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## New Office Concepts for New Corporate Structures

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## Abstract

Significant parts of human's life, as well as social development in general, take place in and are a product of the process of working. In this consideration the office concept through the years is a reflection of the social evolution in all its aspect – economical, industrial etc.

The office concept in its evolution adapts to the requirements and mirrors the state of the art in working standards, work priorities, communication, but is also related and depends on the state of the art of existing technologies, and further on micro and macro economic factors.

It is a reflection of the social structure, the communication within, but also out of the office itself; it is related to the corporate concept and identity; it changes with each technical innovation; office forms disappear and change rapidly because of the appearance and development of new technologies and industrial branches, but also with the corporate development from micro and macro economical point of view.

The subject of this paper work is to observe the term, the state of the art and the future trends in the concept of the office real estates. Its task is to follow the mile stones in the evolution of the office, to study the forms, in which it existed and exist and to explain the factors – economical, technological and social, which influenced and influence the appearance, the existing and the disappearance of office concepts through the years.

## Kurzfassung

Ein wesentlicher Teil vom menschlichen Leben, sowie von der gesellschaftlichen Entwicklung im Allgemeinen, findet statt und ist ein Produkt des Arbeitprozesses. In dieser Hinsicht ist das Bürokonzept durch die Zeit gesehen eine Widerspiegelung der gesellschaftlichen Evolution in alle ihren Aspekten – wirtschaftlich, industriell etc.

Das Bürokonzept in seiner Evolution passt sich an die Anforderungen an und spiegelt den Stand der Arbeitsstandarte, Arbeitsprioritäten, Kommunikation, ist aber auch verbunden und abhängig von dem Stand der Technik und weiter, von mikro- und makroökonomischen Faktoren.

Es ist eine Widerspiegelung der sozialen Struktur, der Kommunikation in, aber auch außerhalb des Büros; Es ist verbunden mit dem Unternehmenskonzept und Identität; Es ändert sich mit jeder technischen Innovation; Büroformen verschwinden und ändern sich geschwind, weil neue Technologien entstehen, aber auch mit der Unternehmensentwicklung von mikro- und makroökonomischen Gesichtspunkt.

Das Thema dieser Arbeit ist zu untersuchen den Begriff, den Stand und die Zukunftstendenzen in den Konzepten der Büroimmobilien. Ihre Aufgabe ist es, die Meilensteine in der Evolution des Büros zu verfolgen, die Formen zu analysieren, in welchem das Büro existierte und existiert und die Faktoren zu erklären – wirtschaftliche, technologische und gesellschaftliche – die beeinflussten und beeinflussen das Entstehen, die Existenz und das Verschwinden von Bürokonzepten während der Jahren.

Abstract

Kurzfassung

Content

I Introduction .....	1
1. The New Corporate Structures .....	2
1.1. Industrial Point of View .....	2
1.1.1. Kelly's twelve "rules" of the Network Economy .....	4
1.1.2. New Industries .....	6
1.1.2.1. IT and ICT .....	7
1.1.2.1.1. "Keep It Running"- The Story So Far .....	8
1.1.2.1.2. Requirements on IT and ICT for the workplace .....	10
1.1.2.2. Technologies for the Workplace .....	11
1.1.2.2.1. E-Work Technologies for the office of the future .....	12
1.1.2.2.2. The new Office Technologies .....	13
1.1.2.2.3. Intuitive and ergonomic human-computer interaction .....	15
1.1.2.2.4. Successfully Implementing New E-Work Technologies .....	16
1.1.2.2.5. Secure Implementation of new technologies .....	17
1.1.2.3. The Consulters - Drivers and Pioneers of the Knowledge Society .....	20
1.1.2.3.1. The Birth of Consulting .....	20
1.1.2.3.2. The Knowledge Factory .....	20
1.1.2.4. Knowledge Holders .....	21
1.1.2.5. Knowledge Development and Innovations .....	22
1.1.2.6. New Technologies .....	22

1.1.2.7. Work Concepts and Organisation .....	24
<b>1.2. From the cellular office to the virtual team - Economical Point of View .....</b>	<b>23</b>
1.2.1. Industrialisation.....	24
1.2.1.1. The Mass Production .....	24
1.2.1.2. Shareholder Value and Shareholder Approach .....	26
1.2.2. The Global Market .....	27
1.2.2.1. Expansion .....	27
1.2.2.2. Stakeholder Approach.....	28
1.2.2.3. Performance Management Tools .....	29
1.2.3. Innovations and Knowledge Society .....	32
1.2.3.1. Smart Growth .....	32
1.2.3.2. Radical Innovation .....	35
<b>1.3. Performance Measurement in the office .....</b>	<b>39</b>
1.3.1. The New Approach – Performance Measurement .....	39
1.3.2. From Management of Mass Products to Management of Knowledge Products – Productivity vs. Performance .....	40
1.3.3. The external influence factors on the performance (state of the art) .....	42
1.3.3.1. Identification of the Participant Sides .....	42
1.3.3.2. Identification of the System and the Influence Factors .....	43
1.3.4. Performance as a crucial success factor in the knowledge society – internal factors .....	45
1.3.4.1. Unnecessary difficulties .....	47
1.3.4.2. Motivation .....	47
1.3.4.3. Work-Life-Balance .....	47
1.3.4.4. Access to information .....	48

---

## New Office Concepts for New Corporate Structures

---

1.3.4.5.	Recognition of Achievement .....	48
1.3.4.6.	Knowledge .....	48
1.3.4.7.	Team Spirit .....	49
1.3.4.8.	Other Disturbances .....	50
<b>2.</b>	<b>The Office Concepts .....</b>	<b>50</b>
2.1.	The office concept philosophy .....	50
2.2.	History .....	51
2.2.1.	The Traditional Workplace .....	51
2.2.1.1.	The cellular office .....	52
2.2.1.1.1.	Single Cellular Office .....	53
2.2.1.1.2.	Multi-person cellular office .....	53
2.2.1.2.	The Combination Office .....	54
2.2.1.3.	The Group Office .....	54
2.2.2.	Life and Demand Cycles of the Classical Office Concepts .....	55
2.3.	The Logical Reaction – New Office Concepts .....	57
2.3.1.	New Office Concepts .....	57
2.3.1.1.	Acting on the Global Market .....	57
2.3.1.2.	Office Concepts Evolution .....	58
2.3.1.2.1.	Traditional workplace: .....	60
2.3.1.2.2.	Non-Territorial Office: .....	60
2.3.1.2.3.	Home-Office: .....	61
2.3.1.2.4.	Mobile Work: .....	61
2.3.2.	Forms .....	61
2.3.2.1.	Non- Territorial Office .....	61
2.3.2.1.1.	Concept Features .....	62

---

## New Office Concepts for New Corporate Structures

---

2.3.2.1.2. Implementation problems and conditions .....	63
2.3.2.1.3. Desk Sharing .....	63
2.3.2.1.4. Desk-Sharing and Knowledge - Accenture Headquarter Kronberg.....	65
2.3.2.1.5. Desk-Sharing and Technology – IBM .....	66
2.3.2.1.6. Desk-Sharing – Experience .....	69
2.3.3. Home-office .....	70
2.3.3.1. Own Workroom .....	72
2.3.3.2. Inaccessibility of the Workroom .....	72
2.3.3.3. The Suitable Equipment .....	72
2.3.3.4. Correct Organisation of the Workplace .....	72
2.4. Call Centre .....	73
2.5. Tele-working .....	75
2.5.1. Advantages of Tele-Working .....	76
2.5.2. Best Examples .....	78
2.5.2.1. The Flemish Government in Brussels .....	78
2.5.2.2. Cap Gemini Vienna .....	80
2.5.3. Critics and Problem .....	81
2.6. Business – Centre .....	83
2.6.1. The Advantages .....	83
2.6.2. IBM and Regus .....	84
2.7. Business-Club .....	85
2.7.1. Business-Centre .....	85
2.7.2. Team-Centre.....	85
2.7.3. Lounge .....	85
2.7.4. Workplaces in the Business-Club .....	85



2.7.5. The dvg IT-Services, Hannover .....	86
2.7.6. Business-Club Quotations .....	87
2.8. Data Centre .....	87
2.9. Satellite Office .....	88
2.10. Project Workshops .....	89
2.11. Virtual Teams .....	89
2.12. Cycles of demand for individual office concepts – empirical study .....	92
<b>3. Future trends and projects .....</b>	<b>94</b>
3.1. OFFICE 21 <sup>®</sup> .....	94
3.1.1. The concepts .....	95
3.1.2. The practical Implementation .....	95
3.1.3. Projects and Studies .....	96
<b>4. Conclusion .....</b>	<b>97</b>
4.1. Research Basis .....	97
4.2. Research Methods .....	100
4.2.1. Interviews .....	100
4.2.1.1. Questionnaire .....	102
4.2.2. Personal Visits .....	104
4.2.3. Other Sources .....	104
4.3. Results .....	105
4.3.1. Implementation's Ratio Traditional/Flexible Office Concepts according to the Industry .....	105
4.3.1.1. Consulting .....	106
4.3.1.2. Engineering .....	106
4.3.1.3. Technologies .....	107

## New Office Concepts for New Corporate Structures

---

4.3.1.4. IT/ICT .....	107
4.3.1.5. Finance .....	108
4.3.2. Implementation Ratio Traditional/Flexible Office Concepts according to Corporate Structure, Features and Culture .....	109
4.4. Presumptions and Recommendations .....	111
II Final .....	113
Attachments I-IV	
Literature	

## I Introduction

How it all began?

The idea to work on this issue came during two classes, when I twice heard two similar statements coming from two of my professors:

“Acquisition and growth are not always the only logical and best way” and “A Civil Engineer has to be active too - not to wait for changes to happen, but to search for them, to initiate them, so that he/she can be competitive and know in advanced, what the demands of a customer will be tomorrow”.

This was the beginning of a research on how progress reflects on the art of building and on the factors, which happen before the building starts its life as a project.

In this research I concentrated on the office buildings as the most intensive changing buildings under the influence of progress and development.

To understand why and how office concepts are changing, the first step is to know and understand why and how companies are changing.

During the last decades industries and technologies developed rapidly, reaching a level of progress, exceeding in a sum the entire progress of the humanity, achieved from the very beginning of the human evolution till the end of the 19 century. This progress brings with it rapid changes and transformation in every aspect of society and life – new industries appear and with them, in the conditions of extreme competition corporate structures are changing. The changing environment forces managers, technicians, architects, engineers etc to search for solutions to adapt and respond to the new challenges.

This paper researches the leading factors for the appearance of new corporate structures and presents the office concepts corresponding to the new corporate structures and conditions, but also describes the future trends for the office concepts of the next decades.

# 1. The New Corporate Structures

“Success is to have exactly the competences, which are demanded at the moment”

*Henry Ford*

The first part of this paper concentrates on the changes in society, industries and economics in the last decades, initiating a radical change in the environment, in which companies exist, as well on the way, the companies reacted to this change: the organisational and structural changes, changes in communication, corporate culture and policy.

The “new corporate structures” is therefore the system of external (knowledge society, global market, new industries) and internal (new corporate goals and tasks, new corporate culture in organization and communication) factors and features, which initiated and characterise the change within the companies, which successfully adapted to the challenges of the new time.

All components of the system are tight-knit to each other, influence each other strongly and initiate and explain the existence, the importance and the role of the other.

## 1.1 Industrial Point of View

The information revolution is seen as the most important step in human evolution so far, overwhelming even the importance of the industrial revolution of the 19<sup>th</sup> century. Information revolution is the factor, which unlocked the greatest transformation that the society of the 20<sup>th</sup> century experienced - the transition from producing to knowledge society. This transformation is on the one hand a product of systematic changes in the social, economical and industrial life, but on the other hand a purpose itself for the appearance of new industries and for radical changes in the corporate structures. What productivity was for the 20<sup>th</sup> century is knowledge and information for the 21<sup>st</sup> and the linkage between them is communication and communication technologies.

Knowledge Society is the “... world in which people work with their brains instead of hands. A world in which communications technology creates global competition (...). A world in which innovation is more important than mass production. A world in investment buys new concepts or the means to create them, rather than new machines. A world in which rapid change is con-

stant. 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." <sup>1</sup>

Fundamental technological changes are the reason for a radical economy evolution: information technology replaces industrial production, changing economy principles and organisations, which on their turn provoke changes in policy and society. This new economy form leaves traces in possible spheres.

The new technologies and industries can be separated into five waves as they appear: At the beginning is the personal computer, which can already be found in each household and is the basis for overall communication and appearance of global connections. It is the incentive factor for the emergence of new work areas and forms – for example the media-industry or online-commerce.

The second wave is represented by the telecommunications and the further development of information technologies, which are the key to knowledge society. This is the time-point where we are standing now.

The next future trends expected to gain on importance and change life and society radically are as follows: since the beginning of the 21<sup>st</sup> century – the biotechnologies, further the nanotechnologies and the alternative-energy-source-technologies. <sup>2</sup>

These five waves get their influence on all aspects of life, prepare and ease the process of globalization. Developments all over the world show trend to an open society. Some authors predict a social metamorphosis as a result of economical development: through technological changes and the raised ethos to openness, they expect the development of a new global civilization with high rates on tolerance and multicultural society. Education becomes a central issue, because information technologies and knowledge society need an educated society. The sense of globalization will influence all social formations down, reaching to the family and the forms of family life.

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<sup>1</sup> Richter 1998

<sup>2</sup> See Leslie 1997, p. 138- 148

The executive director of Wired, Kevin Kelly holds the view, that the new "Information Economy" will lead to economical, political and social overthrows. Besides, he prefers to name the new-coming economy a "Network Economy", because he sees as core factors for it not the information and the technologies themselves, but the connection and the teamwork; it is not the computer the subject of the revolutionary economy; first the communication between computers releases the overthrows. Further describes Kelly the main features, characterizing the new economy.

### 1.1.1 Kelly's twelve "rules" of the Network Economy:<sup>3</sup>

#### 1. The Law of Connection -- Embrace dumb power

The first requirement for the success and a main feature of the network economy is the connectivity: all objects are connected thorough cables or wireless connections and build the basis for a global communication.

#### 2. The Law of Plentitude -- More gives more

The more connections established, the higher the value and performance quality of the network. Every next user of the network improves its value.

#### 3. The Law of Exponential Value -- Success is nonlinear

Exactly as the products of the information technology, in the same matter "network economy" grows exponentially and not linear. At the beginning is a slow build-up, followed by an exponential growth. On the example of internet – it took decades for the www to gain on popularity before its explosion in the 90es.

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<sup>3</sup>See Kelly 1997

### 4. The Law of Tipping Points -- Significance precedes momentum

In the industry there is a break point, where cost gets equalled by benefit and this is the moment, when industries begin to make profit. In the "network economy" much more important is the period before this breaking point, because this is the time for adapting strategies. The problem is to find and optimize this point. Because the spread is much faster, the break point is decisively lower. "Network Economy" is flexible and quickly changing, so that small initial point can develop to dominating strengths.

### 5. The Law of Increasing Returns -- Make virtuous circles

This is the main characteristic and law of "Network Economy". The more users a network has, the higher the value it has. If the value increases, increases also the users' number. Thus, not only the owner of the network, but also the whole network society has a benefit.

### 6. The Law of Inverse Pricing -- Anticipate the Cheap

The most revolutionary change in goods marketing - something unimaginable for just a couple of decades - is the trend, that the most qualitative products are marketed as the cheapest or even free. This Network Price Flip is also described as a Gilder's Law. For example: telephone cost will further decrease or vanish completely, but every additional data-port, connection etc. will be the profitable component of the service.

### 7. The Law of Generosity -- Follow the free

The most valuable product will be the products for free. They are free because the aim is to develop them to standards. The profit for the companies comes from patches, build-up versions, add-ons, for which the customer will have to pay. This approach ensures the gaining of a starting-share (a mind share) of a product, which in the best case develops itself to a market share.

### 8. The Law of Allegiance -- Feed the Web first

There is a radical change in the approach to customers. To bind the customers, companies have to rely on trust in the future. In the "Network Economy" the individual trust does not belong to organizations, but to the network (for example "are you Win or Mac?"). That is why, networks have to establish standards to be successful, because the wider the network is spread, the better for its future and survival.

### 9. The Law of Devolution -- Let go at the top

The competition in the "Network Economy" is much harder as ever before – companies can not rely any more on successes achieved so far, but must already have the strategy and plan for the next challenge and improvement. The complexity of the problem is in the necessity to aim continuously the implementation and development of innovations, even if there is a probability for temporary losses.

### 10. The Law of Displacement -- The net wins

With the approach of information and knowledge materials get displaced by information and communication technologies. The material mass gets replaced by information technologies in such rate, that the ratio industrial know-how to information and technology get so negligible, that in the future cars can be described as "chips on wheels", airplanes as "chips with wings" etc.

### 11. The Law of Churn -- Seek sustainable disequilibrium

The "Network Economy" needs permanent interruptions and breaks to stay alive. Only trough existing on the line to chaos innovations can be permanently initiated, created and fully exhausted. This effect is the so called "Churn effect".

### 12. The Law of Inefficiencies -- Don't solve Problems

Development in "Network Economy" has a completely different approach –progress is not about problems getting solved any more, but opportunities to be recognized and something new to be developed out of them, because innovations bring much more progress than optimization.

These are the bases of the new time, of the new industries and the new economic.

## 1.1.2 New Industries

The transition to knowledge society is completed and the knowledge society is a reality. Information and knowledge are accessible for everyone and from everywhere and develop explosive both through more and more fields of research and deeper in new aspects of known fields – there are about 20 000 academic articles published on the WWW daily and about 580 million internet users (state 2002).



Labour distribution is completely different in comparison to those from the 50's of the last century. Nowadays, in many industries, and especially in the IT and Communications, about 90 percent of the total cost for development of a new product are in the development phase and are exclusively staff costs. While traditional market segments fall behind, new market segments develop explosively.<sup>4</sup>

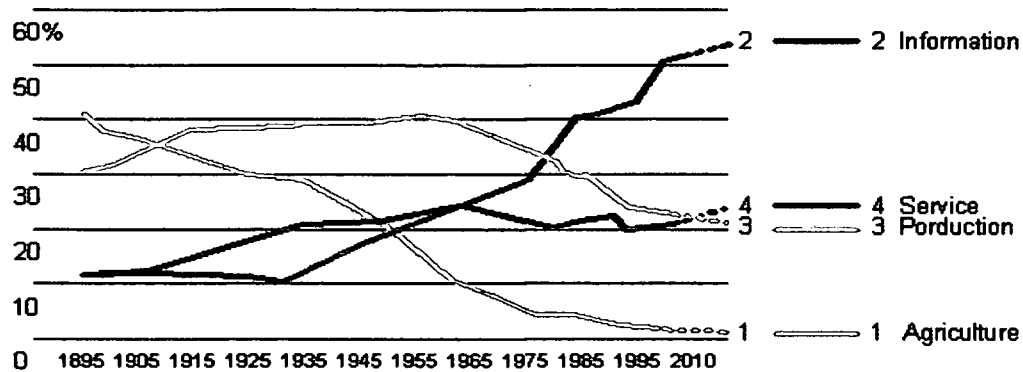


Fig. 1: Shift in types of employed work in Germany<sup>5</sup>

### 1.1.2.1 IT and ICT

The informational (and as a part of it – communication) revolution is the main factor for the current changes in society, industries and economics. From the personal computer to the network economy nowadays, from the telephone to the virtual meeting rooms, IT (Information Technologies) and ICT (Information Communication Technologies) are the main reason for market globalization, global competition, knowledge development and knowledge society. Implementation of IT and ICT in the office is something, which developed to state-of-the-art in the office and office equipment long before the industrialisation-period was over, but first with the total invasion of both in all aspects of life and the importance, which knowledge gained as a result, built the basis for radical change in work environment and office concepts.

<sup>4</sup> See Hube, 2003, p. 45 – 47

<sup>5</sup> Dostal, 2003, p. 46

#### **1.1.2.1.1 "Keep It Running"- The Story So Far**

"KEEP IT RUNNING!" was the slogan of managing a computer system in 1946 <sup>6</sup>.

Back in the 40's, that was the primary goal of the technicians working on the Electronic Numeric Integrator and Calculator (ENIAC) - the first large-scale electronic computer was a system of 17,480 vacuum tubes and because a given tube could fall at any given moment, critics believed, that the ENIAC is never going to manage to complete a whole calculation. To keep a computer running for 12 hours, they developed a program of regularly swapping in new, tested tubes.

This story is here just to remind us what an enormous jump was completed in the IT industries within just 50 years.

The development was explosive: By the mid-1950s, vacuum-tubes and electrostatic memory were being replaced by magnetic core memory, which didn't burn out. Programming by plugs and wires was being replaced by programs called "software" and soon later, in 1955, the first operating system for IBM was developed by the programmers at the General Motors Research Center.<sup>7</sup>

Things kept develop fast: programs were written, punched onto cards, converted to tape and then run on mainframes. The results were printed on a separate machine. And mainframes had to be manually reconfigured when switching between different programs. Software kept get optimized and simplified, so that it got possible to concentrate on optimizing system performance.

Another revolutionary step was the replacement of the core memory with the dynamic RAM chips and the development of the hard disk drives. Storage management, as well as problem tracking systems became important, because data processing shops started running online transaction processing systems in growing competitiveness and the system had to keep running. So the next task for processing managers got the improvement of system's response time. Little later, in 1974, minicomputers were already going in use as departmental computers

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<sup>6</sup> See Hayes, 2002

<sup>7</sup> See the same

A very important year in IT development is 1981, when IBM presented their first PC and short after that – the first demonstration of PC LAN. A year later, in 1983, Ethernet and TCP/IP networks for PCs, workstations and servers approached and made possible to manage availability and performance on a network level, too.<sup>8</sup>

The development till 1990 made capacity, performance and security the most important issues in term of IT, with extreme development, requiring continuous upgrades and keeping systems up-to-day.

Half a century after the tubes' system, the challenge is to manage millions of computers connected in the more or less global networks as if they are a single one, but the main task is still the same: keeps it running.

What about ICT in the same period of time?

The development in telephone systems was exactly as explosively and crucial as the one in computer systems and information technologies. And exactly the same way as IT, they were pushing the development of commerce and industry and at the same time made telecommunications affordable and available.

The 80's for the telecommunication were exactly as important for IT, following similar exponential development curves: telecommunication was the initiator and pioneer in development and implementation of wireless communication technologies and networks, which started to be built short after that. Forced by the needs of business and industry, the new IT and ICT technologies expanded fast outward of USA and Western Europe. Expanding companies on the global market were transferring the new technologies, since large companies started requiring high speed data and other sophisticated services from subsidiaries of IT and Telecommunication companies.<sup>9</sup>

With the emerging wireless technologies telecommunication had another push in its development – it led to the appearance of cellular telephone networks.

Moreover, as the communications infrastructure get upgraded and expanded, additional opportunities to improve the quality of life arise. With systems able to transfer multimedia, the extension of the term of the workplace get more and more indefinable, since, because of the opportunities which IT and ICT give, workplace can be every occasional place, where an employees has it notebook and its mobile phone.

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<sup>8</sup> See Hayes, 2002

<sup>9</sup> See Verysign 2004, p.8

### 1.1.2.1.2 Requirements on IT and ICT for the workplace

The explosive upwards way of IT and ICT industries keeps after the 1190, too.

Globalization created dynamical competition, technology has brought mobile communications, the Internet has revolutionised business life, new service and escalating transmission speeds have created new opportunities. The most important consequence is that these industries caused the appearance and development of the knowledge based economy of the future. Competitiveness – the key to economic and social development – is increasingly based on knowledge and skills rather than physical resources and the information and communications technology (ICT) sector is the crucial factor in enabling access to knowledge, spreading information and opening access to markets.

Furthermore, through the intelligent use of ICT products and services, all sectors of industry, can improve their performance, by reducing their use of resources through smart energy management for example. Since climate change is a very actual and important issue nowadays, the possibility which such developments offer must be carefully considered and logically implemented, because their impact can be much more significant the continuing progress which the ICT sector will make to improve its own internal impacts.

It is expected that this trend keeps its evolution up to the levels to be the critical factor for the further development of economies around the globe in the next century, since IT and ICT provides the infrastructure of the knowledge economy. Therefore, companies, whatever size they are, are interested to equip their employees with the best possible IT and ICT technologies to enable them to deliver the highest possible performance, to keep equipment up-to date with the latest innovations costs an amount. However, to equip its employees with a powerful laptop and a Blackberry got a standard for companies, counting with competitiveness on the global market. New problem emerging with the amount and necessity of technologies is to select the best suitable and rentable equipment for the employees.

Powerful laptop with all possible functions is already a part of a standard set, the other part of which is a multi-functional mobile phone, which tasks and possibilities reach far further beyond the “simple” task of connection and communication.

The other danger to avoid is to overwhelm employees with too many different devices and technologies to handle and instead to enable better performance and easier approach to the daily tasks, to make their work unnecessarily more complicated. Technology is suitable only if it justifies the costs - both intellectual and financial – to be used.

There are some main requirements, which IT and ICT has to fulfil to get an inseparable part of work concept and office concept.<sup>10</sup>

- **Accessibility**

With accessibility is meant not only the access to information but also the uninterrupted communication between people just-in-time. Accessibility is from extraordinary importance because the business environment is extraordinary dynamic: if you do not check your mail, if you do not have your laptop connected permanently to the system, you do not have updated schedules, you do not know what your client needs in the very moment.

- **Communication**

The next crucial requirement is communication. The difference between both – accessibility and communication - is the content: accessibility is the possibility to reach someone on an electronic way; communication is what you deliver, when reaching someone:” If you get a page or email of simply "help, the client is unhappy," you're powerless to do anything without situational context.”

- **Usability/Acceptance**

Usability is a quality of the equipment and technologies used in the office. Usability could be express with the quality of having just the right amount of function, which needed: It means, that a devise, which does not have important functions is exactly as unusable as another, having too many functions, hardly get in use and user-unfriendly.

### 1.1.2.2 Technologies for the Workplace

After having discussed the way IT and ICT have gone to develop to crucial features of corporate structures and the requirements they have to fulfil, so that a corporate structure is a successful one, the next chapter describes the technologies and innovations for the new office concepts, corresponding to these corporate structures and the future trends of their (IT/ICT) development.

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<sup>10</sup>See Verysign 2002, p. 15-16

### 1.1.2.2.1 E-Work Technologies for the office of the future

The explosive development and revolution of IT and ICT will not stop its progress and technology forms, we can hardly imagine now, soon could be a part of our daily life – also work daily life. Thus, the trend in development of IT and ICT innovations direct them even stronger to office work, so that they become a work support: Without them performance of the single employee can hardly be imagined; they allow team members to still work as a team being, beyond locations and borders; the further developments of intelligent agents will perform a large part of the tasks for structured information search and classification, reducing significantly the unproductive time.

E-Work organisation is focused on all these IT/ICT applications for electronic design of the work and a continuous research and test of new possible technologies, which “can provide the motive forces for efficiency and quality and how these technologies can be designed in such a way that the requirements of both companies and individual staff can be met at the same time”. The Future Initiative Office 21<sup>®</sup> for example has also the aim to provide a feed-back and help design technologies in such way, that they correspond best the needs both of the company and the single employee. A subproject of the initiative is the Office 21<sup>®</sup> Technology Map which is an information pool for evaluating the sustainability of future trends in IT/ICT development and implementation. Summarized, working in the next future will be not possible any more without the support of high IT and ICT technologies, which have to improve performance by enabling knowledge and avoiding unproductive time for information search, establishing connections with team members, managers, data-bases etc and organizing work and workplace<sup>11</sup>

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<sup>11</sup> See Ehlers/ Greisle/ Hube 2003, p. 81-85

Corresponding to the forecast is the model of the typical work routine, provided by WEIT.

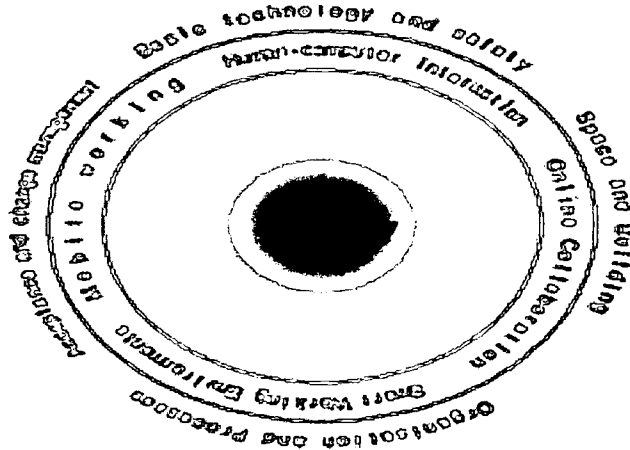


Fig. 2: WEIT Model (Work environment with Innovative Technologies)<sup>12</sup>

The models suggest the way in which human-technology-space will collaborate in the future to provide the best performance and work effectiveness. The linking element is a common strategy to choose and introduce new technologies and enable potentials for high-performance office concepts according to the need of the staff. To be successful, the chosen strategy has to be developed according to three main considerations: work content and method for single employees and teams, goals of the company, processes to achieve the goals. As already mentioned above, the most important factor in introducing new technologies is the acceptance and usability.

### 1.1.2.2.2 The new Office Technologies

The collaboration of IT and ICT described above, building a fully automated environment supporting the office work, is called Smart Office Environment and is predicted to develop to a standard for office work and equipment. A great role in it play Intelligent Software Agents, performing almost all supporting tasks for the performing of the real work, which is using knowledge and sharing knowledge. Intelligent Software Agents will function synchronised with the personal requirements and needs of the office or workplace user, searching the exact information, classifying it in the preferred way and order, organising workplace, schedules, environment features as air condition, light etc.

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<sup>12</sup> See Ehlers/ Greisle/ Hube 2003, p. 83

The scenario for IT/ICT technologies implemented is for them to give freedom of movement and actions within the office, making work absolutely independent from the physical presence in the office, interfering 3D images, reacting to voice commands, replacing fully the need for interacting of human and techniques (for example by using keyboards, dialling phone numbers etc). This scenario is the so called Smart room, described by the Massachusetts Institute for Technology (MIT) - the pioneer in this sphere - as "invisible butlers".<sup>13</sup>

The features of the smart room include for example interpretation of the natural behaviour of the user by means of active or passive "personal tag", recognising its positions through a positioning system, maintaining a real-time connection of the employee with his workplace and recognising him individually if in a given moment and room there are more users, so that every user receives continuously and correctly the information addressed to him.

The latest researches are in the sphere of "emotion-based computing Systems", which development is in its first stage, but expected to penetrate and make the next step in the radical change of office and work concepts till the beginning of the next decade.<sup>14</sup>

An overview on the development of Technologies for Smart Working Environment and Mobile Working are presented on the diagrams below:

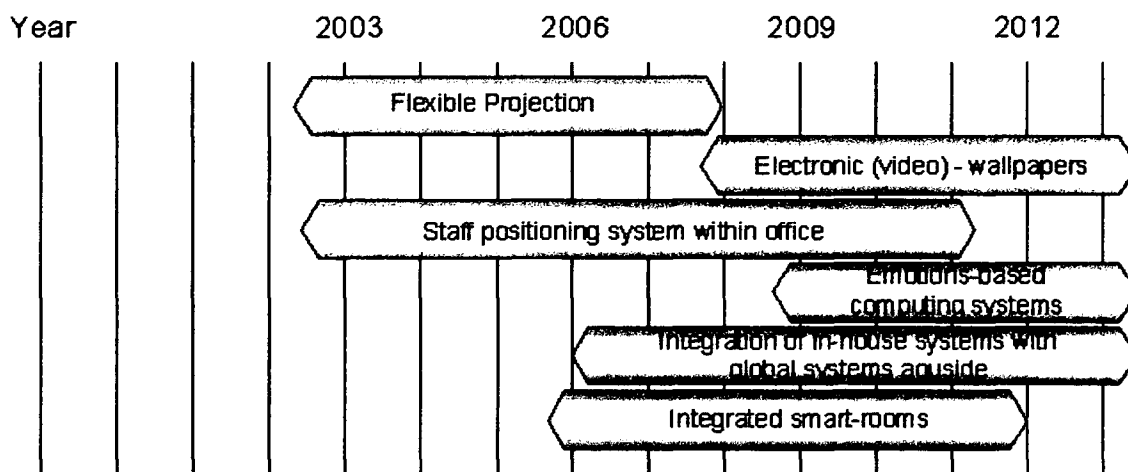


Fig 3. Development trends in Smart Working Environments<sup>15</sup>

<sup>13</sup> See Ehlers/ Greisle/ Hube 2003, p. 86

<sup>14</sup> See Ehlers/ Greisle/ Hube 2003, p. 87

<sup>15</sup> Ehlers/ Greisle/ Hube 2003, p. 87



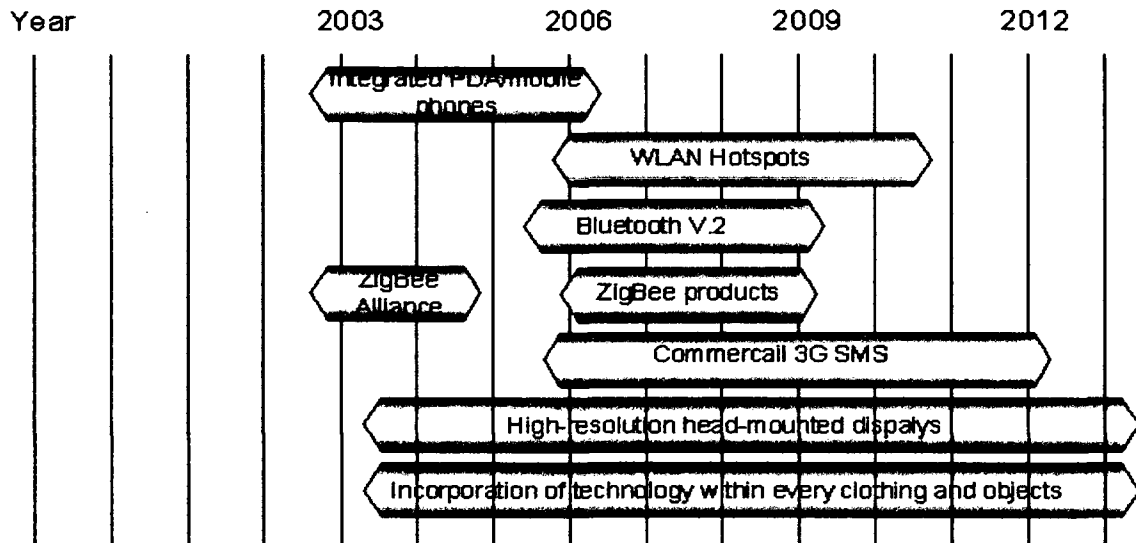


Fig 4. Development Trends in mobile Working<sup>16</sup>

### 1.1.2.2.3 Intuitive and ergonomic human-computer interaction

The developments in the sphere of human-computer interaction has a specific importance especially for disabled employees, who get equal opportunities through new technologies, exactly the way it should be, since not the physical presence counts, but knowledge and intellectual contribution.

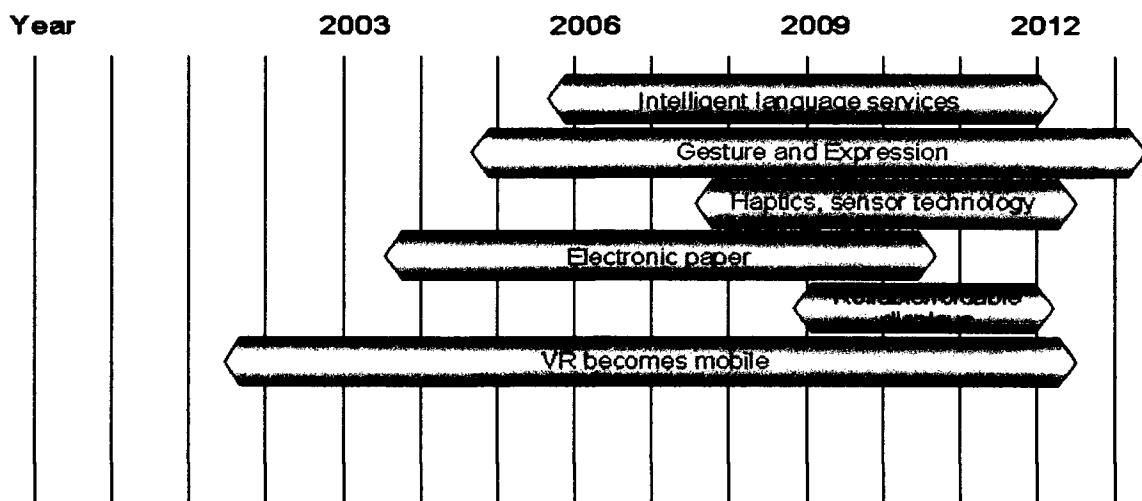


Fig. 5 Development Trends in Human-Computing Interaction<sup>17</sup>

<sup>16</sup> Ehlers/ Greisle/ Hube 2003, p. 91

<sup>17</sup> Ehlers/ Greisle/ Hube 2003, p. 95

The next technology group is maybe the most important: these are ITs and ICTs, supporting the collaboration within a virtual team, which is expected to be the widest spread work form in the next future. These are the technologies for the so called E-Collaboration, which enable the real-time communication between team members, independent from their location at the moment, working in virtual conference rooms, having access at the same time to the same information. Software Agents will have a great impact on this type of work, too, because their further development will lead to the implementation of completely automatic, continuously improving control and support system, which will replace the mainly manual control of the agents nowadays. The implementation of these new software and technologies could prove itself as unavoidable and crucial, since in the knowledge society, the continuous access to reliable information from inexhaustible information sources will define mostly the competitiveness of a company and its progress.<sup>18</sup>

Looking back at the three requirements on new technologies, their implementation would cause cost, but not success, if the last factor of the acceptance is not considered while searching and planning the implementation of the new technologies.<sup>19</sup>

### 1.1.2.2.4 Successfully implementing new E-Work technologies

As already mentioned, maybe the most important factor for the successful implementation of E-Work technologies is the user acceptance; because in the end, the success of new technologies is presented by what the users manage to do, create etc by using it. An important term, which appears here, is the Change Management System, which task is to be the interface between users and technology: to encourage users to take an active part on the changes and to translate their needs, so that the best fitting technology is chosen and implemented. The Massachusetts Institute for Technology (MIT) researched the field of new technologies acceptance and summarized the conclusions in two studies offering a Technology Acceptance Model (TAM)<sup>20</sup> and a task-Technology Fit Model (TTF)<sup>21</sup>

#### TAM

- Perceived ease of usage
- Perceived Usefulness

<sup>18</sup> See Ehlers/ Greisle/ Hube 2003, p. 96-98

<sup>19</sup> See Chapter 1.1.2.1.2 Requirements on IT and ICT for the workplace

<sup>20</sup> See Davis 1989, p. 99

<sup>21</sup> See Godhue /Thompson 1995, p. 99

### TTF

- Qualities of the task
- Quality of the Technology
- Task-Technology Fit
- Increase in Efficiency and Usefulness

These two technology-check approaches have to enable the successful support of everyday work. Together with the listed work-based and technology-based factors from the both models, there is a list of factors – as for example personal experience, knowledge, but also emotional interest – building a system of factors and features, considered in a frame-work called Office 21<sup>®</sup> E-Work Potential Check. This framework produces a user evaluation with the help of which it is possible to identify different standard tools for work and mobility forms in a company.<sup>22</sup>

By the requirements analysis for a Smart Room implementation for example, the results showed that technical factors have more or less the same importance as soft factors as climate, light, noise and design. It was not only the unobjectionable functioning of the technologies of crucial importance, but also the ability to adapt them to the personal needs and requirements of the user: both in term of work and tasks characteristics and personal well-being.<sup>23</sup>

#### 1.1.2.2.5 Secure Implementation of new technologies

To summarize: there are following factors for the successful implementation of new technologies: the proper technology and the proper time to implement it.

As mentioned above, the proper choice and implementation of new technologies is important anyway, but crucial for the success and performance when changing the office and work concepts. In this situation it is useful to make a potential check to be sure, it is the most suitable and optimal technology chosen. An example for a tool like this is the mentioned above Office 21<sup>®</sup> E-Work Potential Check. The table bellow represents its organisation:<sup>24</sup>

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<sup>22</sup> See Ehlers/ Greisle/ Hube 2003, p. 99-105

<sup>23</sup> See Ehlers/ Greisle/ Hube 2003, p. 101

<sup>24</sup> See Ehlers/ Greisle/ Hube 2003, p. 111

## New Office Concepts for New Corporate Structures

Work Type	Process Worker	Data Manager	Organizer	Communicator	Developer	Decision Maker
Assistant	○○		●○○	○○○		○
Controller	○	○○○○	○○○	○○	○	○
Project Manager	○○	○	○○○	○○○○	○	○○○
Developer	○○	○○	○	○○○	○○○○	○

○○○○● strong  
none

Fig. 6 Examples of Proficiency in different tasks by work type<sup>25</sup>

The Office 21<sup>®</sup> E-Work Potential Check provides a map of the work methods within a particular company and thus, the suitable information and communication technology according to the delivered working-methods-map. The existing workplaces are described according to the factors "work type" and "mobility type" (see table) and considers the fact, that the work type, performed by the same employee can vary (as an example is described the work schedule of a software engineer, when working on software development: on the one hand he can be observed as a knowledge worker, on the other as a process worker, having different needs and requirements in term of technical equipment. Following this logic it can be estimated the task of which work type are important components of the tasks to be carried out.<sup>26</sup>

To answer the question when a technology should be implemented, there are two aspects to be considered: the moment when the implementation for the certain technology will create a great benefit for the company (innovative approach) and the moment when it can be successfully implemented within the company. The first aspect can not be influenced by the managers of the company, because it is market caused. The second aspect includes recommendations for concrete actions, so that the staff can be prepared for the new implementation.

<sup>25</sup> Ehlers/ Greisle/ Hube 2003, p. 111

<sup>26</sup> See Ehlers/ Greisle/ Hube 2003, p. 111

The first aspect is considered in the study of the Gartner Group, which provided a visualisation of the stages of perception for new technologies:

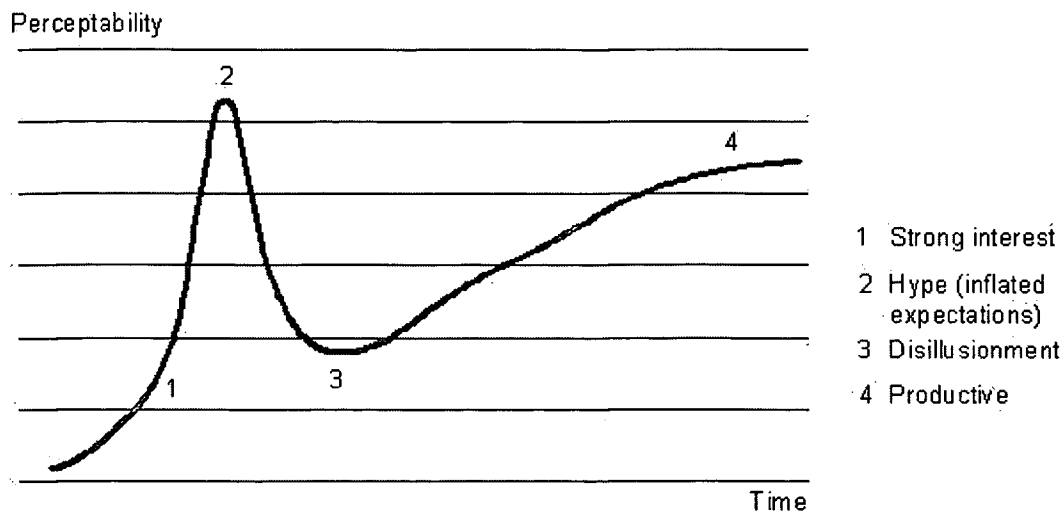


Fig. 7 The Gartner Hype Cycle<sup>27</sup>

The second aspect is framework of following factors and recommendations:<sup>28</sup>

1. Only when staff accepts the new technology, its full potential can be activated
2. Furthermore, the new technology has to be completely integrated in the daily work and business processes, to so that its implementation make sense.
3. By integrating of new technologies in the working environment to make sure, that they will be used efficiently.
4. With the introduction of situation-based interaction with new technologies it is possible to give optimal support to the task achievement, without affecting staff that is not involved.
5. Introduction of Support teams, to step in on the exact location, when they are needed in critical cases, which consume resources and are labour-intensive.
6. With the emerging approach of technologies, stability and security of the network become of crucial importance and have to be treated adequate.

<sup>27</sup> Gartner/Schofield 2002, p. 108

<sup>28</sup> See Ehlers/ Greisle/ Hube 2003, p. 109

7. Technologies have to be introduced along with proper organisation and technical support.
8. Introduction of effective Change management for successful implementation, adapting and unlocking potentials through developing, searching and optimizing technologies.

### **1.1.2.3 The Consulters - Drivers and Pioneers of the Knowledge Society**

Consulting is a phenomena, which appeared as a result of the globalization and the approach of the Knowledge Society, which on their turn were initiated from the IT and ICT boom. And if IT/ICT were the drivers of the information revolution, consulting is the symbol and driver for the knowledge revolution, handling with all the features of it: globalisation and global competition, dynamically changing environment, appearance of new industries, innovation and radical changes in corporate structures and organisation.

#### **1.1.2.3.1 The Birth of Consulting**

The appearance of consulting happened with the recognition of the corporate knowledge in the first decades of the 20 century, thus, its boom started, when the informational revolution got a fact, as well as the globalisation of the markets and the new competitiveness. There is a clear reason for this development: with the globalisation and the rules and conditions of the new dynamically changing business environment, companies had to change also radically, which caused a lot of problems, especially for great companies and no everyone managed to survive. But exactly the problems companies were having with the changing environment, is the stuff, consulting firms profit and live from.

With the informational and telecommunication boom, information developed and got spread too fast, creating a global playground, where geographical location did not matter any more, where competitors got informed about strategic decisions as soon as they were taken and implemented. This ended the era of industrialised economy, with mass products and step-by-step defined and performed processes. At the moment when companies recognised, everything changed irreversible and therefore, they have to change, too, the recognition about the importance of information of knowledge came, and the consulters were the ones, having both.

#### **1.1.2.3.2 The Knowledge Factory**

Why do consulters know, what others do not? And do they really know everything?

Consulting firms work with knowledge and “produce” knowledge, research the phenomena of knowledge, because this is their main resource. The drivers of knowledge society: information, globalisation, innovation and the holder – the human brain – are the tools of the consulting industry. And back to the questions, asked above: “knowing” knowledge, consulting firms manages to know exactly this, what managers of international companies did not know or did not realize. Below are listed the main factors, presenting the consulting philosophy and the framework, which explain how do consultants manage the problems.

### 1.1.2.4 Knowledge Holders

When a trend for a change in some direction appears, consulting firms often already implement it or test it, while other companies doubt about its necessity or still ignore it. Often consultants are wrong. But when they are not, the trend becomes an important innovation and they have the knowledge on it.

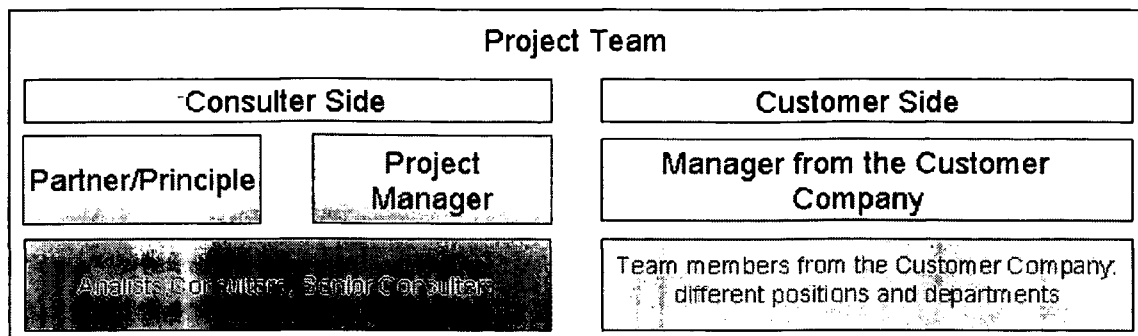
One of this trends, which later developed as a crucial factor, was the importance of the single employee, and thus, the importance of the personal, soft skills more than of the scientific knowledge, since science develop too fast, but having the right person, you can rely, you have the right resources to handle the change.

- **The Consultant**

To respond to their aim, to deliver best quality and performance, most of the consulting firms have developed a very complex profile of the employees they are looking for. Exactly as the wide portfolio of the industries, they are working with, consulting companies are looking for employees with different background: from economic to theology. It is not the background, but the achievements the employees have to bring with them, the affinity to knowledge, development and curiosity for the global market system. Following this profile, consulting industries successfully recruit people, who later develop innovations and knowledge by themselves and thus, turn into the most important and precious capital of the consulting industry.

- **The Team**

The main cell of the organism of the consulting firma and the crucial success factor and driver, is the project team. Observing one of these teams can be recognised the next trend, which consultant managed to develop to state-of-the art in their organisation and become an example for the other industries: a flat organisation to enable optimal communication, information flow and knowledge share and development.



The project Team has following features:

- It consist always of two main parts – one from the consulting firms side and one from the customer company side
- The Project Team stays with the customer and works in the customer company at least four days a week
- Team members differ from each other by the mean of tasks characteristics and not by hierarchical position
- All team members are “obliged” to communicate with each other: in some companies as McKinsey for example, there is the rule of “oblige to controvert” – with the introduction of this rule, the consulting companies wants to make sure, that the information and knowledge will be shared, especially bottom-up, since annalists are the ones, working with the data and delivering the important information
- Communication is networked and happens between all sides an levels
- A key role for the success of the project has the project manager, known in some companies also as “engagement manager”, which refers to the complex tasks of organisation, team motivation and communication, he/she has to perform

### 1.1.2.5 Knowledge Development and Innovations

And once again: Why do consulters know, what others do not? And do they really know everything?

Consulters do not know everything, but believe to know what is important. Consulters are generalists: they come from different industries and have different scientific background, but their



task is not to understand the simplest element of the system, but to comprehend the system, its specialities, its unique side and to improve it or adapt it or make a recommendation for a radical change of the system according to the external environmental factors. They do not go deeper as necessary, because that is the main problem of companies, hiring consulting companies to solve a problem: they lose the overview of their system and the overview on the environment. The answer of the first question is a result of two aspects, considered below:

- **Contact to the Customer**

There is hardly another industry, working so close with the customer and developing a unique solution and product in this rate. However, following their customer everywhere all over the world and changing the industry with each next project, consultants get an overview on the global economics and market, which a company, concentrated in its own industry, can not. The experience consultants make in all the different industries, they are working in and with (and these are all the important industries, which will have impact on the global economics at least in the next few decades), they get to know how the global system is compound and how elements (each industry) influence the other, they are aware of all the latest developments, not at last because they initiate many of them.

- **Scientific Researches**

The own scientific research is a priority for the most popular and successful consulting companies: the publications of companies like McKinsey, BCG and Bain set the trends and are seen as reliable source of information about starting changes and trends. Besides, large consulting companies invest a lot in knowledge and innovation development: McKinsey for example invest in research and education of its employees yearly more than the Harvard University spend on research and innovation developments.

### 1.1.2.6 New Technologies

The successful implementation of new technologies in the organisation of consulting firms is a crucial factor for their work from that greatness, that consulting would not be imaginable without them. The first reason is that consulting is working with knowledge and sharing knowledge, which is impossible without the proper IT and ICT. Further reason, is that the "workplace" of a consultant as location is unidentified and represented only by the IT and ICT used: the laptop, the PDA, the mobile. The way, in which consultants work together, is nothing else but a form of a virtual team: a part of it is working physically together where the customer is located, another is in the base office, and the requirements on the technologies used are that the difference should not be recognisable.

### 1.1.2.7 Work Concepts and Organisation

This is the next aspect, in which consultants are trend-setter: consulting firms managed to transform the workplace and work concept from a fictive location into an important supporting tool for their work. Office concepts used in consulting companies are flexible, corresponding to the characteristics of their work and supporting the employees by their work, wherever they are.

State-of-the-art is the implementation of desk-sharing and tele-working supported by technologies, through which employees have 24 hours a day real-time connection to information, people and equipment. The office concepts are flexible and adaptable and are not at last influenced by and seen as a part of the corporate identity and culture and transferred as a standard everywhere the company establishes a new subsidiary.

The above discussed industries are often seen as pioneers and sample of how the things should be approached. They are the typical examples for companies, working in, managing and developing the knowledge society with all its aspects: globalisation, new industries, new work organisation, information and knowledge. And that is way they are also the example for the new definitions and dimensions of measuring success in the new environment and time as the performance of the company, which managed to consider all external and internal factors.

## 1.2 From the cellular office to the virtual team - Economical Point of View

There is a very strong relationship between social welfare and economic development, as well between economical development and corporate prosperity as "social welfare is maximized when each firm in an economy maximizes its total value market"<sup>24</sup> and all sides of the players in this system are interested in improving its elements.

The next chapters follow the development of corporate philosophy and global strategy, corporate management and management tools for performance management in the office in the conditions of the changed economy and knowledge society with an aspect on the role of the employees and their contribution to the overall corporate success. The evolution levels concerned here are linked to global external factors as market globalization after the information technologies' boom, followed by appearance of the knowledge society and begin with the classical shareholder approach, through the beginning and development of the stakeholder approach, up to the search for new and flexible management form, all this in the concept of a

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<sup>29</sup> See Jensen 2002, 235-236

concrete corporate philosophy, which also lives its evolution from the aspiration for growth to the one for radical innovation. The evolution of the appearance of a company has therefore two aspects – the external (the company in its appearance on the market) and the internal (the corporate organisation, culture and policy) and this are the two aspects, in which context corporate structures from the economical and management point of view are observed below.

### 1.2.1 Industrialisation

#### 1.2.1.1 The Mass Production

Similar to each revolutionary change of the direction, industrialisation had also its slow beginning, boom and recently a phase-off. The whole cycle started in the 19<sup>th</sup> century and still goes on.

The main characteristics of the industrial production are the mass product and its production cycle.

The production cycle is composed of strict defined processes to be followed, which aim is the production of identical products for an anonymous customer.

The advantages of the mass product were the risen production capacity, when replacing human productivity with the productivity of machinery and the chance of a company to make profit was increasing market share. The increase of market share derives mathematically and logically from the increase of the production, which further can happen through:

1. **Increase of capacity** – which has limited possibilities
2. When the breaking point with marginal cost is threaten to be passed and increasing of the capacity is not an option any more – **processes optimization** – which is also a limited possibility.
3. **Growth** - which has been seen as priority and a single possibility for corporate prosperity for a long time.

While the player on the market were not many and markets were separated, growth was a good opportunity to make profit, but things changed in the last decades, when players got more and more and further, due to the informational technology, a globalization of the markets started and established different marketing rules and competition conditions.

### 1.2.1.2 Shareholder Value and Shareholder Approach

On the internal side the working organisation is very similar and corresponds to the philosophy of the mass production. Employees are exactly as anonymous as customers and are simply the executors or participants in processes. Communication is exactly that simply structured as production philosophy is – one-way and top-down and in its nature can be explained by the term of control and has to fulfil the goal of value maximization.

The shareholder approach is the basic, traditional approach for achieving a corporate productivity, concerned exclusively on and having as a main objective this market value maximization, called also shareholder value.

A definition for shareholder value describes it as “the financial value of the owner rights in a company”<sup>30</sup>. This value is subjective and depends on individual preferences, expectations and opportunities of present and future owners. There are different approaches for calculating the shareholder value and systems for quantifying of the influence of the corporate strategic decisions on this value.

The Shareholder Approach and its implementation is a necessity for the survival of an organization. It uses methods and instruments for capital market orientated success measurements and controlling and requires an exclusive alignment of the management actions to the objectives of the owners which are financial objectives. But the approach turned to be inefficient and uncompleted because of the following disadvantages:

- This approach is based on idealized capital market conditions and idealized corporate models and is therefore valid only for this conditions, the consequences of the difference between idealized and real capital market leads to problems to be managed;
- It is based only on financial data;
- It does not consider specific investments, which dos not return financially measurable profit;

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<sup>30</sup> See Speckbacher 2004, 1320-1326

- The strongest contra against the approach is the fact that it does not consider intangible assets and intangible value drivers, which, taking into account the conditions of the continuously changing environment, are much more important for achieving corporate profitability and value maximization as the financial value drivers themselves. Or with other words, it ignores the contribution and the importance of other very important factors (e.g. stakeholders) and that is why it does not consider their requirements , therefore, does not initiate the development of these, does not improve and use the contribution of the stakeholders to the performance and ignores the possibility to improve the corporate performance in this way ;

Back to the point of one-way communication of goals and tasks and control-like and top-down philosophy of the relationships in the corporate organization – office concepts were designed and adapted to correspond to and represented these features. The most common office forms were the cellular office and the open-plan office, where the cellular office had a representative function and was assigned to the hierarchical position and open-plan offices corresponded to the anonymity of the staff, as well to one-way, process-orientated work and communication.

### **1.2.2 The Global Market**

#### **1.2.2.1 Expansion**

The difference between growth and expansion is the market. And there are two factors for the start of the mass expansion companies getting international: growth and rising of market share on the local markets was not possible any more, because of the limited size of the local markets and because of the increasing amount of competitors on the developed local markets. On the other hand the starting informational revolution provided information about new opportunities and made performance beyond borders possible.

Therefore, when the growing possibilities for large companies existing for more than half a century in their country of origin exhausted - the markets and customers are more or less divided and there are not many possibilities to expand except to take advantage of competitors' mistakes and in the best case – consolidate with or buy a competitor, in the conditions of a developed capital market with the challenge to keep the own customers and the market share, the only possibility to stay competitive and profitable using the old growth policy, was to expand into new, underdeveloped markets.

On the global playground, there are still lot of blank fields, where companies can keep growing and make great profit. But there appear some problems and threats for the companies:

- Growing on the global market using the same methods and measures like when growing on a local market has the opposite effect on companies – instead of increasing their competitiveness, companies can develop too large steady structures, incapable to adapt to the new dynamics
- Together with the greater opportunities, the global market brings also new dynamics and more aggressive competition; If companies try to keep producing and marketing mass products for anonymous customers, they are convicted to failure

A real expansion can be observed in the past few years in two world regions – in Asia in China and India and in Central and Eastern Europe. Large European and American companies have the opportunity to reach growth in all terms – employees, turnover, properties etc.

There are different companies in different industries, but there is a common approach to the new markets – the companies bring in the new countries their established corporate structure, communication network forms, hierarchy etc. The office concepts correspond to these aspects and are designed in the traditional form, representing clear vertical hierarchy and communication. The purpose for this is that the young subsidiaries in the beginning of their existence perform under control, dependently from the head office and have the freedom to make autonomic decisions only in conjunction with very small projects (subsidiaries of Siemens, Mobilcom, Strabag in Bulgaria, of Siemens in China and Bosch in Czech). If the head office is in an industry, which requires specific forms of work and communication and therefore a specific office concept or the office concept of the firm is an important part of its identity, it is integrated in the subsidiaries, too (Henkel in Sofia or McKinsey in Zagreb and Budapest). However, expansion is an important factor for transferring of office concepts, but not for their evolution and development.

The common between all these companies is that they manage to stay competitive by changing their strategy and growth philosophy on the outside and their approach and organization on the inside.

### 1.2.2.2 Stakeholder Approach

The stakeholders of a company are “any group or individual who can affect or is affected by the achievement of the organization’s objectives”<sup>31</sup>, and the most important groups to be mentioned are employees, customers, suppliers, but also community, environment etc. To recognise the importance of the stakeholders, especially represented by the employees, is the first step to consider the conditions and factors to improve their contribution to the common performance and success.

This step was made after managers recognized that they can not get the sufficient and comprehensive information to make the right decisions and achieve the optimum on corporate success only on hand of financial value maximization. Because the stakeholders, and especially the employees, are those, who create the value, managers came upon to the conviction, that there is no long-term corporate success and no corporate survival ability possible, unless they research, know and take into account their interests, their claims and demands<sup>32</sup>.

The new vision about companies is as a network of cooperating, but also competing groups of interests. Researches were made to find out the level in which optimized stakeholder management could lead to better performance, better achieving of the corporate claims and especially value maximization. Further approaches concentrate on the stakeholder approaches and their fulfilment because of themselves and not as a way to achieve a particular claim and improvement of the performance<sup>33</sup>.

The break through comes with the cognition about the real importance of the employees' contribution to the corporate success and profit and the evolution in direction of innovation and intellectual capital.

Thus, companies on the global market, which achieved success and develop further, are those companies, recognised the importance of their stakeholders. Furthermore, management started to recognise the difference between success in the meaning of financial profit and success as a long term goal, including many components, which can not be financially expressed and measured. At this point another term gains on importance as a synonym and measure for corporate success – the company's performance.

### 1.2.2.3 Performance Management Tools

The complexity of the new system required the development of new measuring tools, with the help of which managers could keep the overview on the company - tools, considering not only the financial but also the non-financial factors for corporate success (as for example customers' loyalty and employee's motivation).

One of the most popular tools for performance measurement is the balanced scorecard, which links the most important non-financial aspects of corporate performance to the financial success as an end result.

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<sup>31</sup> See Freeman 1984

<sup>32</sup> See Speckbacher 2004, 1320-1326

<sup>33</sup> See the same

- **Balanced Scorecard**

The Balanced Scorecard represents a model for the components of a company's system, the way they interact and influence each other. It observes a company from four perspectives, which proved themselves to be crucial for corporate success: the Financial Perspective, the Internal Processes Perspective, the Customer Perspective and the Learning Perspective. These perspectives are the primer layout and in which of them the management of every company can define concrete goals and task to be achieved or features to be measured and compared. The goals and measures in the four perspective are linked to each other in such way, that they can provide a strategy map for the management with information about how the strategy is implemented, if concrete measures work or not, where do concrete measures impact a change, if it is an improvement or not – and follow the changes of measurable and non-measurable aspects up to the top – the financial perspective with the financial goals, and see what a contribution they have to it. This approach is the beginning of a radical change in communication – the information flow is not any more only top-down, but also bottom-up, so that managers get the necessary information, how their measures influence performance of employees, customers' satisfaction etc <sup>34</sup>.

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<sup>34</sup> See Kaplan/Norton 1992, p.71



## New Office Concepts for New Corporate Structures

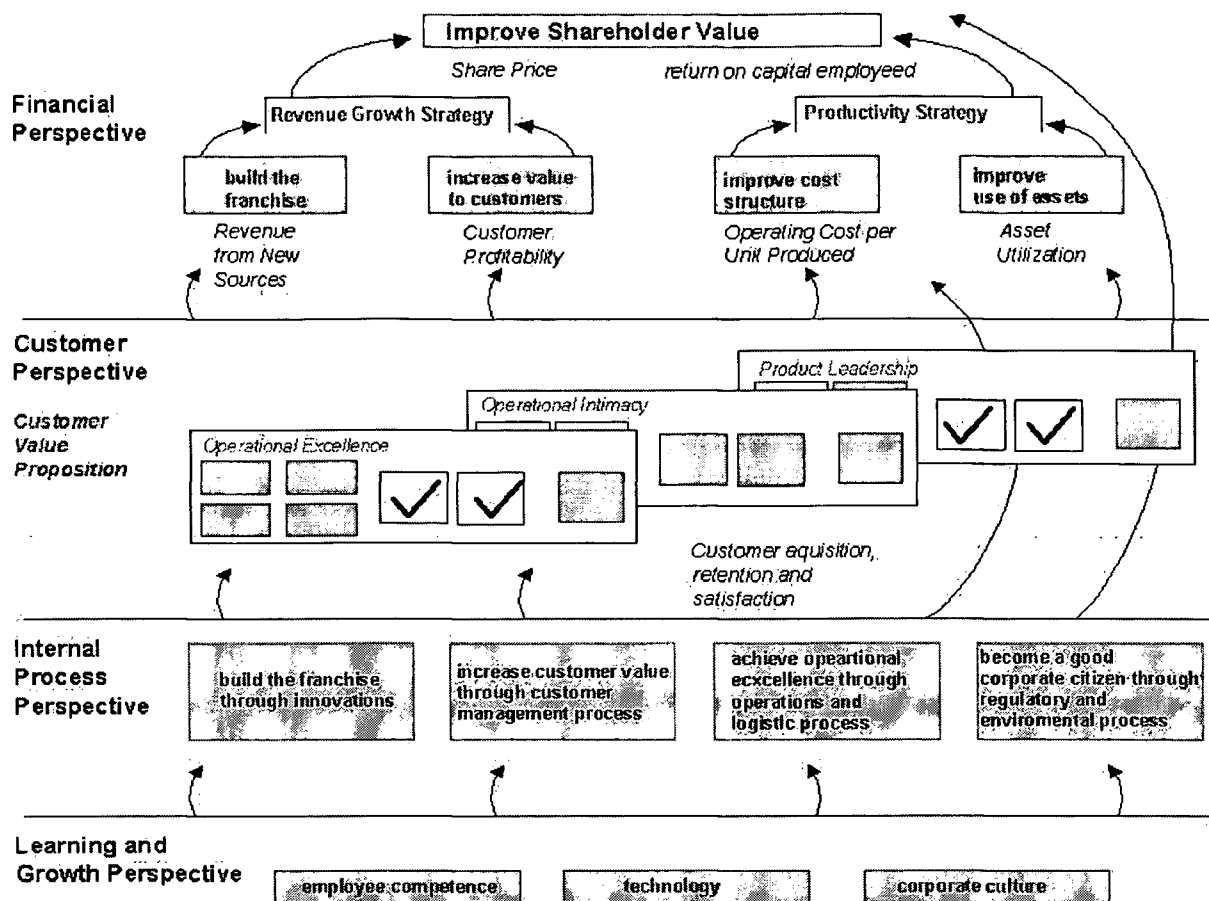


Figure 3: The Balanced Scorecard Strategy Map<sup>35</sup>

With the recognition of the importance of stakeholder contribution to corporate success the first steps toward initiating effective and active communication and information flow was done. Although the introduction of measuring tools for non-financial measures just open the first phase of this process, the introduction of the term of "performance" and tools like Balanced Scorecard pulled the attention to many factors, which could have an impact on performance as the office concept for example.

<sup>35</sup> Kaplan/Norton 2000, p.168

Office concepts started to change and get on importance as incentives rather than be just a formal place, where anonymous employees perform strictly defined process-parts for producing mass products for anonymous customers. Although office forms still kept their hierarchical appearance, they started to change and get more flexible, developing in forms, more suitable for different kind of works and different phase-processes in the production flow.

In this context, measures like the Balanced Scorecard, especially by setting concrete goals in their Internal Processes Perspective and Learning Perspective, give the possibility to estimate the quality and adequacy of a chosen office concept.

### **1.2.3 Innovations and Knowledge Society**

The market globalization, the information revolution and the approaching knowledge revolution are the new challenges that international companies have to manage in the future.

The risk which international companies could get into when trying to achieve biggest possible growth and trough it the biggest possible market share on the global market is that their organization and structures get rigid and inflexible to be handled, because "the rules for growing a company are absolutely changing and senior management need to stay current with new conditions" <sup>36</sup>. Besides, the trend of rising dynamics and importance of innovation and knowledge on the global market is expected to keep gaining on importance and stay as leading factor for corporate success and competitiveness for the next decades. Thus, companies have to change their focus from growth to other factors, which are going to be crucial for sustainability and success - knowledge and implementation of innovations.

So there are two steps, which companies have to make to stay successful and competitive on the global market – to grow "smart" and to start a radical innovation in their strategy and structure.

#### **1.2.3.1 Smart Growth**

The first step – the smart growth – is necessary, because at some point growth becomes a danger rather than a benefit for a company.

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<sup>36</sup> See Stallkamp/Shulman, 2004, p.39

To avoid this risk, companies have to change their strategy and approach toward following points:

- short-term growth strategy must be replaced with long-term success and competitiveness strategy
- to achieve long-term success and competitiveness, incentives must be provided for those who develop and expand the intellectual capital
- technological acquisition
- cultural change implementation
- new products development according to the customers' demand<sup>37</sup>

The most important point counted here is intellectual capital. Companies started to recognise the contribution of their employees to the corporate success and to look for ways to motivate it, to develop it and make profit of it. Due to the fact that intellectual capital is something invisible, it seems to be more difficult to explain. In literature terms like "knowledge", "information", "intangibles" and "intellectual capital" are sometimes used synonymously. Bradley defines intellectual capital as "the ability to transform knowledge and intangible assets into wealth-creating resources, both for companies and countries"<sup>38</sup> – it means, managers recognized intellectual capital as the next opportunity to create competitive advantage.

Instead of concentrating on rising financial measures and values and organic growth, companies have to change their strategy toward stakeholders and what they offer as opportunity to create market advantages: intellectual capital.

Relationship Capital (External Structure) is the relationships with customers, suppliers and authorities. Another expression of this relationship is brand names and reputation.<sup>39</sup>

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<sup>37</sup> See Stallkamp/Shulman, 2004, p.7-8

<sup>38</sup> See Bradley, 1997. p. 53

<sup>39</sup> See Sveiby, 2001. p. 5

## New Office Concepts for New Corporate Structures

Structural Capital (Internal Structure) is mostly created by the employees themselves to support them in their everyday business. It includes models, trademarks, patents, templates, processes and computer systems. Contrary to human capital, structural capital belongs to the organisation and remains within the organisation even if the employees change. Sometimes it is called 'the infrastructure' of an organisation and also includes the competences of administration and support personnel<sup>40</sup>.

Human Capital (Individual Competence) is skills, talents, knowledge and competence of company's employees<sup>41</sup>. The problem with this kind of intellectual capital is that it does not really belong and stay in the company, when they lose an employee for some reason.

Recognition of intellectual capital has two important effects: it changed the relationship between the „components” of the system – shareholders, stakeholders etc. – and initiated the need and search for work and office forms, supporting developing, sharing and making use optimally of intellectual capital of the company: teamwork and office forms.

Traditional relation	One to many control through hierarchy	One off market transaction by salespeople	Price driven control game by procurement people	Minimum direct contact War Game	Minimize Use of external sources of knowledge	Anonymous mass to be handled through mass market communication	Not relevant
Participants	Employees	Customers	Suppliers	Competitors	Knowledge partners	Shareholders	Stakeholders
New relation	Employees as owners and partners	Close sharing of knowledge; long term partnership	Suppliers as source of knowledge; long term partnership	Competitors as partners of networks of scope	Enhanced reliance on external knowledge partners	Intense investor relations	Responsible relations with all stakeholders

Fig. 8: Knowledge Processes – the relationship transformation<sup>42</sup>

<sup>40</sup> See Sveiby, 2001. p. 5

<sup>41</sup> See the same

<sup>42</sup> Nielsen, 2001. p.8

### 1.2.3.2 Radical Innovation

The second step – the radical innovation – includes the further development and initiation of intellectual capital to level, in which the organisation transforms into a knowledge organisation, and on the other hand the implementation and development of innovations, based on the intellectual capital of the company, which – exactly in the way the recognised and supported company's intellectual capital did before – are the next strongest advantage of a company toward competitors.

“Knowledge” and “Innovation” are depending on each other since the one is the basis for the other and it in its turn initiates the first and are the crucial success factors for companies, because in the new time innovation is the driver for economy and wealth. This was the conclusion of a McKinsey research in the year 2005 conducted in 9000 companies.” In the last years companies was used to grow throughout acquisition of competitors, developing of new regions and cost reduction. Thus, these options are already less attractive. Companies have to grow from their own power – and to achieve this they need the capability to develop something new in significant rates – products, services or processes.”<sup>43</sup> (Lothar Stein, Director of McKinsey in Munich and head of the worldwide Innovation Practice for Mck Magazine)

The “radical innovation” is the strategic approach for the companies, which changed their way, so that they set “knowledge” and “innovation” in the focus and develop them to main columns of corporate success. Its route is not problem orientated, but opportunity orientated – this means, that the managers have as their main tasks not optimizing of processes and solving of problems, but searching and making benefit of new opportunities.

The way of radical innovation is a completely new approach for achieving success with following main features:<sup>44</sup>

- explore new technologies
- high uncertainty
- focus on products, processes and services with unpredictable performance features
- creates a dramatic change that transforms existing markets or industries, or creates new ones

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<sup>43</sup> See Bartsch, 2005. p. 8-9

<sup>44</sup> See Leifer/ McDermott/ Colarelli/ Peters 2000

Thus, managers have to handle dynamics and uncertainty by using innovation technologies, which, if the high risk because of uncertainty is handled by the management, can be from great advantage in comparison to traditional project development:

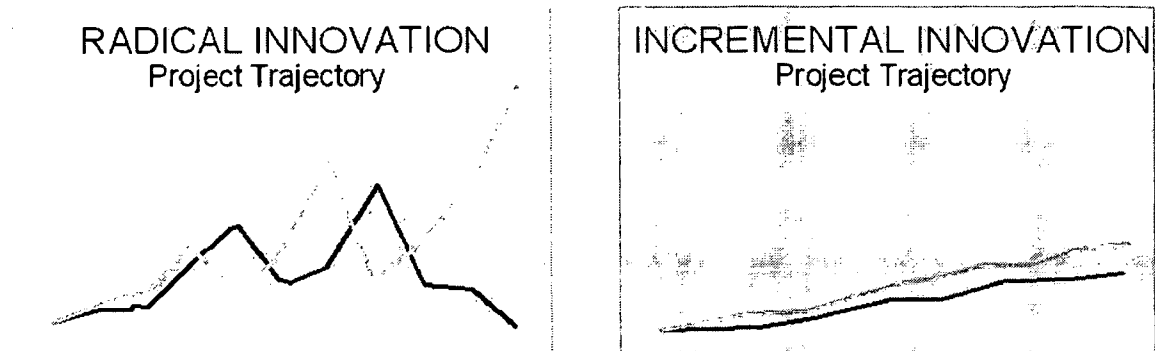


Fig.9: Radical vs. Incremental Innovation<sup>45</sup>

Managing uncertainty is a point, where it gets obvious, how important is knowledge for this approach and how depending are both terms – innovation and knowledge - from each other. The list below is an overview of the main challenges for managing radical innovation<sup>46</sup>

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<sup>45</sup> Kotelnikov, 2007

<sup>46</sup> See Leifer/ McDermott/ Colarelli/ Peters 2000, p.8

<b>Managerial Challenge</b>	<b>Competencies Required to Address the Challenge</b>
Capturing radical Ideas in the „fuzzy front end	Generation of good ideas Recognition of opportunities enabled by breakthroughs Development and implementation of an effective approach to initial evolution
Managing radical innovation projects	Articulation of a vision Uncertainty-Mapping capability Development of and ability to follow a learning plan Recruiting of champions Effective Management of organizational interfaces
Learning about Markets for radical innovation	Commitment to asking different market research questions Willingness to conduct market research in new ways
Resolving uncertainty in the business model	Understanding of what the firm should outsource and what new competencies it should develop Adaptation to the business model in response to learning
Bridging resource and competency gaps	Resource acquisition Establishment and management of internal and external partnership
Accelerating the transition from radical innovation projects to operating status	Accurate assessment of the transition readiness of the project and receiving unit Development of people, practises and structures for successful transition Ability to build up bridges between organizational units
Engaging individual initiative	Ability to effectively define the roles of senior management, key individuals, and the project team Building of appropriate reward system and career paths Promotion of informational network

Fig. 10: Seven Challenges in Managing Radical Innovation<sup>47</sup>

<sup>47</sup> Leifer/ McDermott/ Colarelli/ Peters 2000, p.8

As knowledge is the basis for innovation, and its role is crucial for corporate success, the next question would be which is the best work-form to share knowledge and to initiate innovations? And which is the corresponding best office concept for it?

This issue is researched by a formation, which became a synonym for innovation itself: the Santa Fe Institute in U.S. New Mexico explains why teamwork will be the work form of the future or at least in the next decades. "Only the mixed team can achieve what in the end appears to be innovation: a combination of already existing"<sup>48</sup> (David Krakauer, SFI-member for Mck Magazine). A project to prove this statement included team work on different issues by the most successful explorer in different sciences on a place, famous for its multi-cultural population and history. The designed model is the one a knowledge-organization could benefit from, to develop knowledge and innovation in long-term. As a main feature for knowledge organization, appears the corporate culture, giving some crucial points to be followed, so that long term success of an innovation and knowledge orientated strategy within a company can be achieved. Some of these points are: innovation as a goal for the corporate culture, incentives to motivate innovation behaviour, a healthy balance between creation and routine in the company etc (from a self-test, conducted in and for McKinsey).<sup>49</sup>

Some of the issues mentioned above are the state-of-the-art of internal and external relationship of a corporate organization; some of them are the trends for the next decades. Anyway, moving from the simply project-phase, which was the module for corporate success till the end of the 80's, toward the teamwork and knowledge and in future the innovation, working art and form changed significantly. Measuring of corporate success on this level changed too. While in the industrialised society the measure for success was productivity, when working with knowledge, the way to measure success is performance.

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<sup>48</sup> See Friemel 2005, p.30-31

<sup>49</sup> See McKinsey 2005, p 54-57



### 1.3 Performance Measurement in the office

In the previous chapters were described the features of the new time and new world, in which companies have to survive and succeed:

- New Industries approach (IT, ICT) changing radically the way and form of information flow and communication, having as consequence the world and especially – the market globalization, with other dynamics and competitiveness
- The most important consequence of IT and ICT revolution is the disappearing of the industrialized society and the emerge of the knowledge society
- The impact of knowledge and IT/ICT revolution on the companies, acting on the global market influenced a full innovation and change in corporate structures in all aspects: hierarchical organisation, philosophy, corporate culture and policy, work organisation, which reflected strongly on their appearance: the office

Since the whole corporate system changed radically, it is not possible any more to measure corporate success in the well know old way from the time of the industrialization: measuring the productivity.

The new way to measure success has to take into account every single element of the system, and to express and represent it in understandable and traceable way. The new approach is the corporate performance, which most important element is the office performance, because that is the environment and place where the success drivers and knowledge holders are and were the corporate success is created.

#### 1.3.1 The New Approach – Performance Measurement

The changing economical environment and therefore corporate organization made the system of a company much more complicated and the new approach needed had to consider all the elements of the system, because the importance and contribution of all elements was recognised.

To Corporate Performance Measurement considers every system element in three aspects:<sup>50</sup>

- Effectiveness – means that every individual in the company must have the responsibility to do the “right things”

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<sup>50</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.55

- Efficiency – to do things right: requires a grate rate of self-organisation on the side of the single employee
- Quality – the results must respond to the requirements: important preconditions for achieving quality is to set and communicate properly targets and to define criteria for the working process to make sure, that the desired quality will be achieved.

And in the context of all the above mentioned factors: company structural and process organisation, information and communication technologies and building and workplace concepts. The accomplished measures deliver a multi-layer model of the performance in the office, ranging from the type of organisation, information and communication infrastructure, through motivation and reward models, to working concepts and environment.

Performance Measurement is a system of new management tools like the above mentioned Balanced Scorecard for example, which unlike the methods from the time of the industrialisation, when success was equal to productivity, which was the simple ratio input/output, delivers a complicated model, observing not only financial results, but also important factors as customers and employees satisfaction, employees training and education, and process quality and knowledge management. The main aim of the Performance Measurement is to deliver important information for the increase and optimisation of office performance in the context of the factors and aspects, listed at the beginning of this chapter.

But before making the step to increasing office performance, there are some important aspects, which have to be understood: which are the drivers and the barriers for office performance, what influenced the work processes in the office and in which rate.

### 1.3.2 From Management of Mass Products to Management of Knowledge Products – Productivity vs. Performance

To establish completely new system for estimating corporate success is quite a big challenge considering the differences between social, economical, industrial, internal and external organisational factors between the company of the “mass-product-time” and the “knowledge-time” company. The tasks, which the management must handle, and the system’s feature to work in and with, are completely different.

	Industrial Society	Knowledge Society
Process Or-	- mass-products and standard-	- specialized knowledge-linked tasks

## New Office Concepts for New Corporate Structures

<p>ganisation</p>	<p>ized procedures</p> <ul style="list-style-type: none"> <li>- working process and production process split able in sub-processes</li> <li>- use of standards</li> </ul>	<ul style="list-style-type: none"> <li>- unique projects</li> <li>- highly complicated and networked systems</li> </ul>
<p>Communication and Hierarchy</p>	<ul style="list-style-type: none"> <li>- top-down decision making and communication of tasks and goals</li> <li>- no feedback</li> <li>- clearly defined pyramid-like hierarchical structure</li> </ul>	<ul style="list-style-type: none"> <li>- processes definition on employee level (where knowledge is)</li> <li>- personal responsibility</li> <li>- networked and plain structure</li> </ul>
<p>Products and Customers</p>	<ul style="list-style-type: none"> <li>- standardized products</li> <li>- anonymous customer</li> </ul>	<ul style="list-style-type: none"> <li>- unique products</li> <li>- long-term relationship to the customer</li> </ul>
<p>Approach imported and suitable for following industries:</p>	<ul style="list-style-type: none"> <li>- Mass-product industries</li> <li>- Banking</li> <li>- Health-Care (Hospitals etc.)</li> <li>- Hotels</li> <li>- Insurance companies</li> </ul>	<ul style="list-style-type: none"> <li>- Media</li> <li>- IT</li> <li>- ICT</li> <li>- Telecommunication</li> <li>- Consulting</li> <li>- Innovation/Technology Industries</li> </ul>

The factors and drivers in the knowledge industries changed; therefore the system to measure success had to change as radically as its environment. Since success is created on the lowest level of the employees, the impulses for improvement also must be searched and motivated on this level. Because it is not any more about producing a mass-product, but working out of

unique solutions and results, knowledge share and technologies, supporting and enabling it, become a crucial factor and team work replaces completely the solo-work. To measure the success of this system, it is not possible to concentrate on productivity and just financial results, because the drivers are non-financial. Therefore, to get an objective overview of the new system and the way it is working; managers have to concentrate on the office performance, and considering the external environmental factors, to estimate the corporate performance.

### **1.3.3 The external influence factors on the performance (state of the art)**

A study of the Vienna University of Economics and Business Administration<sup>51</sup> researched the system of factors and aspects influencing the performance in the office, defining the sides affected and their points of view. The result is a networked and complex system of features and aspects, which are important for the understanding and therefore, optimizing and motivating office performance.

#### **1.3.3.1 Identification of the Participant Sides**

To identify the factors, the office was represented as a system, influenced from different sides by the needs and requirements of different players, for example.<sup>52</sup>

- the company (shareholders, employees, managers)
- the society (politics, family)
- institutions (the state, unions, universities, insurance companies, telecommunication companies, supporting firms for facility management, technical equipment, office furniture; customers)
- global aspects ( medicine, technology, ethics, aesthetics)

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<sup>51</sup> See Blaschko 1989

<sup>52</sup> See Blaschko 1989, p.30-45

**1.3.3.2 Identification of the System and the Influence Factors**

The next step is to define the system's elements from the point of view of all the players.

The office from the different points of view is a system for:<sup>53</sup>

Player	Participant	The office is the system to achieve following goals:	Influence Factors to achieve the goals of the system:
Company	Management	<ul style="list-style-type: none"> <li>- best performance, financial success</li> <li>- recruiting of qualified employees</li> <li>- competitive advantage</li> <li>- improving of long-term customer relationships</li> </ul>	<ul style="list-style-type: none"> <li>- acknowledgment systems, goals communication, workplace configuration and flexibility, employees competence</li> <li>- possibility for additional education, salary, self approval, office climate, office concepts, corporate image and market position, social services, acceptance</li> </ul>
	Share	<ul style="list-style-type: none"> <li>- achieving of highest possible returns</li> </ul>	<ul style="list-style-type: none"> <li>- revenues, personal cost, equipment cost and therefore office concept and configuration,</li> </ul>
	Employee	<ul style="list-style-type: none"> <li>- self-realisation</li> <li>- intellectual and social development and integration</li> <li>- higher life standard</li> </ul>	<ul style="list-style-type: none"> <li>- corporate culture, motivation, challenge, tasks characteristics</li> <li>- acknowledgment system, rewarding system, hierarchic transparency, carrier chances, corporate identity, motivation, self realisation, office concepts, workplace configuration, flexibility, design and ambiance, infrastructures</li> <li>- carrier chances, additional and further education possibilities, corporate market image and position</li> </ul>
Society	Policy	<ul style="list-style-type: none"> <li>- influence on the electors</li> </ul>	<ul style="list-style-type: none"> <li>- workplace safety, education possibilities, social satisfaction, public services</li> </ul>

## New Office Concepts for New Corporate Structures

	Family	<ul style="list-style-type: none"> <li>- securing of the existence</li> <li>- improving of the family atmosphere</li> </ul>	<ul style="list-style-type: none"> <li>- carrier chances, salary, rewarding systems, education</li> <li>- rewarding systems, private sphere, hierarchical transparency, motivation, self-realisation, corporate image and identity, workplace and office concept</li> </ul>
Institutions	State	<ul style="list-style-type: none"> <li>- contribution to the GDP</li> <li>- taxes</li> </ul>	<ul style="list-style-type: none"> <li>- services capacity, educational level</li> <li>- salary level, taxes moral, taxes policy</li> </ul>
	Unions	<ul style="list-style-type: none"> <li>- respecting employee interests</li> </ul>	<ul style="list-style-type: none"> <li>- existence of unions, contribution amount, control, laws</li> </ul>
	University	<ul style="list-style-type: none"> <li>- initiating and applying of academic knowledge</li> </ul>	<ul style="list-style-type: none"> <li>- equipment, acceptance, work tasks, process organisation</li> </ul>
	Insurance	<ul style="list-style-type: none"> <li>- minimization of insurance efforts</li> </ul>	<ul style="list-style-type: none"> <li>- financial precautions</li> </ul>
	TC	<ul style="list-style-type: none"> <li>- implementation of telecommunication technologies and services</li> </ul>	<ul style="list-style-type: none"> <li>- IT and ICT infrastructure, geographical location of the company, technical equipment</li> </ul>
	Office equipment	<ul style="list-style-type: none"> <li>- best possible corporate success</li> </ul>	<ul style="list-style-type: none"> <li>- involve employees in the processes of software development, software and hardware ergonomics</li> <li>- developing cost of the office, saving potentials through suitable office concept, flexible furniture, know-how in research and development</li> </ul>
	Customers	<ul style="list-style-type: none"> <li>- performing the necessary products and services in optimal quantity and quality</li> </ul>	<ul style="list-style-type: none"> <li>- laws and norms, market requirements, competition</li> </ul>
	Global aspects	Medicine	<ul style="list-style-type: none"> <li>- maintenance of psychological and physiological health</li> </ul>

Technology	- initiating of new optimization, innovations and solution ideas	- attention, contact person, innovation and renewal potential, communication, education
Ethics	- realizing ethical values	- corporate philosophy, corporate culture, self and remote control, religious influence
Aesthetic	- realizing aesthetical concepts	- design, form, colour, harmony

This was a very detailed overview on the external, global factors influencing office performance. But even better managers have to know the factors, which are influencing directly office performance – the internal factors. The next and final step would be to investigate and estimate the network and linkage between the elements of the system and to understand which one and in what rate it influence the others to get the tools to optimize and control performance and change it consciously.

#### **1.3.4 Performance as a crucial success factor in the knowledge society – internal factors**

The joint research project of Office 21® - "Office Performance"<sup>54</sup> was performed as a questionnaire and had the aim to define the most crucial, direct influence factors on office performance.

The questionnaire included 52 questions in different aspects: work, team, knowledge, technology, office. The evaluation of the results was made on the basis of 733 valid questionnaires.

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<sup>53</sup> See Blaschko 1989, p.30-45

<sup>54</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.63

To identify the most important factors, the team offered a framework called Office Performance Index, which included following main aspects:<sup>55</sup>

- Effectiveness – the possibility to perform the right actions
- Efficiency - .adequate resources for fulfilling the tasks
- Result Quality – high quality fulfilment of the tasks
- Process Quality – optimization of the work processes in the own sphere

Thus, the most important factors were searched, which influence directly office performance in these four aspects.

The graphic bellow represents the findings of the project:

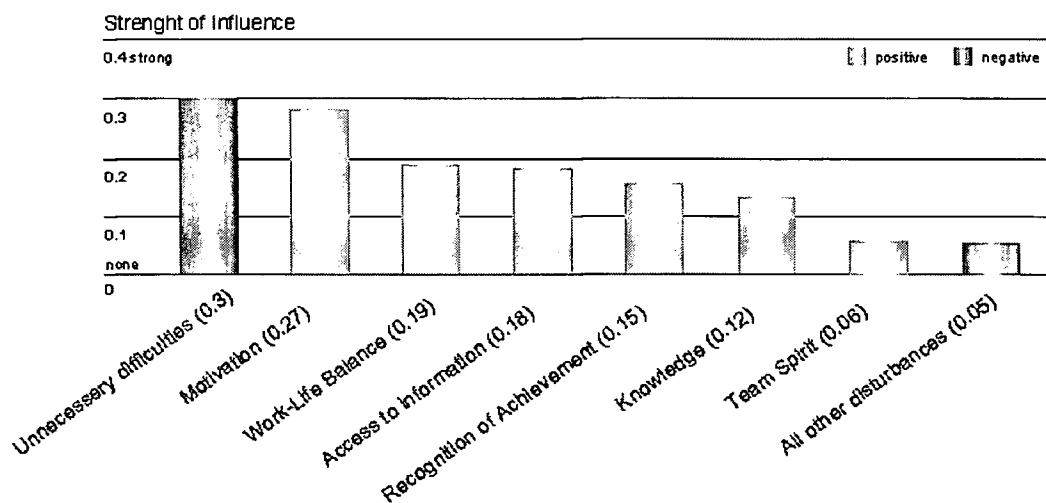


Fig. 11: The eight most important factors affecting office performance<sup>56</sup>

<sup>55</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.64

<sup>56</sup> Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.64



### 1.3.4.1 Unnecessary difficulties

As unnecessary difficulties can be identified all performance killers like bureaucratic restrictions, inadequate planning and co-ordination, poor process management etc. This group represents about 43 % of the problems, influencing negatively performance and therefore, having the greatest potentials to improve it by implementing of simple frameworks for abolishing bureaucracy, and take into account office organisation, as well as implementing flexible office concepts to enable optimal work processes.<sup>57</sup>

### 1.3.4.2 Motivation

The revolutionary recognition of the importance of motivation for office and corporate performance happened in the 90s, whereby the drivers were the fast developing IT and consulting companies. After this recognition, companies started to think about frameworks to consider motivation already in the recruiting phase, to develop motivation-strategies and try to reduce staff turnover. The result was a transformation of the management approach toward employees: managers started to observe the staff as the most important success factor in the knowledge society, who has to be motivated and need to stay motivated. Some important issues to be considered in term of staff motivation are the recognition of the achievements and the team-building.<sup>58</sup>

### 1.3.4.3 Work-Life-Balance

The fact that this factor is estimated as the third most important proves that performance is created not only in the office. Here is the place to mention a problem, discussed more and more in the last decade, which can be observed as a direct result of a Work-Life-Misbalance: the Burn-Out Syndrome. Several studies underline the high potential of the appearance of the Burn-Out Syndrome in the middle management. This can have crucial effects for the company, since the middle management is the key element to influence the motivation of all the staff on all lower levels. The more this problem gains on importance, the more office and work concepts like tele-working and home office will approach and get a greater share among preferred and implemented office concepts.<sup>59</sup>

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<sup>57</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.65

<sup>58</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.67

<sup>59</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.68

### 1.3.4.4 Access to information

For the evolutionary level to which Knowledge Society has already reached, evidence the fourth and sixth factors: access to information and knowledge. Accessibility of information as well as telecommunication infrastructures is crucial for the efficiency of work processes. The organisation of accessing information on its turn must be designed and performed extremely efficient to avoid times loses. That is why inefficient information and telecommunication infrastructure can cause terrible loses for the company.<sup>60</sup>

### 1.3.4.5 Recognition of Achievement

The recognition of achievements stands in very close relationship to some of the other factors, as motivation and knowledge for example. Especially in the conditions of complicated, network projects, when despite of the energy, time and engagement employees invest in their job, the result of all the efforts can be seen first at the end, and deepening in their task, can loose the overview, feedback is very important: employees have to know, that they are on the right way and that their efforts are recognized.<sup>61</sup>

### 1.3.4.6 Knowledge

Information and Knowledge are in very close relationship with each other, although, when speaking of knowledge, it is meant what can be done and is done with the available information to make progress. Therefore, knowledge could be interpreted as a personal capability. However, this is one of the factors, which probably will gain more on importance and take a higher place. How important is knowledge and knowledge management for a company shows a McKinsey study from 2001:

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<sup>60</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.69

<sup>61</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.70

## New Office Concepts for New Corporate Structures

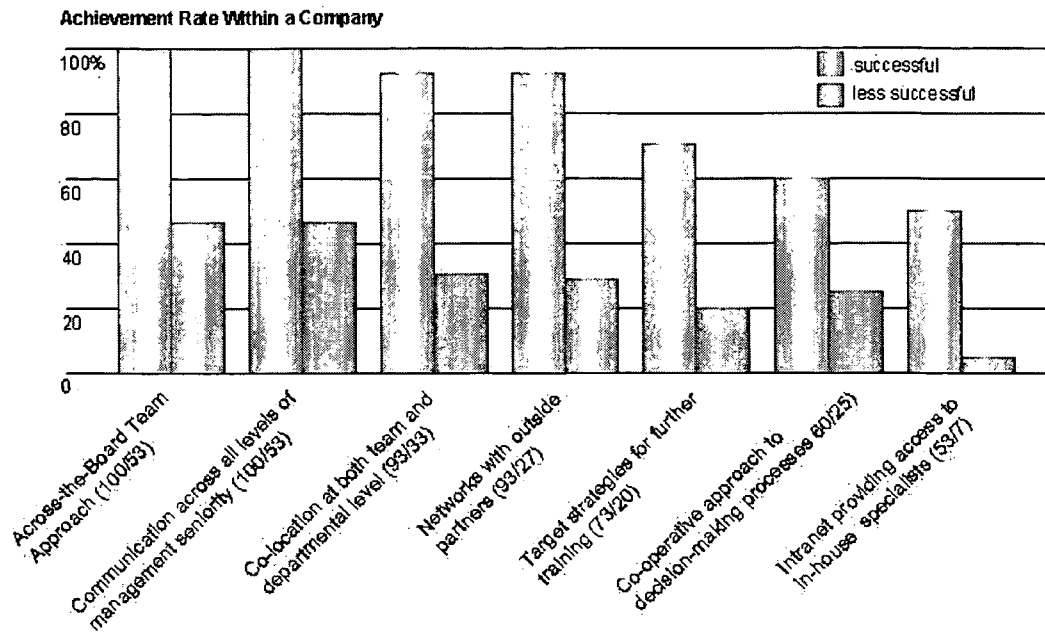


Fig. 12: Features of a successful system of knowledge management<sup>62</sup>

### 1.3.4.7 Team Spirit

The emerging Knowledge Society hardly leaves some free space for individual performance. The complexity of the problems and the dynamically changing environment requires active and intensive knowledge share and development which can be handled and delivered only with a team work. A very important requirement in team is the free communication. Some of the companies handling with knowledge as some consulting firms for example, go even further, introducing the rule of the "obligation to controvert" and doing so not only enable free communication, but also oblige their employees to share the newest information their have, without any difference on which hierarchical level they stay.<sup>63</sup>

<sup>62</sup> McKinsey 2001, p.71

<sup>63</sup> See Ehlers/Greisle/Hube/Kelter/Rieck 2003, p.72

### 1.3.4.8 Other Disturbances

In this category is considered also the office concepts of a company concretely and all the disturbance and performance breaks due to false office design and wrong chosen and implemented concept. A wrong office concept can ruin a perfectly planned process organisation, and make all the investments in equipment, IT/ICT infrastructure meaningless. That is why it is not possible to implement "the good old" office concepts like cellular and group offices for a company handling with information, knowledge share and development as an IT company or a consulting company for example.<sup>64</sup>

The radical change of the system and the global environment, in which companies are acting, lead to a radical change in their structures, and therefore in the appearance of their structure, the place, where work happens and success is created, their face to the world: the office.

## 2 The Office Concepts

"The office is where you are!"

### 2.1 The office concept philosophy

How manage office concepts to respond to the changing environment and the new challenges and what is the difference between the classic and the new office concept?

All the factors, discussed in the previous chapter, representing the new corporate structures and philosophy initiated by the new industries, economical and social quantities, have their influence on the concept and the philosophy of the workplace.

The office, once just the formal place, where the activity of working happened, developed to a significant factor and criteria for performance and success. Exactly in the way industries, technology and corporate structures change, the office is no longer a standard solution for all cases, but an intensively changing system, depending on and involving technical, economical and social changes and innovations, and is becoming an unique project for every single customer.

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<sup>64</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.73

The office is winning recognition for its importance in corporate life and success and is an object of studies and projects, which have the aim to research and predict the nature of the office-system and its possible development in the context of the continuing knowledge and technical evolution and to discover and mobilize its hidden potentials for better performance.

## 2.2 History

The history of the office is logically depending on the history of the corporate structures and is changing under the influence of similar factors.

In the same way, in which the transition from productive industry society to a knowledge society has its radical influence on corporate structures and philosophy, there is a time boundary in the office history in both periods.

The "industry" office correspond in its organisation and form to the one-way (most top-down) processes and identical "conveyor"-like concept to the philosophy of production, while the "modern" office concepts tend to unique projects for every company and are the result of many detailed factors considered in aspects, no one would think about before.

### 2.2.1 The Traditional Workplace

The philosophy of the mass-produced products industry leans on standardised processes and plans, which can not be separated, but multiplied and applied as standards. The corresponding office concepts are organisation and function in the same way and philosophy, where "the physical product and associated production technology were the determining factors in designing work, management and organisation structure". Other main characteristics were strict communication lines, running "top-down", strict hierarchical organisation and performance, measured with the physical product of the work process.<sup>65</sup>

The most common office forms are similar in their "mass-product"-like character and have only indirect contribution to the corporate success by fulfilling the only task of being a technical workplace. The office philosophy till the end of the 90s is based on own, monofunctional, and individual workplace for each staff member.<sup>66</sup> The following office forms appear in different periods, but do not replace the each other. They continue to exist parallel, based on, but also as complement for the existing ones.

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<sup>65</sup> See Drucker 1999, p.110

<sup>66</sup> See Kelter 2002, p.128

The most common office forms are:

- the cellular office
- the open-plan office
- the group-office
- the combination office

with a lot of variations and combinations in each main category.

The following picture represents the appearance and development of these office forms.

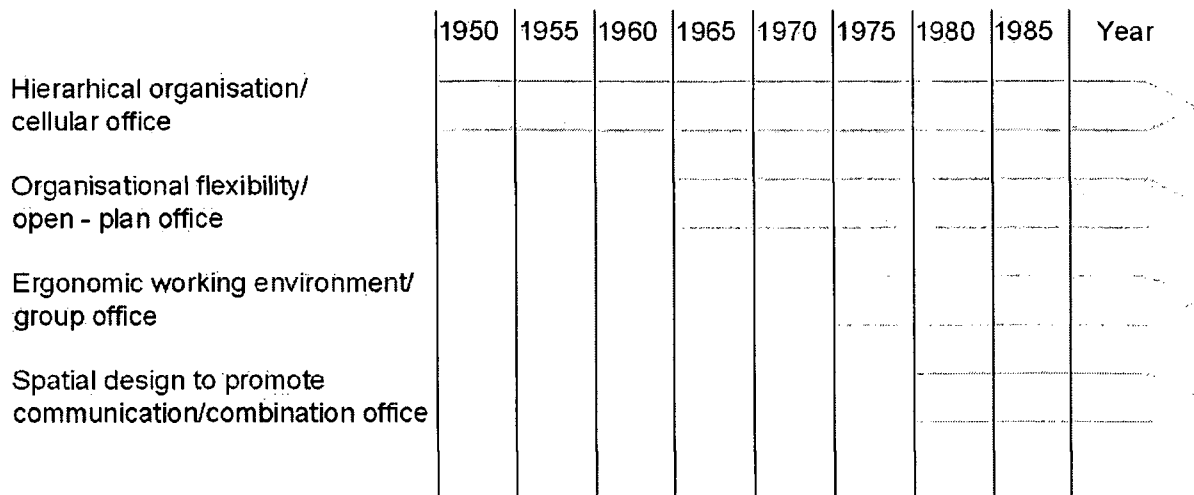


Fig. 13: Typological development of office spaces<sup>67</sup>

### 2.2.1.1 The cellular office

The cellular office is a classical office form of the small-space office group. This office form boomed after the end of the 50's, especially in public administrative departments or companies' headquarters and is still widely spread.

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<sup>67</sup> Gottschalk 1994, p. 127

Typical for his office is the closed off working area, which depending on the users number can be a single or a multi-person cellular office. The constructive features are defined by the building's axes and vary as follows.<sup>68</sup>

- depth between 4,00 m and 5,50 m for building's depth from 12 m to 14 m,
- width ca. 2,50 m,
- height from 2,80m to 3,60 m,
- single offices are connected through a corridor;
- natural lighting and ventilation,
- pipes, lines and cables lead through balustrade or floor canals.

The cellular office is basis and module, on which are built all further office forms from the traditional workplace group.

### 2.2.1.1.1 Single Cellular Office

The most important advantages of the single cellular office are the high light and acoustic quality, the private working atmosphere, which the users can create and adapt for themselves. It allows self-dependent and creative work and is the preferred form for rooms, where discussions with customers or of confidential sort have to take place and is therefore not suitable for team work. It is expensive in terms of space and the size often corresponds to the hierarchical status of the user.

### 2.2.1.1.2 Multi-person cellular office

This office form is a variation of the singular office form. It is designed for more users and has the advantage of better communication and information flow, but also the disadvantage of greater work process disturbance. This office form is suitable for teams and projects with very clear working processes within the group, established communication and eventually necessity for deputizing. There is no clear boundary between multi-person offices and group offices, some authors give 4 -6 person as approximate guide value for differentiation between the two categories<sup>69</sup>, other 4 -10.<sup>70</sup>

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<sup>68</sup> See Hagner 2004, p.13

<sup>69</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.130

<sup>70</sup> See Hagner 2004, p.15

### 2.2.1.2 The Combination Office

The first attempt to combine the advantages of both the single cellular and the multi-person office was the office concept for Zander & Ingeström from 1970<sup>71</sup>. The concept of the combination office offers at the same time the necessary privacy for concentrated work and also constructive solutions to motivate communication and is optimal for companies, where the working process is often switched from independent work to team work.

The main module of the combination office is the "work berth". In the standard combination office work berths are situated along the facades, naturally lighted, flexible ceiling-high walls separate them from each other and a glass wall – from the interior multifunctional zone. The flexible walls allow redesigning the work berths from a single person into a two- or more people office. The internal functional area with facilities for all staff (fax, copier, archive, etc.) is located in the middle of the work berth lines, can be used for meetings and discussions, but also offers more active meet and communication possibilities.

The constructive characteristics of a combination office are:

- 8,00 m<sup>2</sup> – 12,00 m<sup>2</sup> per work berth,
- depth 4,00 m – 5,00 m for building's depth between 15,00 m and 17,00 m,
- width from 2,40 m to 3,00 m,
- work berths connected to an internal functional area,
- pipes, lines and cables lead through balustrade and floor canals or hollow floor systems.

### 2.2.1.3 The Group Office

Another concept, which tried to handle the disadvantages of the standard office forms, is the group office, which also appeared in the 70s. Its main task was to enable the transition from the mass-product office for anonymous workers to a workplace with an emphasis on the social-psychological side of the work life and to stimulate team work with spontaneous communication. In term of users' number, it stands between the multi – person cellular office and the open - plan office and is usually designed for groups of 6 to 20 people. That makes it comfortable not only for teams or groups, but also for separate organisation units.<sup>72</sup>

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<sup>71</sup> See Fuchs, Puell 1990, p.131

<sup>72</sup> See Hagner 2004, p.19



The strongest argument against this office concept is the noise disturbance. Because of the small distances between the colleagues working in the office and the smaller concentration of the staff, here can not be relied on the "masking - effect". A solution with partitions is possible, but is a step backwards to the multi-cellular or the combination office.

The dimensions of a group office can vary strongly. The most common are as follows<sup>73</sup> (Hagner: 2004):

- room depth 4,00 – 5,50 m for one or two flush buildings with 12,00 – 14,00 m building depth; depths can vary
- various widths
- pipes, lines and cables lead through balustrade or floor canals.

### 2.2.2 Life and Demand Cycles of the Classical Office Concepts

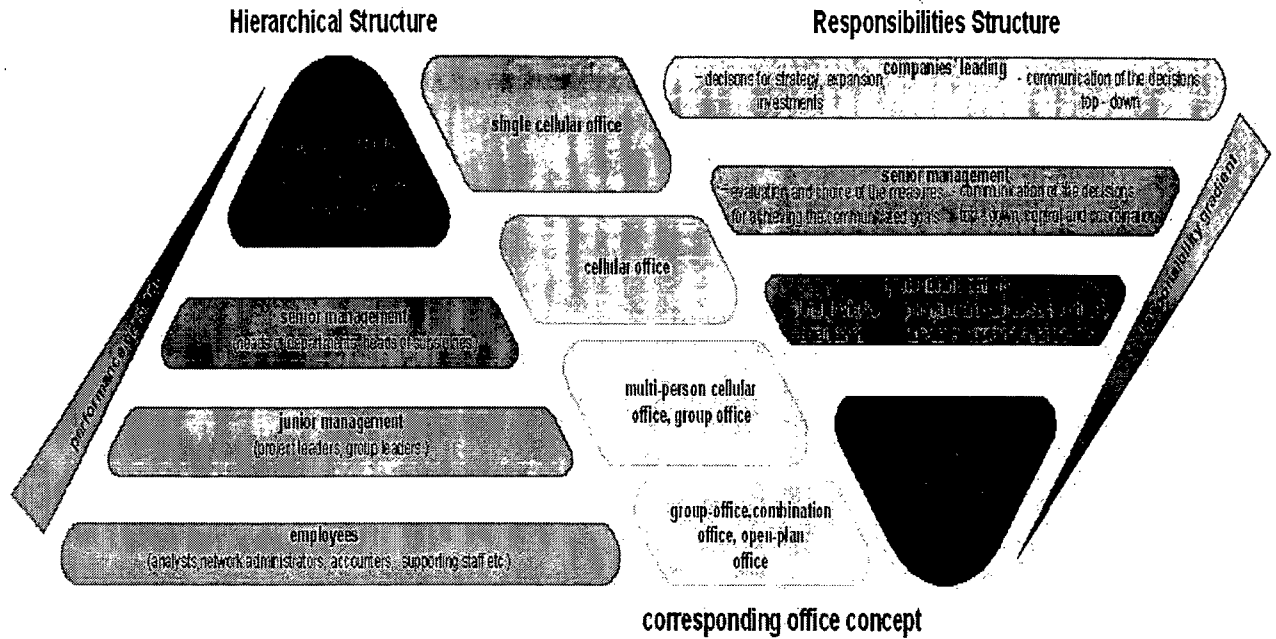
The described office forms have a common feature: they are designed to suit best the requests of a company, acting in the mass-product industries. Even if there are attempts, to increase the role and influence of the social factor on corporate performance, this factor never gets recognition as a leading and crucial factor for productivity and performance in the described classical, "industrial" office forms, while on the other side there are priority factors - hierarchy with clear responsibilities and decision communication, strict processes, processes course and process optimization, to which correspond also mass-product like office forms .

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<sup>73</sup> Hagner 2004, p. 21

## New Office Concepts for New Corporate Structures

The following diagrams show the link between organisation structure and intern responsibilities, as well as their representation on the hand of the common classical office forms.



As mentioned at the beginning, each of the described office concepts started its existence and implementation at different time of industrial and social development, and had their own evolution and demand cycles, as it can be seen on the hand of the following diagram.

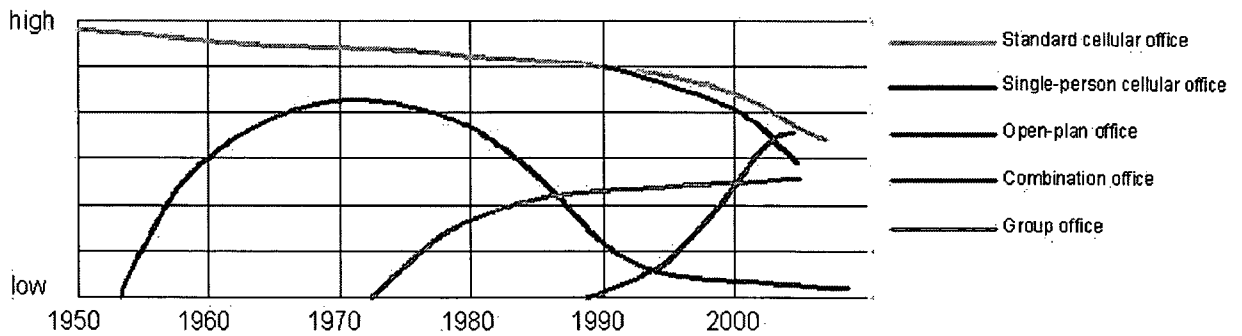


Fig. 14: Cycles of demand and importance of different office concept in new buildings <sup>74</sup>

<sup>74</sup> Degi 2003

It is obvious, that classical office forms are losing on importance. The following chapters explain what are they replaced with, what are the leading factors for the change and what are the expectations for the development and transformations of the office concepts.

### 2.3 The Logical Reaction – New Office Concepts

“The office is where you are”

#### 2.3.1 New Office Concepts

The consequences, to which lead the booming development of technology and communication, can be summarized with one word - globalization. The world is getting “smaller”, the competition – harder, and companies within the mass-product industries feel an enormous pressure. The products of the single competitors are getting more and more similar, there are limited possibilities for process optimizing, the traditional markets are stagnated and for many companies there is one single opportunity to survive and this is acting on the global market <sup>75</sup>.

##### 2.3.1.1 Acting on the Global Market

The global market has completely different structural conditions in comparison to the smaller local markets:

- international competition
- hardest competition pressure
- short decision terms and ways
- a crucial success factor is the actual information
- individual products
- reduced product life-cycles
- increasing innovation pressure
- increasing operating and management costs

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<sup>75</sup> See Schneider , 2007

There is a change needed. Companies are pressed to change and get flexible, to find potentials for better performance – to motivate employees, to consider the potentials of intellectual capital, to develop a personal approach to each customer – to change their policy and philosophy, to set other priorities so that they stay competitive and survive, to change their way and approach to work.<sup>76</sup>

The final goal is to adapt the operative and administrative organisation and structure to the market's demands and have influence not only on the leadings' and personnel structures, but also on organization's forms, work processes, work places and concepts.

### 2.3.1.2 Office Concepts Evolution

Concretely means this for a company: dynamism, faster decisions, faster communication of the most current information, higher work quality and performance. Changes include new working methods, which need new office concepts and new office real estate structures<sup>77</sup>.

Changes mean:

- flexible forms of process organisation remove old rigid performance organisation
- interdisciplinary team-work instead of sequential working steps based on each other and following each other
- many and diverse forms of tele-working and non-territorial working concepts instead of central organisation forms and management
- skills and team competence gain priority, while leading and hierarchy competence loose on importance
- flexible time-management instead of rigid working norms
- complex task structures replace the fulfilling of restricted separate tasks
- goals agreement followed by a result check instead of giving separated tasks with single task fulfilment control
- employees with wide range of qualification competence instead of employees with restricted competence and limited deployment
- multifunctional technologies instead of mono-functional equipment

<sup>76</sup> See Schneider 2007

<sup>77</sup> See the same

Office concepts must be able to react to the changes and the new requirements. But conventional office concepts can not.

Classical office concepts can not provide the optimal working spaces, corresponding to the new working profile; the areas can not be transformed into new structural and organisation solutions that is way this is not a task of the companies only to consider the organisation and structural concepts of their workplaces.

Architects, civil engineers and facility managers are requested to work out together new structural solutions and concepts for office real estates - a request, which is still not actively realized and worked on<sup>78</sup>.

The diagrams bellow follows the office concepts development with linkage to technology, communication, mobility and flexibility – with the common forms, in which they are oriented toward individuality of changing economical and industrial structures.

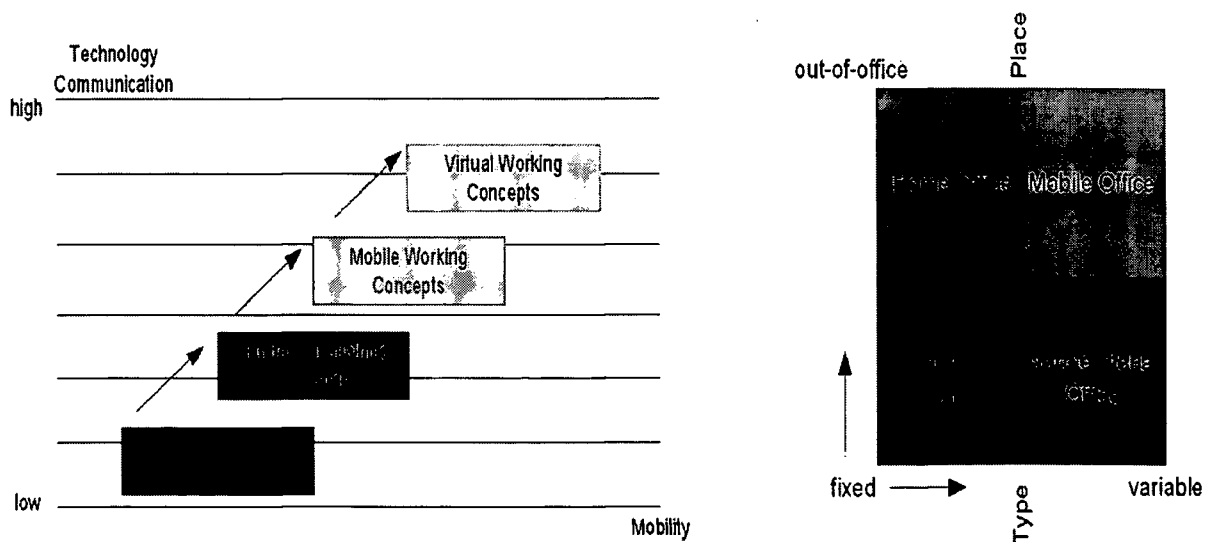


Fig 15: Development of mobile working forms in term of technology (Greisle, Ehlers: 2003)<sup>79</sup>

Fig 16: Types of mobile Working (Greisle, Ehlers: 2003)<sup>80</sup>

<sup>78</sup> See Schneider 2007

<sup>79</sup> Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.89

<sup>80</sup> Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.112

The aim is not just to replace one office concept by another, but to find the best solution to respond to customer needs and the new conditions. Often this includes flexible concepts, combining new workplace concepts with traditional concepts to find the optimal solution for a given customer. However, workplace concepts do not correspond to social status any more, but to work kind and functions. The general division of office concepts in term of mobility and flexibility is as follows:

### **Traditional workplace:**

Existing office form will not be completely replaced, they will find their use, when it is upon to fulfil tasks, in which:

- typically the person is allocated to a central workplace as a contact point (for example, assistance);
- workplaces at which work must be carried out with specific equipment or at which specific facilities must be quickly and organisation available at all times (for instance, IT administration);
- workplaces for routine activities, at which the achievement of targets assumes the presence of the employee is (for example, accounting).

### **Non-Territorial Office:**

Non-territorial office concepts come into consideration for works, characterized by mobility and flexibility, for example<sup>81</sup>:

- Tasks which assume communicative work in different places or locations within the company system (for example, project director);
- creative tasks which take place in varying, flexible working environment (for example, research and development);
- routine tasks which can be carried out on standardised workplaces and for which the actual location of the work-place is not important (for example, Hotline).

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<sup>81</sup> See Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.133

### Home-Office:

This working concept is even more mobile and flexible and is suitable for jobs as for example<sup>82</sup>:

- tasks in which it is the presence of the employees in the company building is not compulsory for achieving their goals (for example simple, self-contained, process-based Jobs);
- tasks where it is not necessary to communicate face-to-face with other (for example, call center).

### Mobile Work:

Mobile work has the greatest degree of mobility, where employees do not have a fixed workplace at all:<sup>83</sup>

- tasks involving active contact with customers (for example sales, project work);
- tasks in which necessary contacts can be maintained without detriment by means of technological aids (for example, consultancy, Software development)

## 2.3.2 Forms

Many of the new office concepts, which appeared in the last decades, are still theoretical office concepts which are expected to gain on importance and get conventional in the next century. These office concepts, their characteristics and field of implementation are observed in detail below.

### 2.3.2.1 Non- Territorial Office

Flexible, market and customer oriented organisation concepts are main reason for changing working concepts, where employees do not have fixed working place at their disposal for carrying out their tasks. It is much more a working organisation, where work takes place in meeting rooms, by customers or suppliers and on the way from one place to another (Tele-Working).

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<sup>82</sup> Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.113

<sup>83</sup> Ehlers,/Greisle/Hube/Kelter/Rieck 2003, p.113

### 2.3.2.1.1 Concept Features

The own working place in the company's headquarter is losing on importance and implementation. Under these circumstances it is no longer economic to provide each employee with a personal desk. By this working form the average time spent in the office is limited to 2-3 days a week or few hours a day. This makes an arrangement of non-territorial, shared desk reasonable, which can be free and random chosen and occupied by the employee, who is staying at the office at this moment. Another argument for this office form is the consistently increasing practise of flowing working times with overall office occupation from 6 hr. in the morning to 22 hr. in the evening.

Non-territorial working concepts are enabled by the innovations in technology and IT. They provide only the exact space needed at a particular moment and are therefore plausible and economic. It is statistical proved that about 15% - 20% of the working areas in offices are not occupied because of meetings, business trips, holidays, medical conditions etc. and the use of a non- territorial office concept gives the possibility to optimize the workplace allocation.

When working in a non-territorial office an employee decides which working place to occupy by means of different criteria: distance from team-members, task-specific requirements etc. Everything else needed for fulfilling his/her tasks is the notebook and a roll container, including the project-specific documentation.

Non-territorial office concepts can be combined with conventional office concepts to achieve the optimal office layout for the requirements and the specifics of the customer; however, the best suitable classical forms to be combined with are the transparent and open office structures of the group office and the combination office. These are office forms which additionally motivate communication – something very important within a team, when team members are most of the time from absent, on their way to or from a customer.

The requirements of the employees on a non-territorial office can defer strongly from each other: some stress the need of intensive communication to other team members and superiors, other consider the necessity of a think-cell, where they could concentrate if required. Therefore it is important for non-territorial concept to remain flexible in term of structure and offer different workplace types as single workplaces, team workplaces, workplaces assuming intensive communication, but also relatively isolated think cells for concentrated individual tasks. To fulfil all these framework requirements the non-territorial office concept should be planed as an open, flexible structured and furnished office area for about 20-30 employees with included option for reorganizing the layout, the sectors and the workplaces.

### 2.3.2.1.2 Implementation problems and conditions



Some problem to be considered is the introducing of the non-territorial concept itself as an alternative to traditional workplace, because it could get hard for employees to adapt and to accept the new office concept. Therefore the decision for and the introduction of a non-territorial office concept should happen, when some conditions fulfilled:

- if it is about a radical transition from a rigid to a flexible, non-territorial office concept, it is important, that the employees are involved in the discussion on the new office concept, so that they, on the one hand, get prepared and intimate with it, on the other – to fulfil best the requirements and needs of those, who are going to use the office
- another approach it so implement a non-territorial office concepts there and when the personal workplace is anyway not in use or is not often use, because of predominant out-of-office activities and type of work (consulting, technical support)

### 2.3.2.1.3 Desk Sharing

Desk-Sharing concept belongs to the non-territorial office concepts. The implementation of Desk Sharing is especially then reasonable, when a significant part of the stationary assigned workplaces stay unoccupied for more than four hours a day or for whole days.<sup>84</sup> Some situations, in which the introduction of a non-territorial office is clearly reasonable:

- consulting teams in both external and internal work
- agents, employees, who are on external work the week through and come on one single day for team meeting etc. in the office
- managers, commuting between different plants, subsidiaries etc. within the company's complex

In these cases, by estimating the "free" and not optimal used spaces, the workplace numbers can be decreased significantly, and in doing so potentials for processes optimization can be unlocked and the office efficiency increased.

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<sup>84</sup> See Schneider, 2007

The consequence of the implementation is an office concept, where employees are not assigned with own workplace, but share one with another "mobile" team member or colleague. The workplace, established for the purposes of Desk-Sharing is used in a shift way and is occupied at different times by different employees. Work related documentation is no longer kept in the desks, but in centralized facility, designed for the purpose; digital information can be accessed directly on the centralized data-base. All individual data and documentation is stored in roll containers – "Caddies", which are assigned to each employee and together with his/her notebook represent the equipment of the non-territorial workplace.

Workplace must not be the same every time; it can be chosen depending on the work type characteristics. Therefore it has to correspond to some organisation and functional requirements. Its constructive parameters must be suitable to the user (desk and chair high etc.)

When deciding for a non-territorial office concept companies have to take into account the requirement for very well planned and fit working processes and organisation. Because workplaces are less than employees a centralized system has to be established to avoid intersections.

One solution for the problem could be the implementation of hostelling-software for internet supported time and location planning.<sup>85</sup> Getting connected with the office through this software, employees can book a workplace, divert calls and phone numbers, reserve meeting rooms and even order catering. Further, by announcing the time and length of the stay, an employee can book the resources and equipment necessary for completing the tasks

The use of system of the kind must avoid that employees stay without a workplace in the office, because of insufficient space and process organisation. And at last but not at least, the system facilitates the calculation of areas and services costs within the organization's sectors in terms of cost cause.

For the staff, who is in the internal service (technical support etc.) – the so called work-nomads - and therefore do not have an assigned department, but need a workplace within the firm, can be established desk-sharing stations in each department or sector to be used, when completing some job in the concrete department or sector.<sup>86</sup>

Desk-Sharing can definitely not be applied in the case, when employees have temporary activities in the field service and in general need fixed workplace in the office.

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<sup>85</sup> See Schneider, 2007

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### 2.3.2.1.4 Desk-Sharing and Knowledge - Accenture Headquarter Kronberg

The following case study describes how the concept of desk-sharing can work for a company. The example is on the base of implemented non-territorial office concept for the consulter Accenture.

Accenture is internationally operating consulting firm, originating from the giant Andersen Consulting – the largest consulting company worldwide.

By the replacement of the German headquarter of the company from Sulzbach to Kronberg the new office building was drafted in a non-territorial office concept<sup>87</sup>.

The Desk-Sharing principle is implemented in the company since 1995 and all Accenture offices were gradually reconstructed according to the desk-sharing since then. Doing so, the company managed to reduce the working area in square meters for employee from 16 m<sup>2</sup> to 7 m<sup>2</sup>. The headquarter of the German speaking area on its new location in Kronberg was the last adapted to the principle of desk-sharing.

For the employees of the company meant this a workplace reduction from 900 (as many the employees of the company at this time were) to 325. The aim of this concept was to save about 25% of the operating and lease costs, because the consulters spent about 80% of their working time with customers<sup>88</sup>.

The Accenture desk-sharing office concept is named "Now Show" and has following aims and characteristics:

- to dispose workplaces, which are empty over longer time and occupy valuable office areas
- to reach a workplace/employees number ratio of 1/5 – this means 1 workplace for 5 employees
- to achieve a flexible and multifunctional working concept by organisation special rooms as phone cells for phone conferences, project rooms for team meetings, think cells and standing places in the log-in area, where emails and internal correspondence can be retrieved
- a "huddle-room" – the rest room

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<sup>87</sup> See Obermeier 2000

<sup>88</sup> See the same

The single workplaces can be booked and be assigned only for a whole day. By the arrangement of the workplaces every individual items are abandoned without a difference if it is a regular employee workplace or a workplace of a manager.

The documentation is no longer stored in the desks or in cabinets but in the anteroom, where everyone has at his/her disposal a locker to keep it.

If the consulter plans to spend the day in the office, he/she books the workplace per Email or phone. After arriving the employee checks-in in the software centre, which is responsible for the administration of the workplaces.

To avoid errors as for example to recognize as occupied a free workplace or to assign to someone a workplace, which is already booked or occupied, a check is performed at least twice a day to compare the required with the actual state of the system. The employee, who is sitting at the wrong place or did not cancel the booking on time, gets alerted for the problem.

The actual "workplace" of the employees consists of their laptop and the "caddy"; anything, that has no connection to the working process, is left in a "storage room" and won't be brought into the office.

With the implementation of the desk-Sharing concept for the new headquarters office areas, Accenture managed to reduce the working area per employee from 16 m<sup>2</sup> to 7 m<sup>2</sup>.<sup>89</sup>

### 2.3.2.1.5 Desk-Sharing and Technology – IBM

The case of the Accenture non-territorial office concept was an example for the knowledge driven change in a company's office concept, the next case is an example for the technology driven evolution, which actually happened a step before and can be also seen, especially in its appearance as IT-development, as a reason for the knowledge-oriented transformation of the global market.<sup>90</sup>

Large IT companies are among the first to use non-territorial office concepts and definitely can be seen as main inspirers for their appearance.

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<sup>89</sup> See Obermeier 2000

<sup>90</sup> See the same

Sun Microsystems and IBM for example developed and implemented desk-sharing office concepts for their offices for more than 15 years; furthermore, the desk-sharing office concept is a part of the corporate identity since then.

In Germany in 2002 the Big Blue engaged more than 6000 employees. The workplaces number was although about 30% less than the employees' number. With shared desk were provided not only the consultants, but much more employees from the service and distribution sectors – all employees, whose work is characterized by frequent absence from office, frequently changing activities and teams.

This "work-nomads" have their daily work schedule as follows:<sup>91</sup>

- entering the office with the documentation for the actual project, the laptop and the roll-container
- proceeding to the desk assigned from the software and establishing the workplace for the day
- for all office by-activities and for storage and access of important documentation there is a technical and archive core established, where the office equipment can be used from everyone sitting in the office on this particular day and where the closets for archiving of the important project documentation could be placed
- at the end of the workday, the employee vacate the workplace, taking away everything, he/she needed for the work, including family pictures and other thing related to the private life
- before leaving the office, booking a workplace through the web-based software system, in the office at the location, where the employee is going to be on the next day

A non-territorial work organisation is only then possible, when it is supported by two important factors in two directions: technical innovation and corporate culture evolution.

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<sup>91</sup> See Obermeier 2000

To enable the desk-sharing work, the workplaces in the IBM offices are equipped with communication utilities from last generation, which enable the contact and communication between team members or employees and headquarter, without any difference where on the world are they standing at the moment.<sup>92</sup>

- The fixed time recording is no longer in use – it is only the outcome what counts.
- The employee can decide, where and when they work – at home, with the customer or in the office
- In the office they can choose between working with the team in a team office or alone; in a think cell or in the meeting room
- The equipment can be constructively fitted to the needs of the user (high of chairs and desks can be adjusted); Special attention is dedicated to the noise protection and absorption
- There is a community area established, to enhance communication between the employees present in the office

The last point mentioned – communication – is something, to which special attention is dedicated. In the IBM company concept, it has the same weight as costs saving. And it is believed, that desk-sharing has a strongly positive influence on communication within the office – sitting every day next to another colleague helps to get to know a greater part of the whole company's team. These are the explicit conclusions of a questionnaire among the IBM employees concluded from the Fraunhofer Institute for Work Economy and Organisation (Institut für Arbeitswirtschaft und Organisation – IAO) –communication get positively influenced by the non-territorial office concepts. As especially positive is rated the fact that managers sit and work in the same areas, where the ordinary employee do (on the example of the office in Stuttgart).<sup>93</sup>

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<sup>92</sup> See Obermeier 2000

<sup>93</sup> See the same

### 2.3.2.1.6 Desk-Sharing – Experience

How does employee really sense the work within a desk-sharing office concept and which are the main problems to be considered when taking the decision for a transformation into this office concept? Here follow some statements from the literature and from interviews conducted with people, working in a desk-sharing office.

Oliver Vellage, the project leader of the Accenture “Campus Kronberg” office concept answers the question if there were some collisions within the personnel when management announced the decision for a transition to a new, non-territorial office concept.

“They (the consulter) spent anyway 4 from 5 days outside of the house. With the empty desk then you not only have a waste atmosphere, but there also appear questions about the economic efficiency....We wanted to save about ¼ of the operating and lease costs by introducing the desk-sharing concept. And that it really works is proved by the results we achieved in the many branches where we already have this concept”

***Oliver Vellage, project leader of the Accenture “Campus Kronberg”***

“To avoid eventual uncomfortableness by the introduction of the new office concept, the company should first prepare for some “natural backlash”. Therefore the approach and the advantages of the concept should be communicated and explained sensitively and in detail; the employees should be evolved as much as possible in the definition of the concept. But much more important is the support for the concept from the management, who has to learn to live whit the thought, that the large single cellular offices are soon passé.”

***Jörg Kelter, Senior Scientist by IAO in Stuttgart(Quelle:FAZ-net vom 26.07.2002)***

About the organisation of the office where they work tell some employees of large consulting firms:

“It is a great feeling to sense the freedom you have. Wherever I am in a McKinsey office all over the world, I just sit somewhere, log my computer into the system, the system recognizes it

and my cellular phone and diverts automatically all calls and I can work exactly as if I am in my base in Vienna."

*Dr.Alexander Schwarz, MacKinsey&Company Vienna Office*

"As you can see, we have a very nice but very small office. It is organised on a desk-sharing principle - no one has his/her own desk, because most of the consultants come "home" first on Friday to take part in the meeting at the end of the week. But as you can see, at the moment (Friday, 11:00 a.m.) we still have only seven (persons) in the office, the rest is still with customers or on the way to Vienna"

*Dr.Martin Schäderle, AT Kearney, Vienna Office*

"We have a very flexible office concept – it is a combination of non-territorial workplaces and fixed workplaces. The non-territorial workplaces are used by the consultants – they work like in the most consulting companies after the 5-4-3- principle: 5 days work, 4 days with the customer, 3 nights in a hotel, where the customer's company is located - who appear to stay at the office, the fixed workplaces are used only by employees whose activities are from supporting character for the company (accounting, recruiting etc.)"

### **2.3.3 Home-office**

While desk-sharing "describes" the work organisation within the office, home office, mobile office and other mobile-work forms represent the work-organisation, when the employee is not in the base, but on his/her way, with customers, or even at home.

The Home office is therefore an office concept with higher level of mobility and flexibility, but also with a higher demand on high communication technologies without which its implementation is not possible.



Using communication technologies, information can be accessed from everywhere. New work-concepts make the boundaries within work place and time fluent: the workplace can stretch over a building, country, continent, because it is not the presence the main point any more, but the communication.<sup>94</sup>

On the other hand, home office could be the only possibility to work efficiently and to take part on the life within a company for people with disabilities, therefore is the Home Office, even though still existing as a theoretical concept, which is not paid extraordinary attention in term of design and planning, an office concept, the implementation and development of which should be more supported and on the planning of which companies should take more significant part.

By the development of work-concepts now a day, with the increasing flexibility, mobility, technology implementation and communication, tele-working performed at home, switching between working at home and working in the office will not be something unusual any more. The workplace location can be chosen in dependence on personal life-situation, on demand for flexible time-organisation, on communication demand.

The Home office is a professionally designed workplace at home, giving the possibility for efficient work on 3 - 4 days a week.<sup>95</sup>

One of the problems, which could occur by taking the decision for this office-form, is the possibility to get isolated, but with the introduction of new communication and information technologies and their sufficient implementation, this represents a workplace, equal in term of communication and participance, for a disabled employee.

Implementation of communication and information technologies changed radically this office concept, developing it from „compromise“-like office to an office, which does not differ significantly from the workplace in the office building in term of efficiency and performance. To achieve the same or at least similar efficiency supporting work conditions, there are some basic requirements to be held

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<sup>94</sup> See Schneider, 2007

<sup>95</sup> See the same

### 2.3.3.1 Own Workroom

The requirement for an own workroom has to ensure the possibility to work without being disturbed; furthermore, in a separate room it is easier to fulfil the requirements on security and inaccessibility for data and documentation

### 2.3.3.2 Inaccessibility of the Workroom

The workroom and therefore the workplace should be inaccessible for newcomer and family members (especially children). Thus, the workplace could be suitable for creative and productive activities, too.

### 2.3.3.3 The Suitable Equipment

The Home Office should dispose of the same equipment as the available and standardized equipment of the workplace in the office building of the company; undisturbed communication on basis of intranet, web etc between the Home office and the central office should be guaranteed for the whole period of use of the Home office.

### 2.3.3.4 Correct Organisation of the Workplace

Organisation considerations in term of workplace design consist not only within the office but in the same rate for the organisation of the Home office.

A legal commitment for the employer for taking the responsibility for the design of the Home office of the employee does not exist, although in many companies it is actually the case. In the praxis the employer is obliged to provide the employee with the required equipment, furniture and techniques to guarantee equal work conditions at both – the office and the Home Office workplaces.

Tele-working could be of a great advantage for a company. The enclosure of Home-Office workplaces to the company's working concept for example contributes to cost reduction – in both - lease cost and travelling expenses – directions. Although the exact rate of cost decreasing when introducing a Home Office Concepts can not be estimated yet, since the concept is more or less a theoretical, not widely spread and still without significant contribution to the segments of the workplace concepts within a company and therefore the necessary experience, statistics and measures to estimate the profit of introducing do not exists. Thus, a simple comparison and evaluation of the cost savings between the workplace in the office and the Home office considering the difference between lease cost for square meter in an office building and the same or larger working area in a house or flat, and the equipment required, make a significant cost advantage for the implementation of home offices when possible. But when taking the decision to establish a particular number of Home Offices for some of the employees

of the company, the employer also takes the responsibility to organise the workplace corresponding to occupation health and safety norms, as well to observe if they are kept all the time, when the home office is used and to take the required measures to improve the working conditions if the norms have not been kept.

In Germany the safety and health requirements for work in a Home Office, but also for the rest of the mobile office concepts, are summarised in an agreement between the EU Employer Deputy and the Union, signed on 16.07.2002. The agreement considers the safety and health requirements in mobile office concepts as coequal to these at a fixed workplace; therefore all norms and general conditions, which count for the fixed workplace, can be transferred to the mobile office.<sup>96</sup>

### 2.4 Call Centre

The degree of implementation of information and communication technologies by the Call Centre office concept is an important factor for its success and fulfilling its task – the highly qualified local and international customer service. Quality and extent of technology implemented is often even the primary criteria for evaluation of the Call Centre efficiency.

Thus, implementation of technologies itself can not be a crucial factor for the success of this office concept, so that all of its advantages get fully exhausted. First when workplace and working environment are designed according to the company's organisation, philosophy and needs, under the support of technology implementation, can be relied on high efficient call – centre workplace. In this case call centre can offer significant cost reduction possibilities. Some of the advantages of this office concept are:<sup>97</sup>

- accelerate and easy up working processes and improve work quality and quantity
- support communication and concentration at the workplace, as a result tiredness and possible errors sources decrease
- reduce physical and psychical load and avoid unnecessary long lasting work interruption through illness etc.

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<sup>96</sup> See Schneider, 2007

<sup>97</sup> See the same

- offer optimal working conditions for highly qualified staff; in general reduce personnel fluctuation and make the recruiting easier
- optimize the use of expensive office space and area and despite strict guidelines, contribute to the cost reduction lease costs

The Call centre as an office concept was developed to meet the requirements of highly educated and effective personnel in its way for achieving high targets and performance. Thus, the call centre is seen as an office concept, which is considerably contributing to market competitiveness.

Therefore, all the factors, which are crucial for the effectiveness of this office concept, have to be clearly defined for each company and be balanced within the office concept. Except on high-performance technologies there is an amount of requirements, which workplace and work - space in the office must fulfil – they have to be a tool, but also living space for an employee; they must support people and actually be the basic condition for effective work and performance quality.

### **The Call Centre as a strategic, service and interactions centre**

The expectation about the future of this office concept is that call centre will keep gain on importance.

The call centre has proved itself as one of the most successful marketing and sales tool for optimizing the customer acquisition and relationship – with no difference, if it is an in house or an outsourcing solution, if virtual or real. According to experts' opinions, the call centre is an office concept which, if not even the office concept of the future, will be one of the most important concepts with a key role in the following decades.

Regarding to these expectations, there is an attempt to put new aims while designing call centres, which aims are to spread the tasks of this office concept beyond the simple customer support by phone. Therefore, all available information and communication technologies get involved to enable the fulfilling of complex working processes. This cause the call centre to evaluate from a peripheral marketing support tool to a central strategic, service and interactions centre.

Call centre is one of the office concepts, corresponding very well to the requirements of the companies of the knowledge society, where high qualified employees are able to consult customers and respond to their personal needs, which is an important factor for the success of corporate measures in many companies.<sup>98</sup>

### 2.5 Tele-working

Tele-work and office innovation are terms, complementing each other and often meaning the same. Tele - working is the definition for a working organisation, within that employees switch between an office-located workplace and a mobile working form (Home Office, Mobile Office), working flexible and independent from time and space. Moreover tele-work enables a better balance between work and personal life.<sup>99</sup>

Working differently realises a win-win situation for both the company and the employee. Flexible forms of work have a positive influence on the mobility problem; result in less stress and promote teamwork and the exchange of knowledge.

Tele-working is each working form, based on information and communication technologies, which is performed partly or exclusively outside of the workplace in the central office base. The mobile "workplace's" location is defined by the current location of the employee and is connected to the mother office by electronic communication tools.

Tele-working has various appearances.

The workplace of tele-working could be at home (Home Office) or on locations, connected to the trips to customers as flights, airports, hotels (Mobile Office). This is also the workplace with the whole necessary equipment, when employees are deployed by the customer over a long period (On-Site-Teleworking), but also in tele-workplaces in Tele-centres (Satellite-Offices etc).<sup>100</sup>

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<sup>98</sup> See Schneider, 2007

<sup>98</sup> See the same

<sup>100</sup> See the same

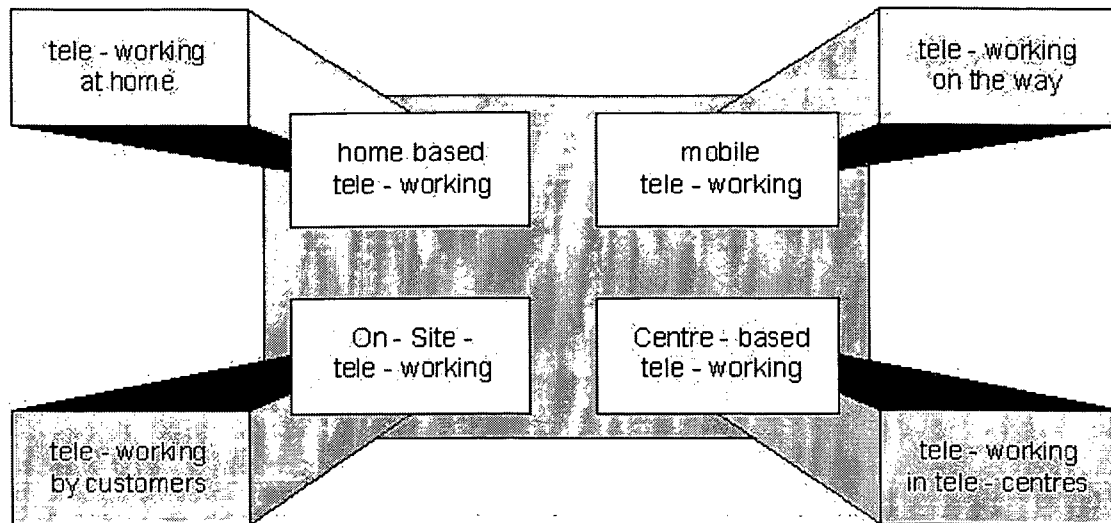


Fig. 17:Tele-Working<sup>101</sup>

Tele-working is considered not to be optimal in the practise, but as especially effective, when work demands switching between different divisions and areas – this means, that employees spend 2-4 days working home, with customers or in another subsidiary of the company and in the rest of the days - at their fixed workplace in the base.

As in the chapter Home Office mentioned, when an employee performs a particular amount of tasks working at home, the workplace established has to be considered as a swapped facility of the employer company and correspond to the specified working conditions and norms of the base office.

Tele-working appears often in combination with desk-sharing, whereas desk-sharing is the characterization of the working concept whiting the office, and tele-working – of the working organisation outside of the office. In the most cases, tele-working is used by companies acting in industries and sectors, requiring permanent occupation of part of the staff outside of the office – for example consulting companies.

### 2.5.1 Advantages of Tele-Working

Tele-Working can influence very positively not only the sides within a company organisation; from an intensive implementation and introduction of new office concepts, combined with desk-sharing and tele-working benefits also the society.<sup>102</sup>

<sup>101</sup> Schneider, 2007

<sup>102</sup> See Leenheer 2005

- **Mobility:** Greater share of flexible offices would have a positive influence on home-to-work traffic; reduce thereby traffic jams and accident frequency. The (traffic-related) stress and associated health costs would also reduce.
- **Social Welfare:** New office concepts are the optimal solution for disabled employees who would otherwise have to give up their work on account of their physical disability, but also for parents, who wants to look after their children, but not to give up working professionally, would have more time to spend with the family on account of the time spent otherwise in home-to-work traffic. Thereby there would be a completely different work-life balance for employees. This is how new office forms contribute to social integration and emancipation.
- **Satisfaction and productivity:** Considering the connection between satisfaction and productivity, it can be easily estimated in which way flexible office concepts contribute to productivity: Employees, who have the possibility to divide their time free and have more time for family etc. work calmly and more relaxed. Therefore it can be expected that they are more productive and efficient. Furthermore, having the possibility to choose a workplace, suiting best one's needs and requirements for the daily job, could be a pre-condition for more pleasant and productive climate in the office.
- **Teamwork and Team Spirit:** Although there are still many companies, trying to organise their performance according isolated process and task working-concept, inherited from the industrial mass-product working philosophy, one is sure: companies on their way to innovation, which try to stay competitive on the global market, can not be successful, if they do not turn to team work. Therefore, a change of the office concept is unavoidable, because traditional office concepts, where each employee works as an element of a system in his/her closed space, fulfilling strict defined tasks, without any knowledge of the rest of the process, can not meet team-work requirements. The new office concepts are designed to enable communication and knowledge exchange. Every employee is well informed about each other's activity and the way of exchanging experience is simplified to just discussing problems at the very moment they occur. Opposite support and inspiration and experience exchange is required, as well a concept to encourage them.
- **Efficient office space use:** One of the crucial, driving arguments for new office concepts can be explained very shortly – new office concepts allow office areas savings and therefore lease costs savings.<sup>103</sup>

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<sup>103</sup> See Leenheer 2005

### 2.5.2 Best Examples

#### 2.5.2.1 The Flemish Government in Brussels

The Flemish government is one of the few, especially at a state level, organisations, demonstrating innovation approach and a pioneer spirit, with a new, different approach to work and success. As a main task for the next decades the government tries to adapt to the need of the dynamic, demanding society, to change its work approach into a flexible, customer-oriented way and to achieve these aims decided to replace old, traditional structures by new, more efficient structures. Furthermore, the government is interested in new work approach and work and structures and concepts and is initiating and cooperating in studies, researching this topics and motivating the transformation and introduction of new work organisations and office concepts.

The visible expression of this new strategy is the new office concepts of the office the government moved to, where the old strict surface norms per office in square meters per person and where each employee had a personal office are not followed any more. The traditional hierarchical work structure in the organisation was completely disposed and replaced by a result-driven and aspiring approach, making the organisation much more flexible. The requirements on the new office in the Boudewijn building in Brussels were to correspond to the work characteristics of the new working approach.

The concept is based on tele-working and desk-sharing – working for a state organisation often means spending much more time on satellite workplaces, on the way to somewhere and working in all possible conditions on all possible locations, than working at the own personally assigned workplace in an institutional building. In the new office concept employees do not have a personal workplace: they dispose only of an internal mobile phone, laptop, a rolling trunk and a cabinet for personal belongings and can access all the information they need in common archives and on the company's database. They can choose a workplace that suits best the working requirements of the concrete tasks they have – an open workplace or a team room, when working in and with the team and thinking cells, when working alone and concentrated<sup>104</sup>

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<sup>104</sup> See Leenheer 2005



### „From a static bureaucracy to a flexible organisation “

The realisation of the project consisted in a transformation of the third floor of the Boudewijn building in Brussel and with a new, flexible office concept to enlarge the capacity of the office from 85 workplaces for 85 employees (in the traditional office concept) to 130 workplaces for 160 – 180 employees. To help employees make the transition from the traditional to the flexible way of work a knowledge centre was established. Its tasks were to support employees in changing their way of work, transforming working processes and altering paper archives into digital archives, electronic workflows and databases.<sup>105</sup>

The results achieved after implementing tele-working and flexible office organisation encouraged the government to implement this concept in all new housing projects and future offices. For example:

- by the end of march 2004, 225 employees of the Financial Management, Budgeting and Accounting departments moved to a new office, designed for tele-working and desk-sharing according to the concept in the initial office
- there are plans to transform in this way further two floors in the Boudewijn building and accommodate there new administrative units
- establishment of Flemish Houses (Flemish Administration Centres) in every province with the new office concept. This buildings will be provided with satellite-workplaces for visiting colleagues

### Results

The experience from the projects shows that it is not possible to copy-and-paste an office concept from existing building to a new one, because even if the local centres have the same purpose, the local requirements and conditions are different and therefore, the needs and requirements have to be screened and considered when designing the office - on some locations more concentrated work is performed, or specific tasks, requiring specific equipment.<sup>106</sup>

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<sup>105</sup> See Leenheer 2005

<sup>106</sup> See the same

As crucial factors for the success of such a transition were estimated:

- Status of ICT
- Commitment of the management
- Process re-engineering
- HRM (autonomy, coaching, etc)
- Budget and Time (personnel) to accomplish the changes
- Legislative possibilities towards working electronically

The financial analysis of the implementation of the new office show that the return of investment will take between 2 and 3 years. However, the main benefit for the participants and the user of the project is the new culture, enabled by the transition to desk-sharing. Team-working and knowledge share profits because of the new way of communication and working-together.<sup>107</sup>

### 2.5.2.2 Cap Gemini Vienna

The Vienna Office of Capgemini Consulting is an example for flexible office concept, which is functioning effectively in fact.

The office has different areas according to the needs and the characteristics of the job, performed at a particular workplace. There are fixed workplaces for the employees of the supporting departments, the rest of the workplaces are organised according to a desk-sharing principle, whereas there is the possibility to choose between a desk in a 2-3 person berth or a desk in an open team work organised area. The berths as well as the meeting room are separated by glass walls from the rest of the office areas to provide a quieter environment, which is their only difference in term of work conditions and equipment in comparison to the rest of the workplaces.

Except of the workplaces for consultants, there is a station of 2-3 workplaces for employees, who work temporally in the office (IT and communications supporting personnel). These workplaces are similar organised and equipped as the rest of the workplaces in the office and could be used as a buffer (if the employees, they are assigned to, do not use them and need them in the moment) as a normal consultant workplace.

<sup>107</sup> See Leenheer 2005

According to the statements of the employees, the office concept is effective and optimal organized for the specifications of their work and for all scenarios, which could occur on a regular workday. Although there are workplaces only for ca. 2/3 of the employees, the full and equal technical equipment of all workplaces provides an additional reserve for the case.

### 2.5.3 Critics and Problem

Implementation of new office concepts is not always welcomed and supported. One of the critics of tele-working is Prof. Horst W. Opaschowski, a work types and processes researcher from the Hamburg University. He assumes that even if companies change their office concept from a traditional stationer to flexible innovative office concept, they could save lease costs, but on the other additional costs for communication technologies arise and at the end there is no real cost optimization and advantage. However, examples of the praxis disprove his assumptions.

Opaschowski also disputes the advantages of Home and Tele-working in term of a better work-life relation. Much more he believes that switching between working and office concepts can be a dual strain for employees, especially for women. "Tele-working provides additional stress for employees – they are always available, have always to deliver prompt and the companies expect performance round-the-clock. Tele-workers often have to be protected against themselves." <sup>108</sup>

Praxis proves that if the most important critical points are considered when establishing a mobile office; it is much more likely to avoid problems and accruing of disadvantages.

While researching established, functioning new office concepts and interviewing employees, working in offices, designed after some modern, flexible office concept, a factor in the concept occurred as crucial; The introduction of a flexible office concept makes not much sense, if the implementation of the new office concept is not conducted by the implementation of communication and information technologies and by a system for booking of a workplace in the office.

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<sup>108</sup> See Schneider 2007

One of the biggest difficulties on the way of this paper work is the fact, that new office concepts are still widely spread in the English spoken part of Europe and North America, but not in the rest of the European countries, where they are still more or less theoretical concepts in the beginning of their recognition. On one hand, it makes an empirical research on the spot very difficult, but on the other, the available office concepts are in the first phases of their life cycle and give the opportunity to observe the problems linked to their implementation and use, with the transition from a traditional to innovative office concept, as well the potentials to be recognised.

Introduction of flexible, non-territorial office concepts is in many cases much more a question of prestige than a question of necessity or an attempt for cost reduction and optimization. Some companies try to demonstrate innovative spirit without really to benefit from the potentials and advantages of the implemented office concept.

This applies partly to the offices visited in Vienna, where desk-sharing and mobile-office have developed to standard office concepts in the consulting companies, but anyway, do not operate effectively in most of the cases.

As main characteristics for an effective operating non-territorial office are assumed:

- significant workplace number reduction
- significant area saving
- more than 30 % lease costs saving through the area savings

### **AT Kearney Vienna**

The 37 employees of AT Kearney – Vienna dispose of 39 workplaces, 17 of which are fix assigned. There is no system organised for preliminary booking of workplaces. Workplaces are situated within the office in a way, so that employees do not accept their position as equal: this means that some workplaces are strongly favoured, while other are sensed as more uncomfortable and unpleasant.

The workplaces themselves are actually common single or double cellular offices and the assignment of the workplaces happens not only according to the type of work, but has also hierarchical meaning: fixed workplaces are assigned to the office assistants, the personnel of the financial department and to the partners and principals of the firm. They are also the only employees of the company allowed to keep personal items on their desks. Documentation and personal stuff is kept in lockers.

Working in this office, manager and employees manage to discover weaknesses and potentials of their office concept.

There are projects for optimisation of the office, which could include a leasing of part of the office areas, reducing of the workplaces and introduction of a coordination system for workplaces' allocation.

### 2.6 Business – Centre

The term of Business Centre has two meanings: as a stand-alone office concept and as a functional part of the Business-Club office concepts, which observed below.

Business – Centres in their function as stand alone offices are temporary offices with services functions, which are fully equipped and rent for a limited period of time. Thereby the leaser company and its employees dispose of the full service and equipment of the Business – Centre.

The use of a Business-Centre – for a single project, a market research on the spot etc – is already something almost self-evidently in Great Britain and USA. To the companies accessing the opportunities of Business – Centres count most banks, project groups, lawyer's offices, consulting firms (predominantly firms doing technical and IT-consulting) <sup>109</sup>

#### 2.6.1 The Advantages

- companies can find without efforts and costs offices ready for occupation, fully equipped and furnished, with all the necessary technical equipment included
- the leasers dispose of meeting rooms, video conference rooms and an amount of additional services. The Business – Centre personnel can fulfil many supporting activities - organises catering, books hotel rooms and flight tickets for the employees of the leaser company or acts as a permanently reachable call centre
- customers can work in Business-Centres all over the world and thereby enjoy the same working conditions and technical equipment as in their base office
- According to statements of Business-Centre operators, the average lease period is about 9 months, sometimes - a year or even longer<sup>110</sup>.

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<sup>109</sup> See Siegle / Schultz 2006

<sup>110</sup> See the same

### 2.6.2 IBM and Regus

IBM is one of the pioneers in the implementation and transition from working in traditional to working in flexible, non-territorial offices. Nowadays, about 40 % of the IBM employees work on a mobile-principle.<sup>111</sup>

IBM recognised at a very early stage the role of and potential of flexible office concepts for the conquest of new markets. For their local office in Glasgow, Scotland, they chose a Regus Business Centre, because a long term use of office areas was not plan able. Management and employees, but also consulter and dealer, evaluated the rented Regus Business Centre as especially effective. The company decided to stay in the rented office and at the moment the Business Centre is used partly by full time employees and partly – by the IBM “nomads”.

Regus was established in 1989 and is the biggest Business-Centre operator all over the world. The initial concept of Regus was to offer fully furnished and equipped offices, which evaluated to a wide services-palette, the company offers at the moment. To the biggest customers of Regus count besides IBM Fujitsu Siemens, Starbucks, Unilever and Nokia, dispose of more than 750 locations in 60 countries and 350 cities.

The success of the cooperation model with Regus forced the management of IBM to consider and decide for the option, to use the advantages of Business-Centres as a general solution for the IBM Small and Medium-sized Business (SBM).

Trainings and customer meetings also take place in Regus Business-Centres – in 12 countries – because they are more comfortable to be reached from the customers as the local IBM Offices. Because the Regus Offices can be booked in a short-term, the IBM “nomads” can react spontaneously to customer wishes and requirements.

All employees of IBM dispose of a Regus network Access Card with which they have unrestricted access to all 750 Regus Business Centres in all 60 countries. Thus, all IBM employees have an access to a professionally equipped workplace in each Regus Business Centre in many important cities, where they just need to switch on their laptop and start to work.<sup>112</sup>

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<sup>111</sup> See Siegle / Schultz 2006

<sup>112</sup> See the same

## 2.7 Business-Club

Business-Club is a non-territorial office concept, offering thematically differentiated areas within the office in a system, which is flexible to be adapted to changing requirements and needs. Employees do not dispose of a personal workplace but can choose - according to the work and daily tasks - their daily workplace: a think berth, a bar, business-lounge, meeting-room, group-centres, or a room with representative functions.<sup>113</sup>

A Business-Club consists of three main areas:<sup>114</sup>

### 2.7.1 Business-Centre

The Business-Centre is the central contact and meeting point. In the Business-Centre is the secretariat and the used by all equipment, the wardrobes and lockers, post office boxes, office supplies store, the document centre, meeting rooms and the espresso bar and a library with printed and digitally stored information.

### 2.7.2 Team-Centre

In the Team-Centre are concentrated all workplaces- individual workrooms and a variety of rooms and zones for all kind of work: single-workplaces, group-workplaces, stand-workplaces, meeting-zones and project-rooms.

### 2.7.3 Lounge

The Lounge is the informal meeting and workplace in the Business-Club. Sofas, bar-tables, standing tables and terraces are the present elements interfering a "life-style" atmosphere and ambiance, whose task is the targeted outer contrast to traditional, functionally configured workplaces .

### 2.7.4 Workplaces in the Business-Club

The Business-Club office concept offers following arts of workplaces:<sup>115</sup>

- **Single Workplace:**

Single Workplaces are cellular offices, divided by a glass door from the rest of the office, with an area of about 10.5 m<sup>2</sup>. Employees can back there out, if they need quiet environment for concentrated work. In the room can be placed a round table for discussions of small groups of 2-3 persons.

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<sup>113</sup> See Bals 1999

<sup>114</sup> See Schneider 2007

<sup>115</sup> See Bals 1999

Business-Club are provided with two types of project rooms: closed project rooms for meetings of up to 3 employees and open project rooms, where small groups of 2-4 employees can work.

- **Meeting Rooms:**

Meeting Rooms are fully technically equipped and have the capacity for 4-8 people.

- **Stand-Workplaces:**

Additionally to the normal workplaces, there are stations with standing-workplaces with phone and internet access, which can be occupied for short period of time.

### 2.7.5 The dvg IT-Services, Hannover <sup>116</sup>

In the year 1995 „dvg – Datenverarbeitungs-gesellschaft und IT-Dienstleister“ – a daughter company of the Sparkasse – acquired a 232.000 m<sup>2</sup> parcel in closed neighbourhood to the EXPO-area in Hannover. A project for the estate was developed – to build up a services-centre for all the six services companies, which were spread on different locations and to move them to Hannover. The task of the in 1996 announced architect-competition was the planning and building of a combination office with about 1050 workplaces.

But later, when the building was already in an advanced phase, the company decided to change the office concept from a combination-office into a business-club. Despite the advanced building stage it was still possible to change the concept and to increase the buildings' depths from 13.50 m to 14.50 without to cause extreme additional costs.

An overview of the concepts, which were possible for the location includes a combination-office with about 1050 workplaces, a business-centre for about 1400 employees, a business club with desk-sharing for about 1700 employees and a business-club for desk-sharing and teleworking for 2000 employees. The first comparison of the alternatives showed, that each workplace, which is not reserved (and therefore the office area which is not occupied), save more than 13.000 €/year on operating costs.

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<sup>116</sup> See Bals 1999



The actual building is designed for 1850 employees and about 1350 workplaces. It is divided in ca. 30 parts for 40-70 employees. The offices are about 10.5 m<sup>2</sup> large, the offices of the top-managers – ca. less than 20 m<sup>2</sup>.

The concept is based on paperless working – every employee dispose of a locker, where only 16 folders can be placed.

Since mid March 2002 in the company was introduced an additional mobile-working system: employees could work on demand at their home. Through data-lines and dvg-computers they can log in the dvg system and database and dispose of all information they need for the daily tasks. Therefore the daily drive in the office lost its role as a factor, influencing work and performance, and employees can organise their time schedule flexible, according to their needs – working times got floating because of introduction of mobile-working.

### 2.7.6 Business-Club Quotations

**Klaus-Peter Kubiak, dvg-director:** „Between 25 and 50 percent of the workplaces stay empty nowadays. Employees are on holidays, by customers, on business-trips or -because of some other reason – not on the same location as the office. With the Business-Club Concept we get by with fewer workplaces than employees we have and thus, we save us expensive internal relocations, which were necessary till now due to the prevalent project-work-type. 70 percent of the employees in dvg work on projects and because of this have partly two workplaces.”

**Claudia Holzer, Project Leader - Business Club:** "The working environment in a Business-Club hardly can be compared to this in conventional office concepts. This is something, every employee would tell you. To make the concept work, there are commitments necessary, which we all work out together.”

## 2.8 Data Centre

A Data – Centre provides the customer with an office with full technical equipment, servers, hardware and infrastructure, as well technical know-how to perform an internet based business. Essential is the possibility for a build-up, so that companies get support in case of increasing demand and workload and manage in short term to extend band width and service capacity. Besides, more and more Data-Centres operators offer additional services as installation of software and hardware as well as providing communication systems and technical support for them. Data-Centres can also engage complete project management solutions.

Furthermore, an amount of small areas in data-centres are rent to small, fast growing companies in the IT, media and communication industries, which need large storage capacity and band width.

Germany as the largest European market began with the introduction of Data-Centres first in the mid 90s, thus most of the about 50 now existing Data-Centres are established and operated by foreign owner companies after 1998.

The most buildings used to accommodate a Data-Centre have a flexible floor plan and greater room heights. False floors are preferred for cables passing, building with as few columns as possible, which can carry the weight of cables, technical equipment and air conditioning systems.

A very important factor for the success of a Data-Centre are the installations securing of an uninterrupted electricity supply, securing of the sensitive hardware, stabile air condition system, as well as fire and water protection systems, video control, alarms systems and entry control.<sup>117</sup>

### 2.9 Satellite Office

The permanent presence of the employees in the office becomes less and less important and gets replaced by working and office concepts as Tele-Working, Desk-Sharing and Home Office.

Some of these mobile-office concepts are not always implementable and an alternative for them could be the Satellite-Office concept.

A Satellite-Office is a mobile, non-territorial office concept, combining some of the advantages of Home-Office, but also of working at an office based workplace. Satellite-Offices – for example the large bank Back-Offices – are situated at the periphery of towns, near to the residential areas, where a buildings and properties would cost significantly less. In a Satellite-Office could be situated unities, which are not assigned to and do not require a daily communication with the head of the company. The inalienable daily communication is performed with the support of information and communication technologies, the essential personal contacts are performed in weekly intervals.<sup>117</sup>

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<sup>118</sup> See Schneider 2007

<sup>119</sup> See the same

The Satellite-Offices dispose of only few workplaces, because their greatest advantage is the closeness to residential area of the employees. The necessary office supporting-activities are performed by independent service providers (Copy- Shops etc).

### 2.10 Project Workshops

The dynamics of new markets and work rhythms force companies to adapt themselves to a work-organisation with flexible project and workgroups, standing in constant interaction with each other. The office concept with stress on Project–Team-Work is termed as a Project Workshop.<sup>120</sup>

The Project-Workshop does not represent a new office form, but a new, flexible space-use concept, which can be fast adapted to dynamically changing work conditions and processes. It is a building concept with rooms, which are flexible and adaptable in their size, furniture and equipment to the dynamic of the organisation and changes activated. Thus, a pre-condition for the success of the concept is the possibility to fulfil the necessary adaptations spontaneous and cost-effective – without time-consuming planning and installation efforts. This is a requirement, which traditional office concepts can not meet.

Therefore, Project Workshops demand office areas of extreme adaptability. Within the existing layout must be possible to build rooms for concentrated single-work, as well as communication rooms for team work and discussions, briefings or brainstorming.

The areas must be wide and deep enough, so that open, free furnish able surfaces for teams and workgroups arise. The technical accoutrement must enable necessary screening, isolation and partition of rooms. The room-building systems can be both ceiling-high assembling systems or removable high or half-high partition and movable walls.<sup>121</sup>

For furnishing purposes should be chosen roll able elements, one-person desks, container, communication unities, file carts and small cabinets, which can be used as stand-tables.<sup>122</sup>

### 2.11 Virtual Teams

New information and communication technologies enable Tele-cooperation and synchronistic work on the same product from different places all over the world.

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<sup>120</sup> See Hungenberg 2004

<sup>121</sup> See Kraft/ Fels 2006, p. 45-48

<sup>122</sup> See Hungenberg 2004

The new form of team working is called Virtual Team and makes possible the collaboration beyond distance, time and organisation.

A definition from Konrad and Hertel from the year 2002 describes the Virtual Office as follows:

“Virtual Teams are flexible groups of on different locations located and from the location independent employees of a company, which work together result-orientated on the base of their job assignment, being linked to each other through an information-technical network. The consistence happens first as a result from the core competitions of the employees”<sup>123</sup>

Working in a virtual team is nothing new but adapting the communication within a team to the technical development of the last decades and make the best possible use of it. Thus, communication is the crucial factor for the existing of a virtual team, and needs to be taken into account according to its importance.

Team-Working is experiencing a great boost in the last decades. The shorter innovation cycles, individualisation of products and services, increasing orientation towards customer support and time as a crucial factor with an increasing importance pressed companies to decentralise responsibilities. Team-Work was seen as an opportunity for new work aspects, for decentralisation of the management tasks and humanisation of the work-life.

The characteristics of a Virtual Teams are as follows:<sup>124</sup>

- more participants as in a traditional Project-Team
- interdependent tasks structure
- results-orientated teamwork
- decentralised and delocalised work locations
- casual face-to-face communication
- communication based predominantly on information and communication technologies

Virtual Teams have their own organisation, which is completely different from the organisation of a traditional team. In virtual teams organisational superstructures get relieved, and structures and processes kept simple and clear and lightly adaptable.

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<sup>123</sup> Konradt/Hertel 2002

<sup>124</sup> See Konradt 2002

The characteristics of the virtual teamwork make behavioural team leading impossible, that is why virtual team members are required to show great self-responsibility and interest on self-leading and motivating.<sup>125</sup>

Nevertheless, virtual teams should not be left to develop fully free, without any form of control, because the technical equipment itself does not cause the success. It is much more the simplification of the structures and the necessity for face-to-face communication to influence directly the flexibility and the success and to take advantage of. But because of the importance of thrust for this working-concept and the limited possibilities to meet and know team members, team-building can be crucial for the collaboration of team members and team success. So, controversial to the flexibility and simpleness of virtual teams, which count to its greatest advantages, stand greater organisational, planning and control complexity, which have to be managed to achieve an effective working virtual team.<sup>126</sup>

Following diagram represents an example for the process-cycle for establishing and managing a virtual team.

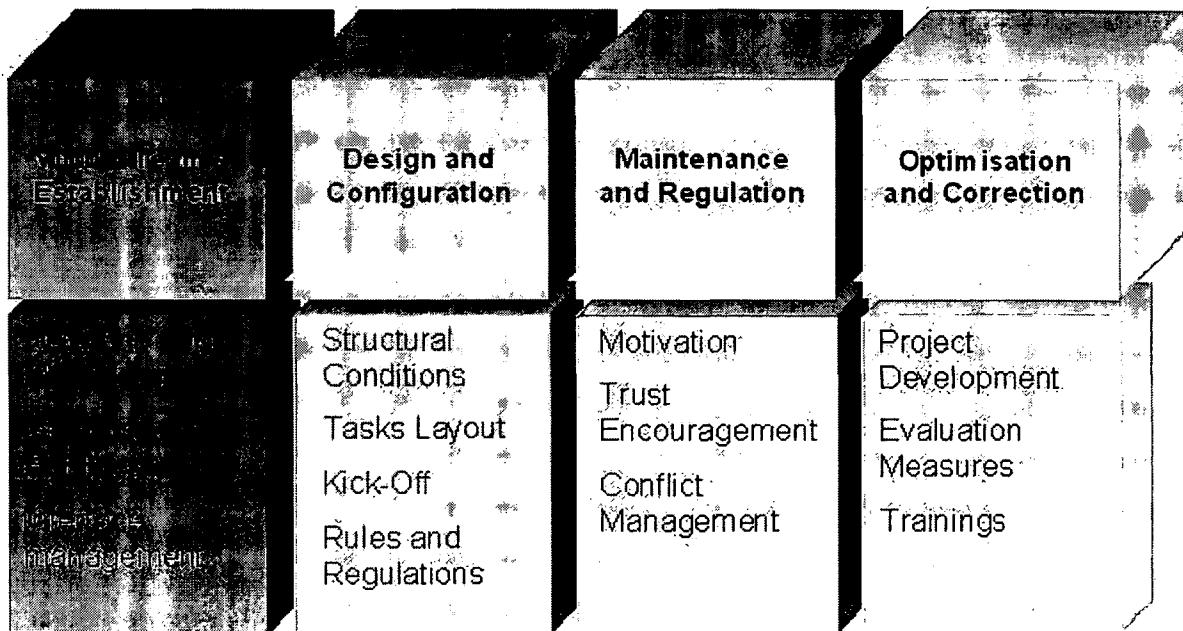


Fig. 18: Managing the Virtual Team<sup>127</sup>

<sup>125</sup> See Duarte/ Snyder 1999

<sup>126</sup> See Konradt/Hertel 2002

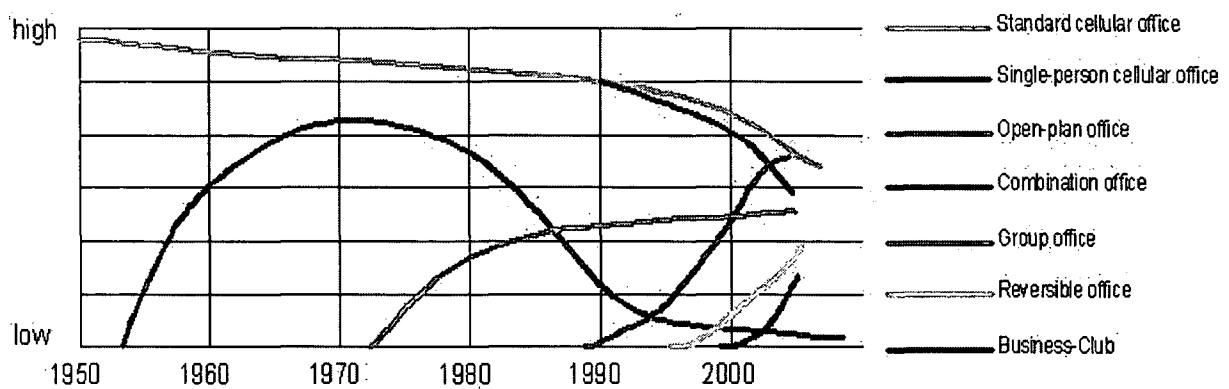
<sup>127</sup> Konradt 2002

The initial enthusiasm gradually calmed down, because some weaknesses of the full defrag of tasks and responsibilities. A reason was for example the weakened tools and ways of upper management to exercise pressure for the implementation of concepts and the breaking effect of the middle management, which was rightly afraid of competence-losses because of team-working.

### 2.12 Cycles of demand for individual office concepts – empirical study

A research ordered by Dresdner Bank Immobilien in 1999 estimated the state of the art of different office concepts shares in Germany as well as the future trends for demand of different office concepts. 198 companies were interviewed - all of them with some leading position in the property sector (property and project developers, consultants etc).<sup>128</sup>

Following diagram represents the findings of the research:



Source: Cycles of demand and perceived importance of different office concepts in new building projects,<sup>129</sup>

The research showed that cellular office still have the greatest share in new office buildings, although their importance and demand is continuously decreasing. One new office concept, which appeared and gained fast on importance in the last years of the 20<sup>th</sup> century, is the reversible office, known also as a project workshop<sup>130</sup> or Flexible Office (Quickbomer Team).<sup>131</sup>

<sup>128</sup> See Giesemann 1999

<sup>129</sup> Degi 2003, p.136

<sup>130</sup> See Schneider 2007

<sup>131</sup> See Kraft/ Fels 2006, p. 45-48

It is expected that this office concept will take the leading in the first decades of the 21<sup>st</sup> century because of the decreasing requirements for flexible space design and usage. Reversible office and Business-Club may overtake the place of combination office, because of their flexibility and adaptability and therefore potentially more effective and more beneficial in their implementation.

The study observes also the newest office concepts, which though are not displayed on the diagram, because of their minimal implementation and share in the year 1999. Anyway, some of this office concepts are predicted a leading function considering further technology and communication development and markets globalisation. To the office concepts considered in the Giesemann study count non-territorial office concepts as desk-sharing and tele-working and the most innovative – virtual office.

According to the study, traditional office concepts as open-plan offices for example will be almost replaced by the new office concepts and will keep only a minor share within office concepts demanded.<sup>132</sup>

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<sup>132</sup> See Giesemann 1999

### 3 Future trends and projects

What will the office of the future look like, how important will it be, will it exist in a form similar to the office concepts from today or work concepts as we know them will disappear completely?

With the increasing courage to innovate, to change and face the unknown, it is getting more and more impossible to predict a development in long-term. However, the questions asked above are important and an issue to research and discuss for everyone, who is affected and participant in every single industry and especially in the building industry. That is why an amount of organisations and institutes try to predict the future of the office.

One of the most prestige and famous European Organisation researching and dealing with innovation and scientific developments is the Fraunhofer Institute for Industrial Engineering and Organisation, which developed an amount of studies and project on the topic, concerning single aspects of office organisation and performance, as entire, new office concepts and working forms. The Fraunhofer Institute works in close connection with industries and companies, delivering no theoretical, but reliable empirical results and conclusions.

#### 3.1 OFFICE 21<sup>®</sup>

One of these initiatives is the OFFICE 21<sup>®</sup> project,<sup>133</sup> supported by many companies from different industries. The project started in 1999 and had four phases: in the first phase individual and global scenarios for the office of the future were developed, in the second the actual project started and was run from November 1997 till December 1999, whereby methods and process and products scenarios were developed, innovations tested and first information and demonstrations were provided. In the next third phase the scenarios were carried into strategic measures and prototype demonstration models and the already mentioned Office Index Check was carried out. In the last fourth phase of the project the concepts "Soft Success Factors for Property" was implemented in means of strategic measures and relating to concepts and space. On this stage the team concentrated especially on the development of empirics concerning Office Performance, and Tools supporting digital working. This was also the time, when the work on the Genius II scenario began, as well as the sub-project "eWork", investigating medium and long-term technology road-maps and trends and preparing them for a real implementation. The result was data on the many sub-projects and studies, some of which started to be implemented till the end of the main project, and was from great importance to the partner companies of the initiative.

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<sup>133</sup> See Bauer/ Rieck / Stiefel 2001, p.15-32



The procedure of developing, implementing and researching of future concepts like these is as follows:

### 3.1.1 The concepts

The common between all these scenarios is that all of them have the aim to offer a long-term roadmap for the office and work concepts development in the future. The concepts were developed considering the fundamental changes happening in the world and life in the last decade, the globalisation and the radically changing nature of office tasks transforming routine, schedule-tasks into highly-complex, individual tasks. Following this trend, knowledge becomes a crucial factor, as well as implementation of technologies and this trend is summarized by the slogan: "Office is where you are!"

### 3.1.2 The practical Implementation

The practical implementation of new, flexible office concepts happens in few phases.<sup>134</sup>

- As first step the concepts get implemented and evaluated, serving as a basis for a later development of spatial-organisation concepts for the "knowledge-workers". A transformation to a digital data-collecting and saving was tested, as well as an amount of different flexible workplaces for different tasks, PCs replaced by flexible workstations with local and temporary user profiles and databases.
- In a second step innovation for improving work-life balance and setting the focus on creativity were implemented. In this phase was tested the "Interactive Creativity Landscape" to support creative work. To achieve this space was divided into three zones: the action zone (communication, meetings), the interaction zone (intelligent furniture, virtual working environment etc) and the retreat zone (possibilities for individual adaptation of the space with technologies for visual and acoustic screening).
- The last phase sets the focus on motivation as an aspect with great potentials to influence positively performance and consideration about ways to raise motivation. For this purpose spatial factors, as well as functional factors were considered and their influence on motivation was investigated.

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<sup>134</sup> See Bauer/ Rieck / Stiefel 2001, p.17

### 3.1.3 Projects and Studies

Examples for the achievements, sub-projects and researches within the OFFICE 21<sup>®</sup> initiative are listed below:<sup>135</sup>

- Genius II, based on Delphi studies, which main tasks was to forecast the future trend in working environment development up to the year 2020
- Concept for the use of non-territorial office concepts which was later used as basis for the development of products and services, supporting these office concepts
- The software tool "Immo-Check" for sustainability of properties
- The interactive software tool "Office Commander" for evaluation of office concepts
- The observed as crucial and groundbreaking concepts "Interactive Creativity Land" to estimate the changes and the consequences when creativity is set as core factor for the office performance
- The prototypes "COMET – Communication Environment" and "OPS- Office Positioning" for media supported interactive work and context-sensitive communication management in flexible office concepts.

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<sup>135</sup> See Bauer/ Rieck / Stiefel 2001, p.15-32

## 4 Conclusion

The results presented in this chapter, are a product of a research in few directions. The purpose of this chapter is to investigate the spread and implementation of new office concepts, as well to display linkages existing between different factors of the corporate structures and cultures and the office concepts which is chosen by the top management of the particular company.

The results are estimated by:

- Conducting interviews with employees and managers
- Visiting offices of international companies
- Analyzing publications about and from companies

### 4.1 Research Basis

Following table represents the companies, considered in the research, the location of the office visited, the industry of the company, as well the method of investigation:

Method	Company	Industry	Location	Contact Person
Interviews	AT Kearney	Consulting	Vienna	Martin Schädle
	McKinsey	Consulting	Vienna	Dr. Alexander Schwartz
	Beyersdorfer	Cosmetics		N/A
	Siemens	Technologies	Sofia, Vienna	N/A
	Mtel (Mobilkom)	Telecommunication	Sofia	N/A
	Others* (6)	Consulting, Civil Engineer-	Vienna	N/A

## New Office Concepts for New Corporate Structures

		ing, Technologies		
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\* Companies' names and names of interviewed people are not allowed to be publicised.

Method	Company	Industry	Location
Personal Visit	AT Kearney	Consulting	Vienna
	BA-CA	Finance	Vienna
	Erste Bank und Sparkasse	Finance	Vienna
	Hebros Bank (BA-CA)	Finance	Sofia
	Bosch	Technologies	Jihlava, Düsseldorf
	BCG	Consulting	Vienna
	OMV	Chemical/Oil Industry	Vienna
	Porsche AG	Automobile Industry	Sofia, Salzburg
	Reiffeisenbank	Finance	Vienna
	Siemens	Technologies	Sofia, Vienna
Soravia	Real Estates	Sofia	

**New Office Concepts for New Corporate Structures**

	SW Umwelttechnik	Civil Engineering	Budapest
	Strabag	Civil Engineering	Sofia, Vienna
	Werner Consult Ziviltechniker GmbH	Civil Engineering	Vienna
	Wiener Städtische	Finance, Real Estate	Vienna, Sofia

<b>Method</b>	<b>Company</b>	<b>Industry</b>
<b>Other Sources (Publications etc)</b>	Accenture	Consulting
	IBM	IT, Consulting
	INVISTA (DuPont)	Technologies
	Bilfinger Berger AG	Civil Engineering
	CC Bank AG	Finance
	Deutsche Bank	Finance
	Deutsche Post Immobilien	Finance, Real Estates
	Deutsche Telekom Ag	Telecommunications
	DIFA Deutsche Immobilien Fonds Ag	Real Estates, Finance

	Drees&Sommer Ag	Services
	FinanzIT GmbH	Data Services
	Haworth GmbH	Planning, Architecture, Civil Engineering
	Fraunhofer IOA	Innovation, Technologies
	LHI Leasing GmbH	Real Estates, Finance
	Phillips AEG Licht GmbH	Technologies
	Sun Microsystems	IT
	Toshiba Europe GmbH	Technologies
	Vivico Real Estate GmbH	Real Estates
	Zent Frenger Gesellschaft	Technologies

## **4.2 Research Methods**

### **4.2.1 Interviews**

The interviews were conducted according to the questionnaire bellow. There were 11 interviews conducted in companies of different industries, thus, two of the interviewed allowed the publication of a full transcript with name assigned and 6 managers did want the companies' names to be mentioned. The results of these interviews are considered in the diagrams bellow. Most of the interviews were conducted in an informal conversation, so that the interviewed had the possibility to discuss their office concept, therefore not all questions were discussed in all

the interviews. Almost all interviews were conducted in German, two were conducted in Bulgarian.

Some of the interview-transcriptions, translated in English, can be seen in the attachment.

**Questionnaire**

Q1: What is the industry of your company?

Q2: How would you describe the office concept of your company?

- Traditional Office concept
- Flexible Office Concept

Q3: Which of the following office concepts are used by your company? (Multiple choice possible)

- Cellular office
- Group office
- Combination office
- Open-plan office
- Desk-sharing/ tele-working
- Business centre
- Data Centre
- Virtual Office

Q4: How do you feel about your office concept?

1-5 (1: perfect – 5: bad)

Q5: How Important are IT and ICT for your work?

1 – 5 (1: crucial importance – 5: not that important)

Q6: How much time/week do you spend in your base office?

- I am not really assigned to a particular office
- 2 days or less



## New Office Concepts for New Corporate Structures

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- about 3 days
- 3-4 days
- I spend the entire week in my office and travel seldom

Q7: Do you see improvement potentials for your office concepts?

- Yes, I think our current office concept is not optimal and there is another one, which would fit better
- Not enough IT/ICT implemented
- Workplace coordination
- I'm happy with my office

Q8: If having a desk-sharing / Tele-working: How many workplaces are there in your office in comparison to the employees?

- <65% of the employee number
- 65% - 80%
- 80% - 100%
- >100%

Q9: How important is knowledge for your company?

- Knowledge and Innovation are the products of my company
- We are focused on developing innovative technologies
- My company could not survive without implementation of knowledge and innovations
- Not really from crucial importance

Q10: How strong related is your office concept to sharing knowledge and information within the company?

- Our office concepts has crucial importance in sharing knowledge and information
- There are some aspects considering knowledge and information
- Not considered

### 4.2.2 Personal Visits

Since the beginning of my work on this paper, there were many opportunities to visit very large international companies and subsidiaries of large international companies. When the situation allowed, these visits were used also to collect information about office concepts, work forms and corporate structure and culture. The questions asked are the same as the ones in the questionnaire used for the interviews, whereby more than one employee in each of the visited companies was asked about these issues.

Here is considered also information about office features or companies' features, which was personally observed.

Some quotations from the companies' visits can be seen in the attachment.

### 4.2.3 Other Sources

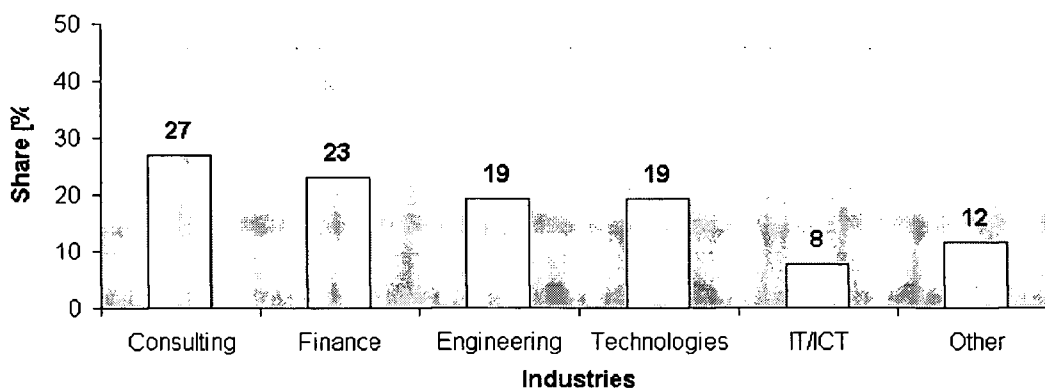
Other sources are publications from and about companies in print media and the WWW. Most of the articles present specialized literature on the issues of office concepts, work forms, knowledge, information and innovation, that is why the findings from this sources are considered only in quality questions and relations and not in the quantitative ones, because they represented best practice example, still exception from the rule and considering the findings from them would deform the results. In the table above are listed companies, for which it was possible to find a more or less full file of the office concepts implementation. Companies, only partly mentioned in the researched literature or companies mentioned only statistically are not listed above.

However, when considered in the qualitative evaluations, these resources were searched for information, answering the questions from the questionnaire and proving the statements from the paperwork (for example by the compilation of the tables with the most effective office concepts in terms of industries and corporate structure's features – see the pages bellow).

### 4.3 Results

Following diagram shows the Data Structure of the Industries considered for the Survey. The companies evaluated are 27, thus, some of them are acting in more than one industry (for example IT and Technologies) and appear therefore in more than one category. The decision to include one company acting in two industries in both categories for the industries is explained by the fact, that many companies with two or more core competences use different office concepts for the different departments and industries.

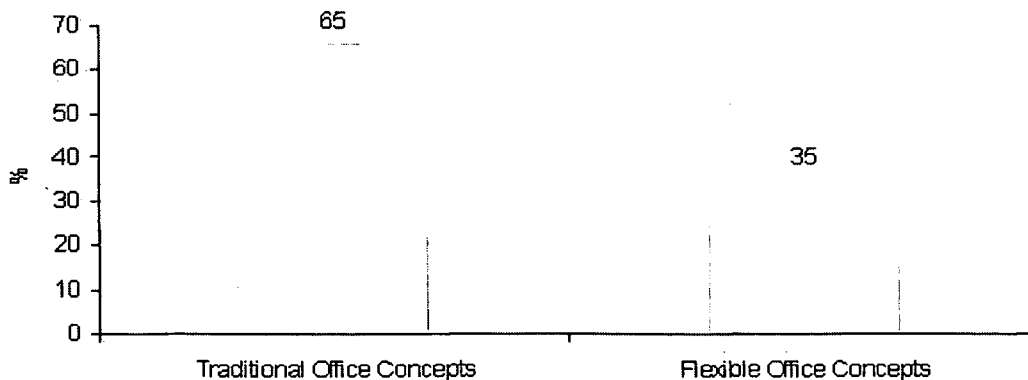
Industries' Shares by the Evaluation



#### 4.3.1 Implementation's Ratio Traditional/Flexible Office Concepts according to the Industry

Some of the companies implement both flexible and traditional office concepts, so that they appear in both categories. Following diagrams shows the implementation's ratio traditional/flexible office concepts in the different industries.

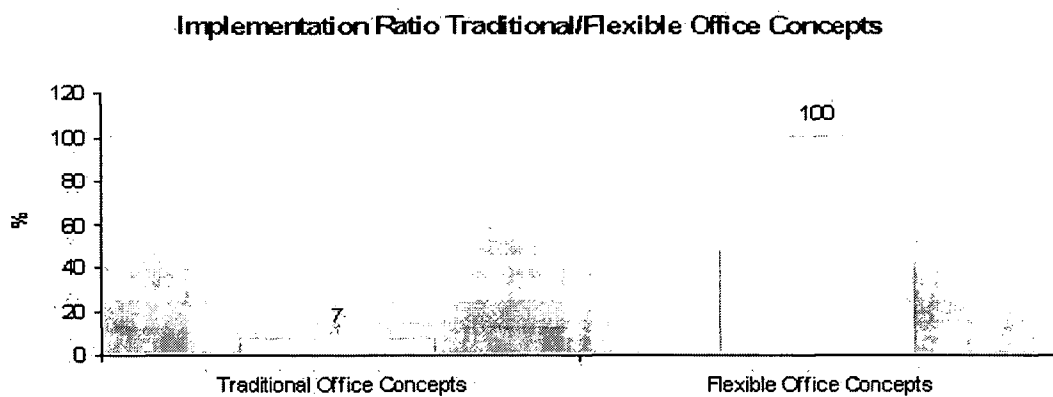
Implementation Ratio Traditional/Flexible Office Concepts



### 4.3.1.1 Consulting

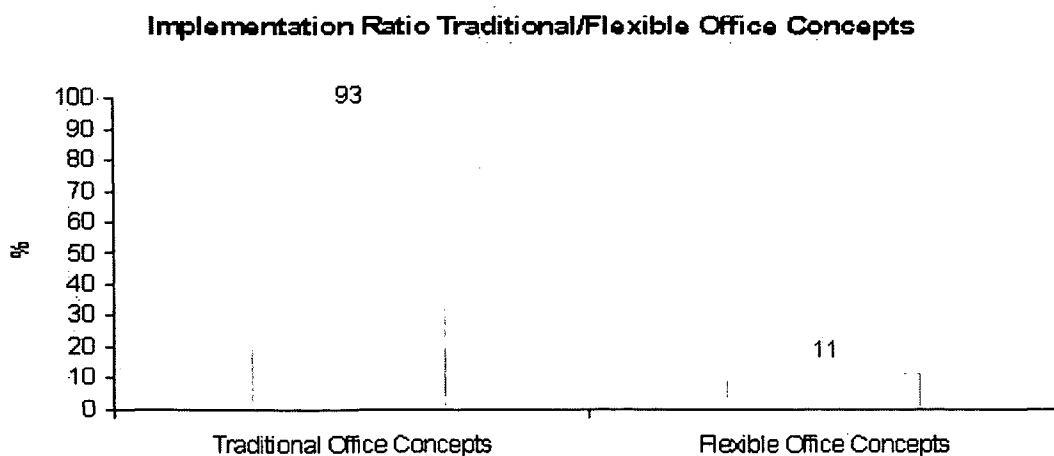
Consulting firms have a very high share of implementation of flexible office concepts, which can be explained: first with the high mobility of the employees and second – with the very high requirements and need for flexibility and possibility for undisturbed information flow and knowledge share.

The percentage sum is higher than 100 because all the evaluated consulting companies were implementing flexible office concepts in general, and in very limited rate, for administrative tasks – traditional, personally assigned workplaces



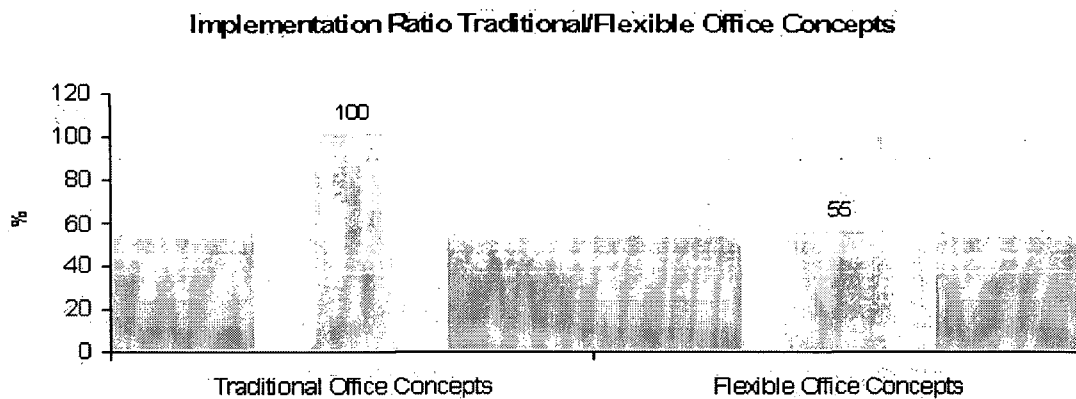
### 4.3.1.2 Engineering

The producing industries still use preliminary traditional office concepts. Vice versa in comparison to the consulting, especially in the civil engineering companies, the percentage is greater than 100, because all companies use traditional office concepts and only few - additionally flexible office concepts.



### 4.3.1.3 Technologies

The estimated results from the companies in the technologies sectors can be explained by the industrial, process orientated background of these companies and the globalization trend and future, forcing them to more flexibility, dynamics and need for knowledge and innovation development.



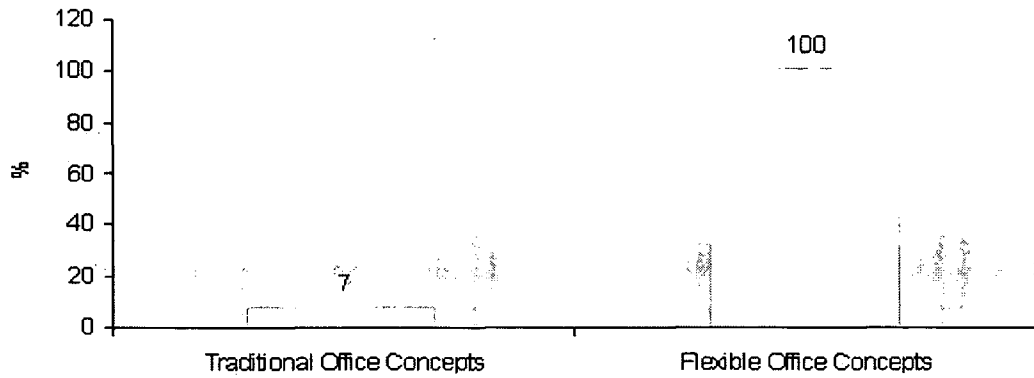
### 4.3.1.4 IT/ICT

The results from the evaluation of the IT/ICT companies are the ones with least reliability, because there were only two companies from these industries included in the research.

The interpretation of the results is therefore very easy: one of the companies is concentrated in communication technologies, is a subsidiary of a very big West-European telecommunication company in Eastern Europe, which managed to establish after an enormous amount of investments not only one of the most rentable telecommunication companies all over the world, but also one of the most modern equipped companies, with very flexible office concepts. On the other hand is another company, acting not only in the communication industry, but also in the technology area. It is producing different technologies products. It is implementing traditional, as well as flexible office concepts in the different departments and according to the different work types.

## New Office Concepts for New Corporate Structures

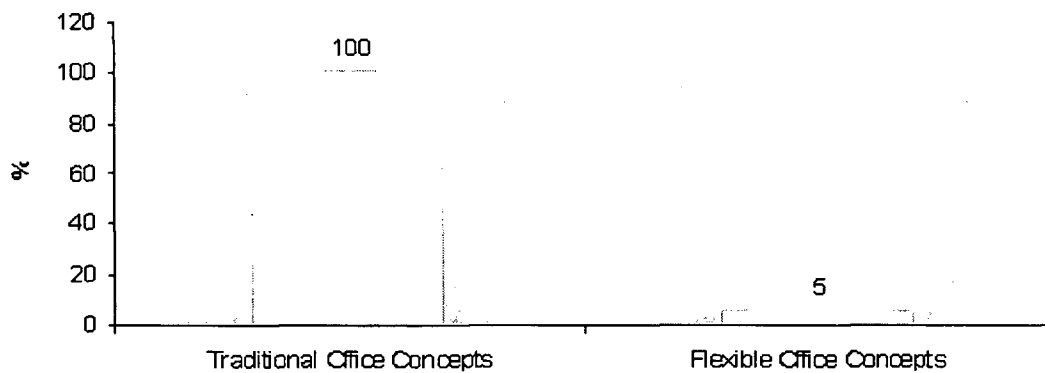
Implementation Ratio Traditional/Flexible Office Concepts



### Finance

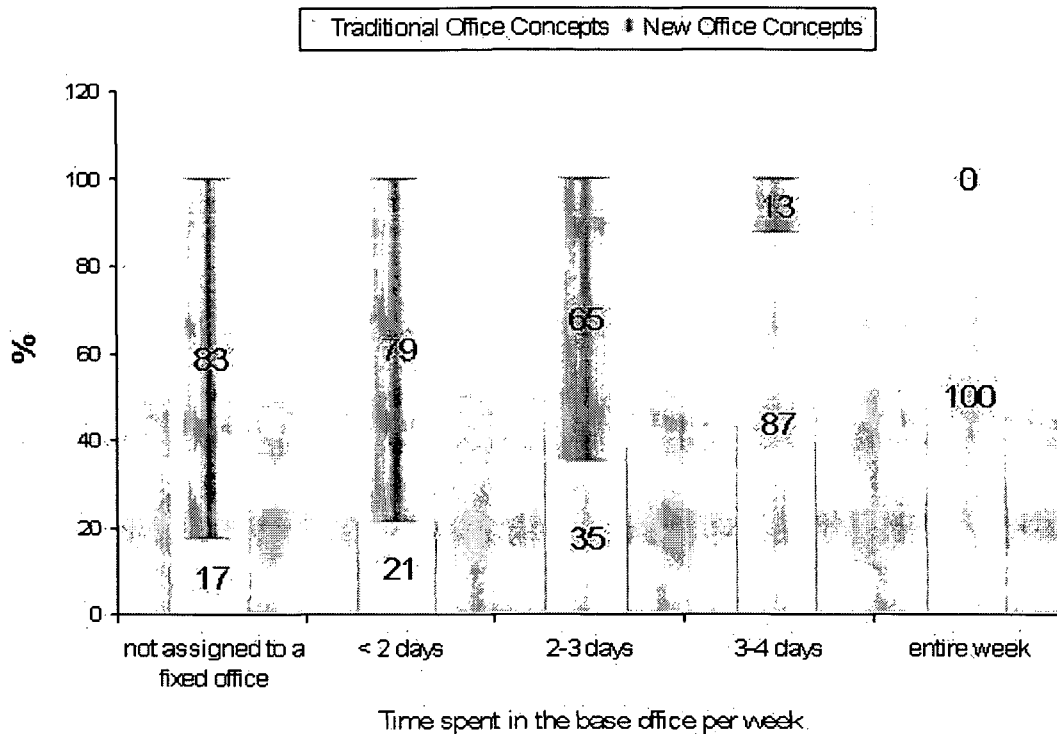
Because the financial companies, observed in this evaluation, were more or less local companies or companies acting on limited markets, the results showed a tendency toward traditional workplace and office forms (preliminary group- and combination offices, considered here as office concepts, belonging to the traditional concepts).

Implementation Ratio Traditional/Flexible Office Concepts



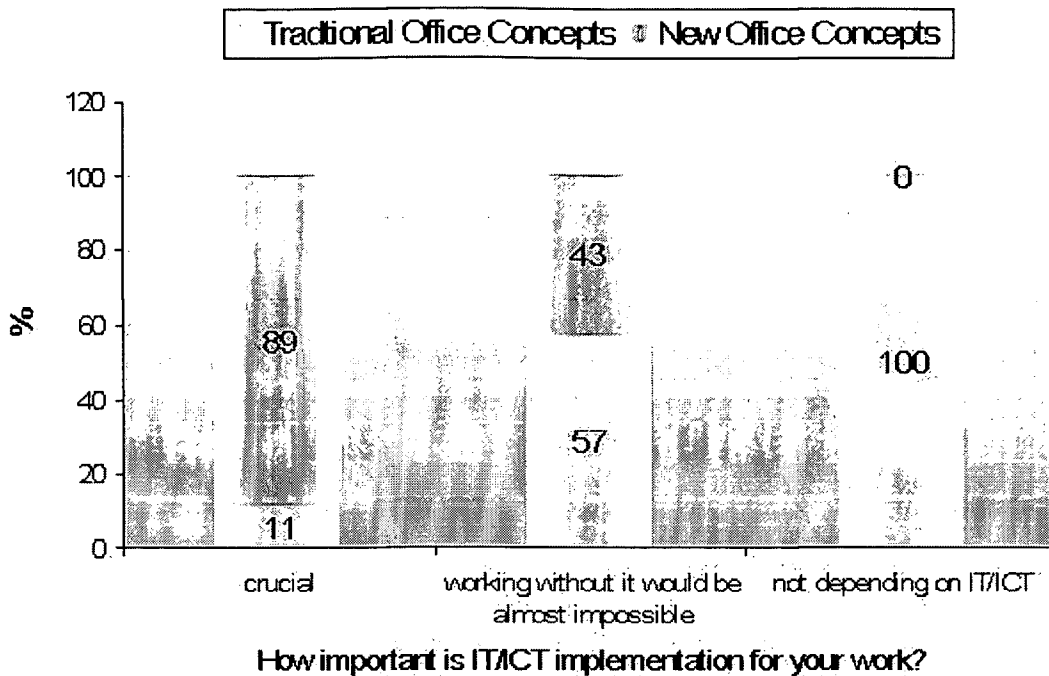
### 4.3.2 Implementation Ratio Traditional/Flexible Office Concepts according to Corporate Structure, Features and Culture

It was possible to estimate a very clear relationship between time spent in the office per week and the office concepts of the home base, following the logic of one of the strongest requirements and arguments for the implementation of new office concepts:



It was also possible to estimate the correlation between IT/ICT implementation rate (in the most cases by asking additional questions about the kind of IT/ICT equipment and its use frequency) and office concepts. In some of the cases IT/ICT was object and product of the company activities, in other – supporting equipment. In both cases the equipment amount, complexity and use frequency can be correlated to knowledge and innovation share within the company, which as an indirect way to evaluate their (knowledge and innovation) importance, since a direct questioning did not lead to the required results (see below):

## New Office Concepts for New Corporate Structures



Analyzing the results from interviews and observations, another relation seemed to be even more clearly expressed than the linkage between companies' industry and office concepts at this was the connection between company's policy and culture's features and office concepts.

For example, when evaluating the questions about corporate policy considering knowledge and knowledge development and share, the trend was clearly leading to greater requirement for flexible office forms with rising importance of knowledge and innovation for the company. Although, it was very hard, almost impossible to estimate the correlation between knowledge and innovation importance for the company and flexible office implementation for better knowledge share and innovations motivation, because all the firms were pretending that knowledge is very important and innovations are implemented and are a part of their corporate culture and policy, but it was not possible to design a frame for objective comparison of this factor in the different companies and evaluate the realistic rate of knowledge and innovation share and importance.

In this context, a very interesting finding was the fact that the importance, recognition and share of knowledge in the corporate life are not only a reason and argument for decision for one or another office concept. The connection between both seemed to be much more significant, since among the companies researched, there was an example for a company, pretending having knowledge as a crucial success factor, although having problems with intellectual capital and knowledge share and developing in their corporate culture and policy (according to external researches and employees statements). The company was using a flexible office con-



cept with desk-sharing and tele-working, which was wrong implemented and had only a meaning of prosperity and success sign. There were no benefits from the implementation of the chosen office concepts, either in space savings, cost savings or enabling knowledge and information share. Thus, a successfully implemented flexible office concept was also an evidence for the importance of knowledge and its share for the company and its place in the corporate culture and policy.

Another expected connection was the one between the implementation of IT/ICT – knowledge/innovation – flexible office concepts: the more knowledge and innovation are important for the company, the more IT/ICT are crucial for company/employee performance and the greater the possibility to have a very well implemented flexible office in the company.

#### 4.4 Presumptions and Recommendations

The impression got after the research of literature and experience was of a very dynamic system, more or less in a transition period, when old thing got given up, new get tested and implemented and have an explosively development, partly because of the “new trend”-effect.

However, the researches and literature referred, showed some trends between industries as well as company features and functional units, and possible office concepts. The following table is a summary of the presumptions and also recommendations for office concepts' implementation according to the industry and the corporate structures' features.

## New Office Concepts for New Corporate Structures

### Office Concepts Implementation according to the Industry

		Consulting	IT/ACT	Media	Telecommunications	Engineering	Technologies	Finance
Traditional Office Concepts	Cellular Office	-	-	+	-	++	+	++
	Group Office	+	+	-	-	++	++	++
	Combination Office	+	+	++	-	++	-	+
New Office Concepts	Desk-Sharing/Tele-Working	++	++	++	+	-	+	+
	Home Office	-	++	++	-	+	-	-
	Call Centre	-	+	++	++	-	+	+
	Business-Centre	+	-	-	+	-	++	+
	Business-Club	++	-	++	++	+	++	+
	Data-Centre	+	++	-	+	-	+	-
	Satellite-Office	-	+	+	++	+	+	++
	Project Workshop	++	+	-	-	-	+	-
	Virtual Teams	++	++	++	++	-	++	+

### Office Concepts Implementation according to Corporate Structure's Features

		Knowledge Development and Share	Customer Support	Mass-Products	Innovation	Administration
Traditional Office Concepts	Cellular Office	-	-	++	-	++
	Group Office	+	-	++	-	++
	Combination Office	+	+	+	+	-
New Office Concepts	Desk-Sharing/Tele-Working	++	+	-	++	-
	Home Office	-	+	-	+	-
	Call Centre	+	++	+	++	-
	Business-Centre	++	++	-	++	-
	Business-Club	++	++	-	++	-
	Data-Centre	+	++	-	++	-
	Satellite-Office	-	++	-	+	+
	Project Workshop	++	++	-	++	-
	Virtual Teams	++	++	-	++	-

## II Finale

The reason for choosing this issue for my thesis was the aspiration to know: to know where do I stand as a future engineer in the whole system and to know how the system I am a part of is changing.

An impression that I always had got proven while working on this paper, searching and reading and talking to people: the time, when everyone could do "his job" without taking care of what is happening around him and still being able to do his job well, without knowing the system he or she is a part from or his work is a part from, is over. If I want to be a good in my job, whatever it is, and want to leave something behind, I have to know the system and its dynamics, to be a successfully acting part of it. And since no part of the systems is working independent, for itself you have to know the other parts, how and what they contribute and how they influence their work, how do they influence yours. And this is not a task someone should wait for to be given; it is a responsibility and engagement.

This paper was my attempt to get to know the global system: the world and time we are acting in, in the most important aspects I could imagine: society, industry, economy. At the end, I got a first realistic and although a slight impression of what is expecting me, when I start my way: very fast changing and dynamic environment, great challenges and responsibility and a system, I can be part of only when knowing and working together, relying on all other the other parts of the system.

**ATTACHMENT I**

**Questionnaire**

Q1: What is the industry of your company?

Q2: How would you describe the office concept of your company?

- Traditional Office concept
- Flexible Office Concept

Q3: Which of the following office concepts are used by your company? (Multiple choice possible)

- Cellular office
- Group office
- Combination office
- Open-plan office
- Desk-sharing/ tele-working
- Business centre
- Data Centre
- Virtual Office

Q4: How do you feel about your office concept?

1-5 (1: perfect – 5: bad)

Q5: How Important are IT and ICT for your work?

1 – 5 (1: crucial importance – 5: not that important)

Q6: How much time/week do you spend in your base office?

- I am not really assigned to a particular office
- 2 days or less
- about 3 days
- 3-4 days
- I spend the entire week in my office and travel seldom

Q7: Do you see improvement potentials for your office concepts?

- Yes, I think our current office concept is not optimal and there is another one, which would fit better
- Not enough IT/ICT implemented
- Workplace coordination
- I'm happy with my office

Q8: If having a desk-sharing / Tele-working: How many workplaces are there in your office in comparison to the employees?

- <65% of the employee number
- 65% - 80%
- 80% - 100%
- >100%

Q9: How important is knowledge for your company?

- Knowledge and Innovation are the products of my company
- We are focused on developing innovative technologies
- My company could not survive without implementation of knowledge and innovations
- Not really from crucial importance

Q10: How strong related is your office concept to sharing knowledge and information within the company?

- Our office concepts has crucial importance in sharing knowledge and information
- There are some aspects considering knowledge and information
- Not considered

**ATTACHMENT II**

**Interviews Transcripts**

**Company:** McKinsey, Vienna Office

**Interviewed:** Dr. Alexander Schwartz, Project Manager

**Date/Time:** 04.06.2006/20:00

**Interview Language:** German

**SM: Mr. Schwartz, You have been working for Your Company for a long time, how long has it been actually since you started?**

AS: It has been 5 years now since I started my carrier in McKinsey.

**SM: How would you describe the office concept of your company? Is it more traditional or more innovative?**

AS: Absolutely innovative, I have worked on many location in different McKinsey offices, preliminary in Europe, everywhere the offices are everything but traditional.

**SM: Which of the following office concepts are used by your company?**

AS: Well, we definitely use desk-sharing and tele-working, because that is the way we do your job. I spend 4 from 5 days a week somewhere, where my client is. I am in the Vienna office only on Friday, which is our Office Day, when we meet and discuss the projects, the work, the week etc. And then I do not really need an assigned workplace, I can just sit in some of the meetings rooms with my computer and the mobile; it does not make any difference.

**SM: How do you feel about your office concept?**

AS: I really do feel great about it! It is this feeling of freedom you have. Wherever you are, in every McKinsey office all over the world, I just have to sit down somewhere, switch on and connect your laptop and mobile to the system, and you can start working in the same way you would work at an assigned and fixed workplace. All the calls I receive are immediately diverted to me, the system recognizes my temporary location, and my notebook finds all the devices I need for my work in the office: for example scanner, copy machines, printers etc.

**SM: This means that IT and ICT are pretty important for your job?**

AS: If I did not have this equipment, I could stay at home and do nothing and would have the same progress. Yes, technologies are crucial for my job, I depend on them, we all do, and that is why the company pays a great attention to the security and reliability of the system.

**SM: Do you see any improvement potentials for your office concepts?**

AS: Not really, I think that our office concept is first: very well designed and second: very well implemented. If some requirements should change, we can recognize the change of the system pretty quickly, so that we can adapt it or change it. But I think, when speaking about changes and adaptations, it concerns much more the equipment that we have at our disposal rather than the office concept and upon new technologies and innovations, we do implement innovations that we believe to be important for our performance very fast, because performance is the most important thing in our job.

**SM: So you said your office concept is designed on a desk-sharing principle: How many workplaces are there in your office in comparison to the employees?**

AS: Well, first I have to consider how many people work in our office and how many of them you can meet in the office from Monday to Thursday.....Hm, we are about 80 people staff working in the Vienna Office, Consultants and Administration, there are not more than 3-5 consultants in the office from Monday to Thursday, and the administrative staff. It is really hard to be said, because we have few small meeting rooms, and you always can sit there and work too. But I think about 2/3 of the employee's number or less.

**SM: How important is knowledge for your company?**

AS: I think that knowledge is one of the most important factors for our job. That is why we organize these extremely stressful for the applicant marathon days, which everyone in the company once went through, to be sure, that we really have the best of the best; that is why the company invests so much in the further education of the employees: after two years in the company, you can promote or subscribe for MBA at the best and most prestigious Universities all over the world: The company will support you for the educational cost and you will be paid for another year as if you are still working; that is the reason why McKinsey invests that much and counts as one of the pioneers in innovation and knowledge: the investments of McKinsey in innovation and knowledge development overwhelm those of the Harvard University, I think this fact means more than words.

**SM: How strong related is your office concept to sharing knowledge and information within the company?**

AS: What do you mean? The technologies or the office design?

**SM: Actually the synergy of both of them. Do you think that the concrete office concept of your company contributes in some way for better information flow and knowledge share and development? You said, that you are using desk-sharing in your company, would it make any difference, if instead the office was organised as a configuration of many cellular offices of small group offices?**

AS: Well, yes, definitely. You always work in a team, when you work on a project. So, it is not possible to work in cellular offices, the good thing of the office concept that we have, is that it is flexible; you can find your place to work concentrated if you need it, but you definitely have the rooms for the team work. And it is important, because a very large part of our work is communication of tasks, information, data, findings, feedbacks etc. You can not do that in a cellular office. And when we work with the client, you can not work in a rigid office anyway, because the team changes very dynamically: people come and go into and from the team and communication is everything.

**SM: I thank you very much for your time and for answering my questions!**



**Company:** AT Kearney, Vienna Office

**Interviewed:** Dr. Martin Schädle, Senior Consulter

**Date/Time:** 19.12.2006/18:30

**Interview Language:** German

**SM: Mr. Schädle, You have been working for Your Company for three years now, and I would like to ask you? How would you describe the office concept of your company? Is it more traditional or more innovative?**

MS: Well, I think it is in some way both.

**SM: Which of the following office concepts are used by your company?**

MS: We use desk-sharing and tele-working, because that is the natural way to work in the consulting industry, but we do have also cellular offices, both singular and for two or three people.

**SM: How do you feel about your office concept?**

MS: Well, I don't really think, that it makes any difference; it is only that you are not allowed to leave personal stuff on your desk and have to lock everything in your closet when leaving. And sometimes you just don't get exactly the workplace you like most.

**SM: Does this mean that some of the workplaces are in some way preferred than others?**

MS: Well, yes, but this is much more upon the personal comfort and priorities: for example I prefer to work near the window and not in a room without windows etc. But except this absolutely subjective evaluation, the workplaces are organized identically: there is a phone and network line everywhere and the laptop and your mobile are your actual workplace.

**SM: And is there any system for booking of a particular workplace? Software hoteling or someone to organize this?**

MS: No, we don't have a system like that. When you arrive in the office you just find a free workplace for you, connect your laptop and mobile to the system and go ahead.

**SM: This led me to a question, which I actually planned to ask you a little bit later, but how many employees and workplaces do you have in the office and couldn't it happen, that there are not enough workplaces?**

MS: Well, Theoretically it could happen, but I do not believe that it ever happened so far. Because more of the consultants are not in the office from Monday to Thursday and it is more or less empty. It could happen, if we have a visit or an international AT Kearney team working in

our office for a longer period of time, but it really did not happen so far, that we are out of workplaces. Besides, you can always work in the meeting rooms to and they are a pretty large buffer. And about the employees and the workplaces - let me think for a moment....with the administration we have 37 employees, and the workplaces are about 39 I think.

**SM: How many of them are personally assigned?**

MS: About 14-15.

**SM: And who has a fix workplace in the company?**

MS: The administration, the supporting staff and the principles.

**SM: This means that there is some hierarchical meaning in the way workplaces are assigned?**

MS: Yes, in some way.

**SM: And what is the difference?**

MS: That my boss has a picture of his family on his desk and I do not (laughing).

**SM: How important is IT and ICT for your job?**

MS: It is very simple: I can not work without a computer and a mobile. It is just not possible.

**SM: Do you see any improvement potentials for your office concepts?**

MS: Oh, yes, we do. We think that we are not using efficient our office space, there are some considerations to rent half of the floor to another company. This will of course significantly reduce the workplaces and I can imagine that we will have to reconstruct everything.

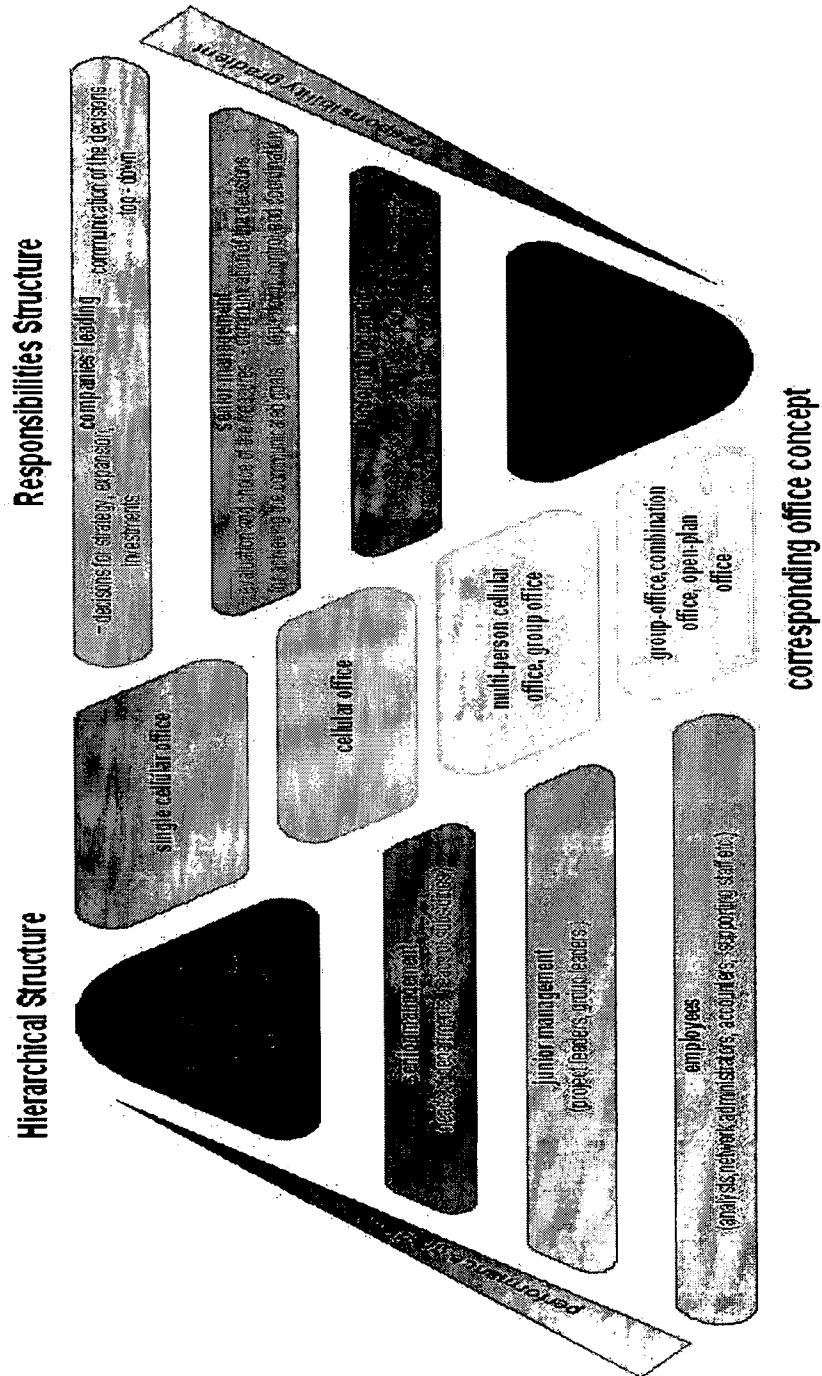
**SM: How important is knowledge for your company?**

MS: Very important, that is way we try to get the best people and the smartest brains. Like every other consulting company, actually (laughing).

**SM: I thank you very much for you time and for answering my questions!**

ATTACHMENT III

Traditional Corporate Structures



Office Concepts Implementation according to the Industry

		Consulting	IT/CT	Media	Telecommunications	Engineering	Technologies	Finance
Traditional Office Concepts	Cellular Office	-	-	+	-	++	+	++
	Group Office	+	+	-	-	++	++	++
	Combination Office	+	+	++	-	++	-	+
New Office Concepts	Desk-Sharing/Tele-Working	++	++	++	+	-	+	+
	Home Office	-	++	++	-	+	-	-
	Call Centre	-	+	++	++	-	+	+
	Business-Centre	+	-	-	+	-	++	+
	Business-Club	++	-	++	++	+	++	+
	Data-Centre	+	++	-	+	-	+	-
	Satellite-Office	-	+	+	++	+	+	++
	Project Workshop	++	+	-	-	-	+	-
Virtual Teams	++	++	++	++	-	++	+	

### Office Concepts Implementation according to Corporate Structure's Features

		Knowledge Development and Share	Customer Support	Mass-Products	Innovation	Administration
Traditional Office Concepts	Cellular Office	-	-	++	-	++
	Group Office	+	-	++	-	++
	Combination Office	+	+	+	+	-
New Office Concepts	Desk-Sharing/Tele-Working	++	+	-	++	-
	Home Office	-	+	-	+	-
	Call Centre	+	++	+	++	-
	Business-Centre	++	++	-	++	-
	Business-Club	++	++	-	++	-
	Data-Centre	+	++	-	++	-
	Satellite-Office	-	++	-	+	+
	Project Workshop	++	++	-	++	-
	Virtual Teams	++	++	-	++	-

New Office Concepts for New Corporate Structures

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