be e-commerce adapt and old economy tested; must have powerful analytical skills and superb instincts; must know EPS, TCP-IP, ROE, HTTP, EVA and WAP; must be innovators, visionaries, and change agents; must know the difference between an thin client and a lean supply chain; must be able to say 'no' in a way that doesn't demoralize; must be able to inspire people to exceed their own expectations; must be coaches and team players; must have spent several years working on another continent; must be able to work harder and longer than

CHAPTER 5

THE NEW LEARNING

INTRODUCTION

Since knowledge is the key to competitive advantage in the new economic landscape, education and learning become of paramount importance in the network economy. Though education has been a relatively stable institution regarding its presence and its delivery, the rise of the network economy is responsible for creating new dynamics in this field, among which a true paradigm shift.

ICT, particularly, poses questions, challenges and possibilities to the delivery of education and traditional concepts of learning. Applications of educational technology, which have recently been captured by the term e-learning, are enabling learning independent of time, place, and pace. Entire virtual learning environments are being developed and experimented with throughout education.

Underlying these issues, there's a broader transformation to be observed, namely changing relationships between education, learning and work. The distinction is between work and learning is fading and lifelong learning has become a prerequisite in the network economy, not an option. Hence, the context of learning is severely altering. A variety of learning environments is occurring, comprising a broad range of different learners with different learning styles and demands, requiring different pedagogical approaches.

This chapter can be divided in two clearly distinguishable parts. The first part deals with changes in the view of learning. The new learning represents a educational paradigm that is significantly different from the former educational paradigm. The new educational paradigm includes several profound transformations with respect to learning. Subsequently, the focus will be on The new learning and management learning, and some new, active forms of management learning will be explored. The attention then shifts towards the organization of learning through communities of practice and networks, approaches that seem viable future options from the perspective of management learning.

The second part of the chapter elaborates on one specific transformation within the new educational purview, namely the integration of ICT within education. This transformation will have such a prominent impact on learning and is a factor of such importance to business schools that it deserves some special attention. A range of aspects of educational technology will therefore come up in this part of the chapter. Finally, the focus will return to management education by exploring some

contemporary issues and examples in educational technology that are relevant from a business school perspective.

FEATURES AND PRINCIPLES OF THE NEW LEARNING ENVIRONMENT

In the network economy, knowledge, education, and learning are key sources of competitive advantage. Knowledge workers need to be educated, or rather have to learn, on a continuous basis since knowledge (especially management knowledge) becomes outdated within a short period of time and since the knowledge worker is working in a rather complex and information- and knowledge-rich environment. The need for education will also increase due to global competitiveness, an increase in demand (due to increasing numbers of non-traditional students, existing students staying on, mature-aged workers needing skills upgrading, and firms keen to develop specific research and training programmes, more career changes, and 'recreational' learning), and the wish for enhancing the quality of life in the future. As a result, educational institutions have been confronted by different demands and have been urged to re-engineer education in a way that fits the new economic realities. Major changes have already occurred within the educational landscape, like lifelong learning requirements, changing student demographics, pedagogical changes, and a more mercantile way of delivering education (seeing students as demanding customers and seeing education as a product schools deliver). This mercantile manner of providing education relates to the challenge of transforming education from a public service concept to a more business-like concept. Such a conception of education is characterized by a need for a market-driven and cost-efficient approach, instead of providing education for education's sake (though education does have a crucial role in forming responsible citizens and in providing basic schooling). The commercial market for education has already attracted sizeable players, like the UK Open University, the University of Phoenix, and a lot of business schools, some of which through partnerships with other players.

Some of the most striking challenges, pressures and responsibilities can be grasped by looking at several additional important transformations that can be observed with respect to the evolution of education (cf. Haug (1999), Pilot (1999), and Van Gastel et al. (1997)). These transformations reflect the most important principles on which the new learning is based.

The most obvious transformation is the development of integrating ICT into all fields of education. Extensive interconnected digital communication networks are giving rise to quick and flexible knowledge transfer and cooperative learning, and are offering possibilities for time-, place-, and pace-independent learning. In other words: learning can benefit greatly from the displaced trade off between richness and reach. ICT applications like the internet, which is an integration of different kinds of technologies, are also offering access to information sources, databases, and digital libraries. As the European Roundtable of Industrialists (ERT) says:

"Information and Communication Technology (ICT) is having a profound impact on the way we live our lives – including the way we learn. ICT therefore has an essential role

to play in European education where it can improve individual performance, enhance quality of opportunity and help combat social exclusion. Whilst ICT is only a tool, its use is nevertheless going to result in fundamental changes throughout the whole Lifelong Learning Chain. It will bring about the emergence of a networked learning community where learning can happen at any place and at any time. It is vital for the future of good health of Europe that this transformation takes place now. This involves a major investment in both human and financial terms but if this investment is not made then Europe and its citizens will suffer a serious economic and social decline as a result of their failure to keep pace with the development of the global knowledge based society" (ERT, 1997: 4).

An equally important transformation is the changing belief that effective education is based on teaching towards the belief that effective education is based on learning. It is the learner that moves center stage, while the emphasis on the instructor and assumptions regarding expert-based knowledge transfer come to mature. Learning cannot be characterized by merely transferring knowledge from teachers to learners anymore, but is increasingly being defined by the (social) construction of knowledge (see later sections in this chapter). Taking the needs and characteristics of learners as starting points for education, the role of the instructor becomes one of a facilitator, or a coach. This transformation represents a whole new, more emancipatory, paradigm concerning the education of people.

Related to this paradigm change, there's a shift from individual learning to learning cooperatively, indicating the need for learning environments in which students work together on projects, develop social skills, in which reflection and discussion are stimulated, and in which students are held mutually accountable. In addition to the learning outcomes, the focus is increasingly on the learning process. This cooperation can also be interpreted as the integration of different learning environments, like the traditional learning environment and practice, or professional environments. Cooperation seen from this context offers possibilities for developing advanced learning environments, especially with regard to management education.

A process of integration can also be observed with respect to courses in the curriculum. Instead of offering courses independently and separately, learning activities should be focused on an integrative approach, aiming at integration of knowledge and skills, reflecting real-life professional environments. From such a perspective, learning can, for example, be organized by means of project-based education, problem-directed education, or action learning. In making education more flexible and customer-oriented, there is an additional trend of modularizing and individualizing curricula. Students are being enabled to co-develop their own learning trajectories.

Next, a change from focusing on subject matter towards developing intellectual skills can be observed, particularly in the field of vocational and professional education. Students have to develop the capabilities to learn autonomously from books, each other, and other resources instead of merely learning from a teacher's lecture. This self-directed learning puts the responsibility of learning with the learner him- or herself. Subject matter, of course, remains important, but is now seen as a tool to be used in productive tasks, while the content, process, and context of those

tasks are strongly dependent on the specific fields of knowledge and future professional perspectives (Pilot, 1999).

Learning now means lifelong learning, a transformation induced by rapid changes in the environment. Knowledge and skills become outdated or obsolete within a short period of time and, hence, it's a prerequisite to constantly update knowledge and skills. This transformation is fueled by the rise of the knowledge worker and disappearing boundaries between learning and working. The latter requires a re-examination of the traditional relationships between education, learning, and working. Process-related or procedural knowledge (know-how) and skills (like generic competences for using software packages) instead of mere subject-related knowledge and skills (like learning how to use a specific software package) need to be developed, as well as learning how to learn. Burton-Jones contends:

"The shift to a knowledge-based economy demands that traditional relationships between education, learning, and work are fundamentally reappraised. The long-running debate over whether and to what extent education should be a preparation for work, as well as life, is being overtaken by events, with work and learning becoming increasingly interrelated and interdependent. Systems created in the past to provide and support education are clearly ill suited to cater for the forthcoming explosion in demand for access to learning resources" (Burton-Jones, 1999: 199).

The concept of learning has thus evolved to lifelong learning and just-in-time education, rather than being situated within traditional college years or just-in-case education. Learning now takes place beyond the walls of educational institutions, by different kinds of students, and occurs in fundamental different ways. Since learning will become a lifelong process and one of the major growth markets in the network economy, education has become serious business.

FROM TEACHING TO LEARNING: THE CONSEQUENCES OF A NEW EDUCATIONAL PARADIGM

A focus on teaching provides a different perspective on education than a focus on learning: teaching is expert-based and expert-dominated. Knowledge is, so to speak, handed over by the teacher to the student in a passive way, reflecting the view of students as empty vessels in which knowledge is poured into. Learning in this sense is the mere absorption of knowledge, and this form of education is being practiced in most educational institutions through lectures. Especially from the viewpoint of professional and vocational education like management education, these passive ways of instruction fall short of preferred (or from a customer's perspective: promised) learning outcomes. Business schools have in the course of time integrated alternative ('active') teaching methods into their curriculum, like apprenticeships, simulations, and case studies.

Learning in an active way can be conceptualized by the concept of construction, which is in fact the central concept underlying the new educational paradigm. The construction of knowledge as an educational starting point emphasizes an active role of the student/learner and a coaching role of the teacher. The teacher now becomes a 'guide on the side' instead of a 'sage on the stage'. As opposed to a passive way of learning (which can be labeled as 'instruction') constructive learners take charge of

their own learning. Learning in this sense is student-oriented, and the basic idea is that learners interactively construct knowledge in a learning context that is created by both themselves and educators. Papert describes the differences between instruction and construction as follows:

“There are two basic ideas of education. One is instructionism; people who subscribe to that idea look for better ways to teach. The other is constructionism; we look for better things (...) to do, and assume that [students] will learn by doing. When we say we educate [students], it sounds like something we do to them. That’s not the way it happens. We don’t educate them. We create contexts in which they will learn” (Papert, 1997).

Traditional classroom education, such as lectures, clearly is just one of many possible ways of learning. Educators have emphasized this passive way of classroom learning for obvious and valid reasons, like cost-based arguments and large groups of students. (And who can sustain the argument that one cannot be truly inspired by a lecture given by an overly enthusiastic professor, telling vivid stories from practice based on state-of-the-art knowledge?) Education based on constructionist assumptions turns learning the other way around. Such a constructionist perspective allows self-directed and active learning to take place. The context in which learning takes place plays an essential role in this perspective.

The question then becomes: what should such a context look like when educators facilitate learning? In order to answer this question, it is necessary to first take notice of different ways of learning. From Kolb’s learning cycle, a variety of ways to learn already becomes visible. Additional ways of learning include day-to-day problem solving, experience-based learning, on-the-job learning, action learning, learning through reflection, learning from peer behavior, experimental learning, and learning through conservation, discussion, and debate. Kolb’s learning cycle provides some insight into the process of providing adequate (management) education. This ‘experiential learning cycle’ represents four different kinds of learning processes: reflective observation, concrete experience, active experimentation, and abstract conceptualization. This model combines the need for theoretical knowledge with a need for practical application, hence rejecting the traditional educational belief that knowledge can be rigorously disembedded from practice, transferred to students, and re-embedded into practice. Especially regarding management education and business schools this traditional belief has proven to be an illusive idea.

In a 1996 study, Rajan (1996) identified four types of learning with each type containing four subsets, namely taught learning, mentored learning, distance learning, and experiential learning (shown in figure 5.1). Figure 5.1 shows the percentage of employees that used or were expecting to use the four types of learning over the period 1996 to 2000. Next to the observation that this study shows that 40% of the employees used formal off-the-job classroom-type training routes for their managers at that time, it also suggests that the overall proportion is unlikely to change over the next decade. In contrast, the percentages for mentored, experiential, and distance-based learning routes are likely to grow. Reasons for this include the ascendancy of core skills consistent with the changing market environment and the predominance of self-responsibility for learning in the current