

**Deutsches Institut für Urbanistik
(German Institute of Urban Affairs)**

Occasional Paper

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**»New Media« and Urban Development –
Virtuality and the Formation of New Spatial Patterns
in Urban Areas**

The "Occasional Papers" are a collection of articles in languages other than German that have been written for various events such as conventions and conferences. They also contain summaries taken from selected publications of the institute. All papers of this collection are also available online: <http://www.difu.de/english/occasional/>

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In my lecture I'd like to focus on the relationship between the so-called "new media" and urban development. What is meant by "new media"? "New media" is a term which has been used in German urban research since the mid 1980s. At that time "new media" meant interactive videotext, or "Bildschirmtext" (Engl: screen text) as it was called in Germany, where the monopoly telecom carrier "Deutsche Bundespost" introduced this technology in the early 1980s. "Bildschirmtext" was a barely developed technology for transmitting written messages via telephone. The appearance of these early "Webpages" was similar to an ASCII code document. If one wished to add graphic elements to the document one had only to construct it from individual characters. Nevertheless, "Bildschirmtext" was a kind of forerunner to the world wide web – even if these are totally different technologies. But it was national – not world-wide, i.e. in France and Britain there was much the same service, but using different technologies, so that there was no chance of exchanging messages between addressees in different European countries (sounds a bit like European railway). And "Bildschirmtext" was not user friendly – the French Minitel (the French version of "Bildschirmtext") was much simpler to use.

This was the West-German story. The East-German story was completely different. In the 1980s East-Germans did not have to be concerned about "Bildschirmtext", because most of the population did not even own a telephone. Telephone lines were rare possessions in East-Germany. That applied to cable TV as well. Most of the East-Germans had no cable TV, when it was the usual medium in West-German urban areas to receive broadcasts.

Figure 1

| What is "new media"? | | |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | West-Germany | East-Germany |
| 1980s | <ul style="list-style-type: none"> ▶ interactive videotext ▶ cable TV | <ul style="list-style-type: none"> ▶ telephone ▶ no telephone |
| 1990s – now | <ul style="list-style-type: none"> ▶ cellular telephone ▶ world wide web ▶ e-mail ▶ satellite TV | <ul style="list-style-type: none"> ▶ POT infrastructure ▶ cellular telephone ▶ world wide web ▶ e-mail ▶ satellite TV |

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In the 1990s the technological drivers were cellular phones, Internet based services like world wide web or e-mail and satellite TV, technologies which globalize, de-spatialize, mobilize and re-arrange spatial patterns of use at the same time.

Why should we be concerned about information and communication technologies? There are four simple reasons:

- The technological progress, which I have briefly illustrated. Technological development is not unaffected by society. Technological and societal advancement are not independent of one another. On the contrary, technology is a social construct. To affect the conditions of technological progress we have to know what the technological potentials are and how we might utilize them. Technology is not a tin god we have to pray to, but a tool to support our everyday life and mitigate strains.
- The increasing distribution of ICT leads to new patterns of utilization. At the same time new disparities occur. You can find a multi-plane digital divide: at the global level, at the national level and at the regional level.
- The use of ICT has increased dramatically. The cellular telephone is the best example of this increase. The turnover in cellular telephone services in Germany increased from approximately 7.5 Billion Euro (in 1996) to about 19 Billion four years later (RegTP 2000).
- The virtual and material worlds interweave increasingly. "De digitale stad Amsterdam" was one of the first world wide web communities using the "town" metaphor for a website. Community members were called inhabitants, and nearly every aspect of daily life is mirrored in this kind of cyberspace. Shopping in cybermalls, meeting in chat rooms or teleworking are only a few examples. People used Internet technology to create a cyber character for themselves. But even when they are inhabitants of digital towns, they eat, work and sleep in real houses. In sum, face-to-face contacts are not abolished by e-mail contacts, chat rooms and websites, but they are complemented.

Why do urban areas have to deal with ICT? ICT is used to distribute codified knowledge. Urban areas are centres of knowledge. That is the reason why urban centres are most affected by the use of ICT. They are also hubs of the new information infrastructures like cellular phone or high-band width fixed networks. Competition between several telecom carriers or internet providers occurs frequently in urban areas. ICT users are concentrated in these areas. Knowledge based industries are concentrated in urban areas. Here you can find innovative settings for developing new ICT services as well as the contents to transmit by using ICT. Decision makers in economics and politics are located primarily in urban areas. They use ICT themselves, but they also have to decide on the framework conditions of technology development. Therefore urban areas are locations of industrial-political decisions which define the technological future.

What is the current stage of ICT development in Germany? I will focus on internet development as one of the core technologies which determines the ICT future. In 1997, only 6.5 percent of the German population aged 14 or older, used the internet. Within only 4 years this percentage increased to 38.8 percent. But although we had to face a dramatic rise in internet use, nearly two thirds of the population are not yet online.

Figure 2

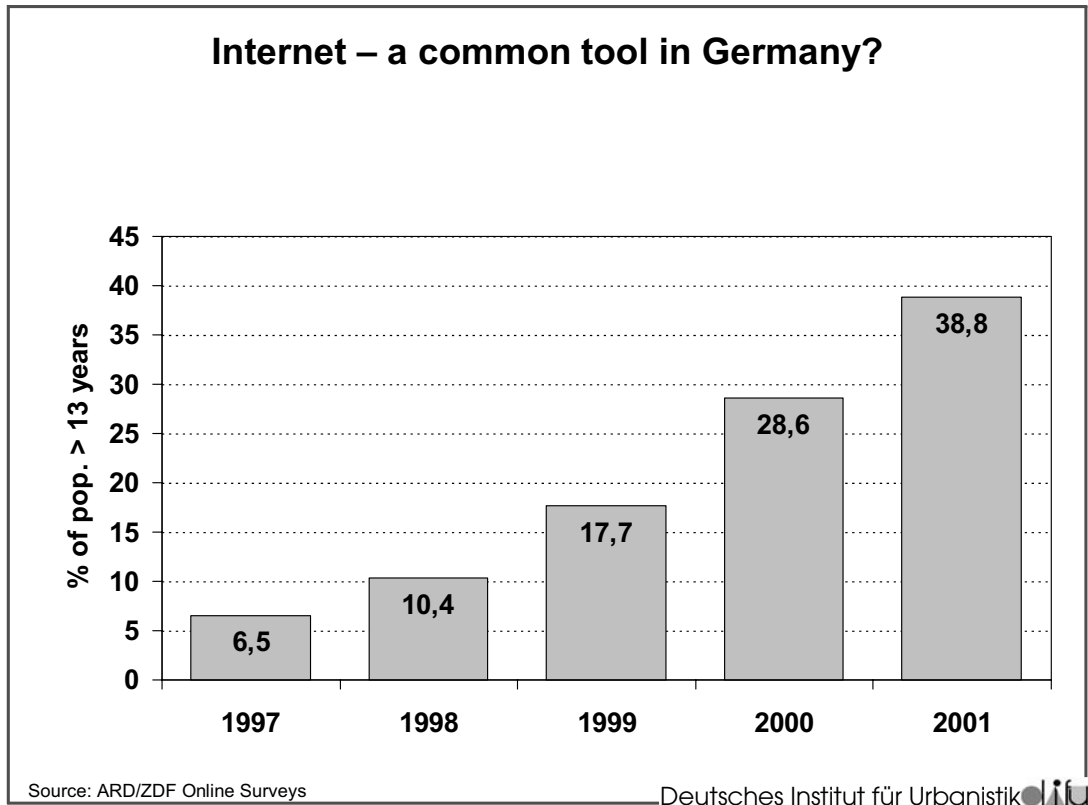
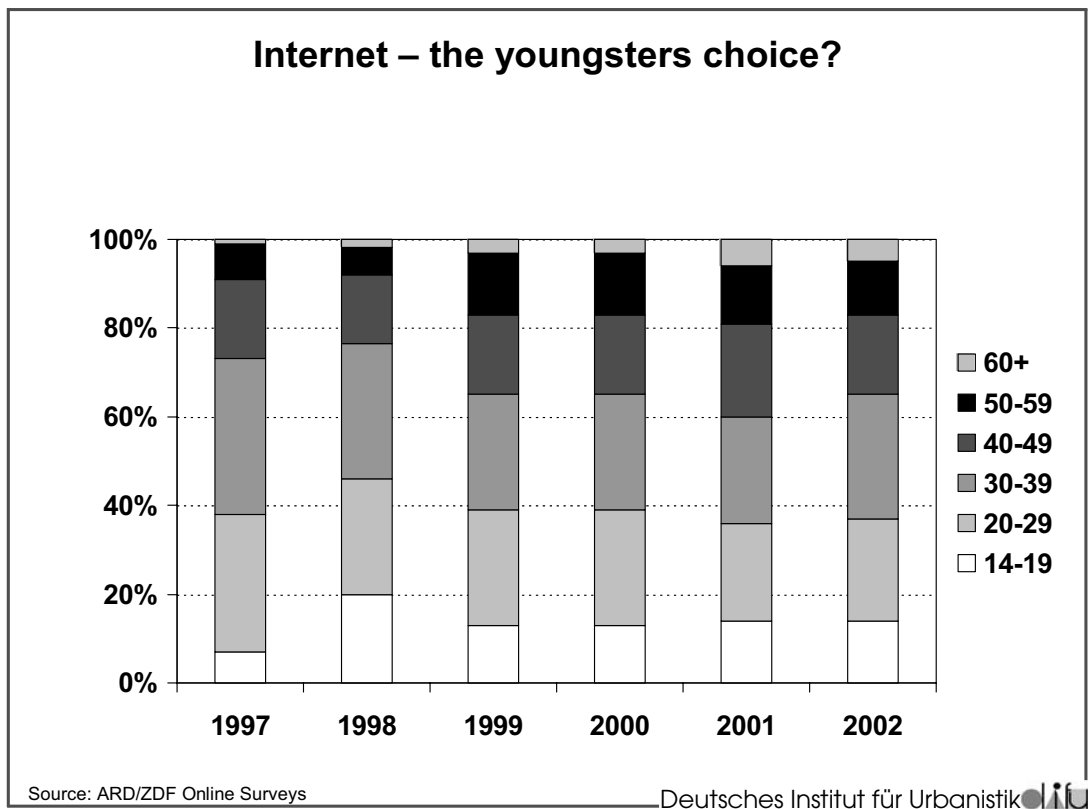


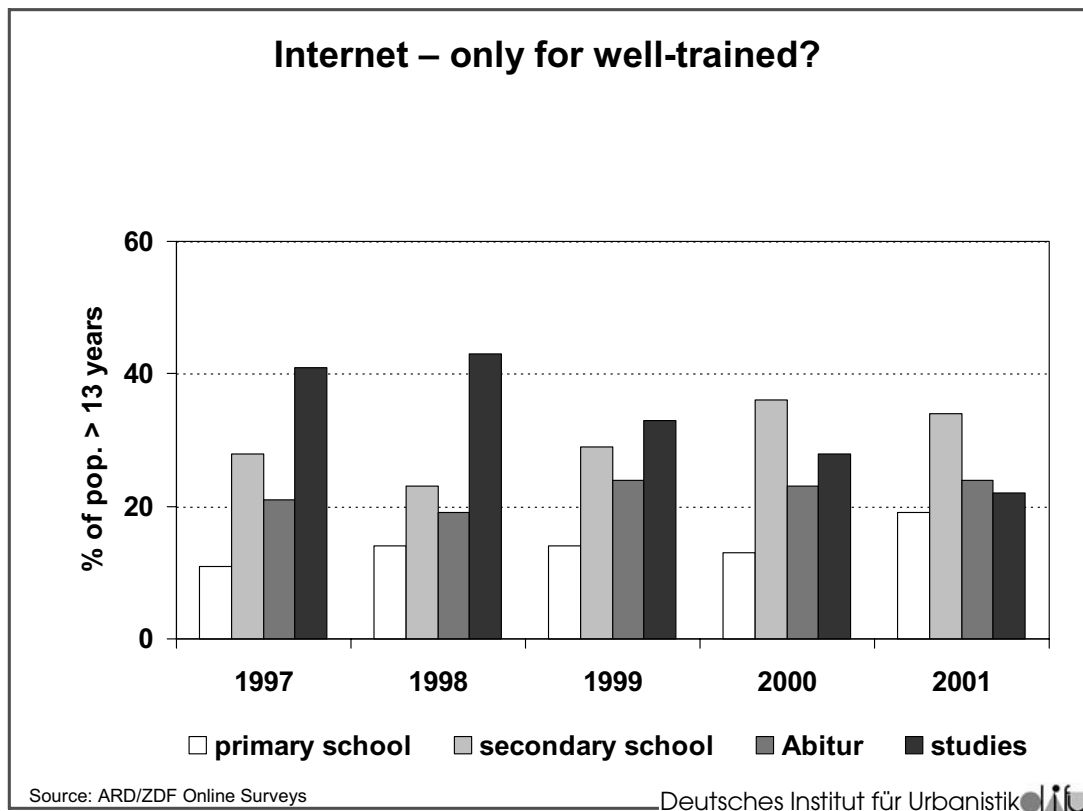
Figure 3



In 1997, the Internet was the media for the computer generation. Two thirds of the Internet users in Germany are aged 20 to 39 years. In 2002, this age bracket accounts for only half of the Internet users whereas 35 percent of Germans on the Internet are 40 years or older. Five percent are 60 years old or older. In 1997 this age class accounted for only 1 percent. What this means is that the Internet is a common tool for many levels of the population.

Looking at the educational level of Internet users shows us a more balanced distribution of Internet use. In the 1990s the Internet was only used by people with higher educational levels. In 2001 people with an "Abitur" or a diploma amounted 46 percent of the Internet users which was a fairly high rate. But in 1997 it was already 62 percent. Internet is a tool in the daily life of people at nearly all educational levels. Nevertheless "nonliners" remain, people who cannot afford or manage to use this new universal information and communication tool, or people who simply do not enjoy using it.

Figure 4



In 1997 the Internet was a media mostly used by men. In Germany 73 percent of the Internet users were men. Even if male users are still the majority, 43 percent of Internet users now are female. This is linked to noticeable impacts on content and the ways in which the Internet is used. Men use the Internet as an electronic toy, whereas the average female user appraises the added value of Internet contents for their daily lives. In the long run this will change Internet contents, even if "male contents" dominate the websites today.

Figure 5

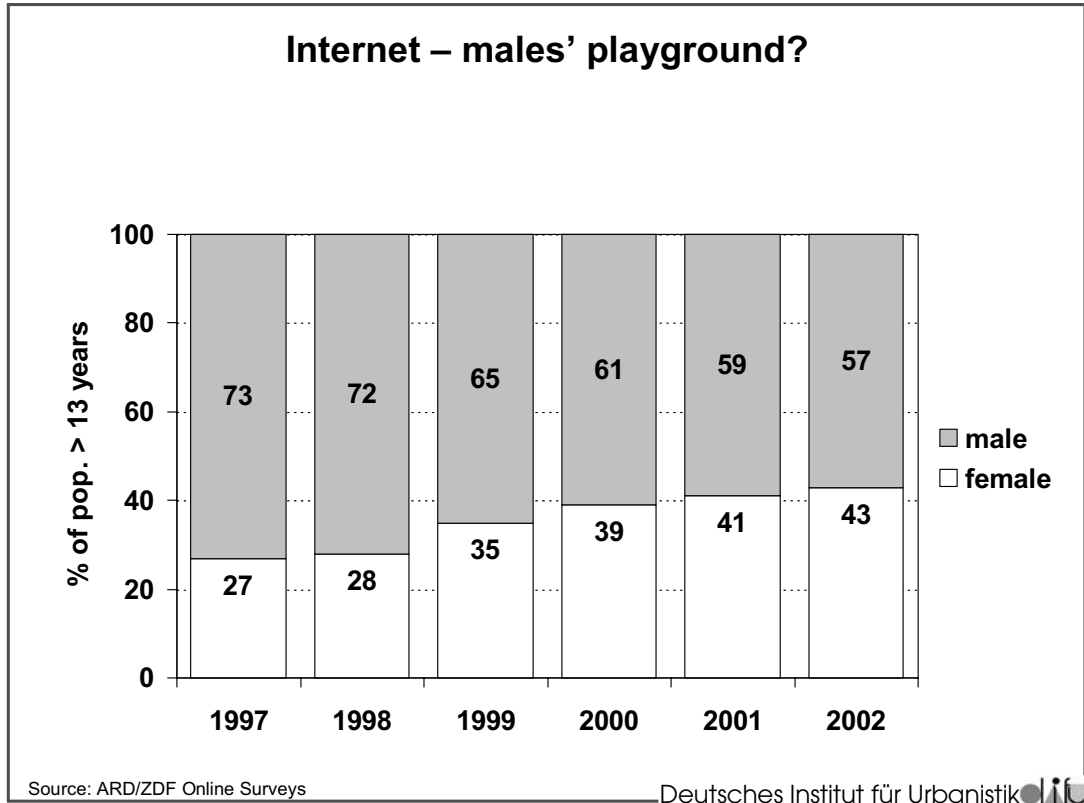
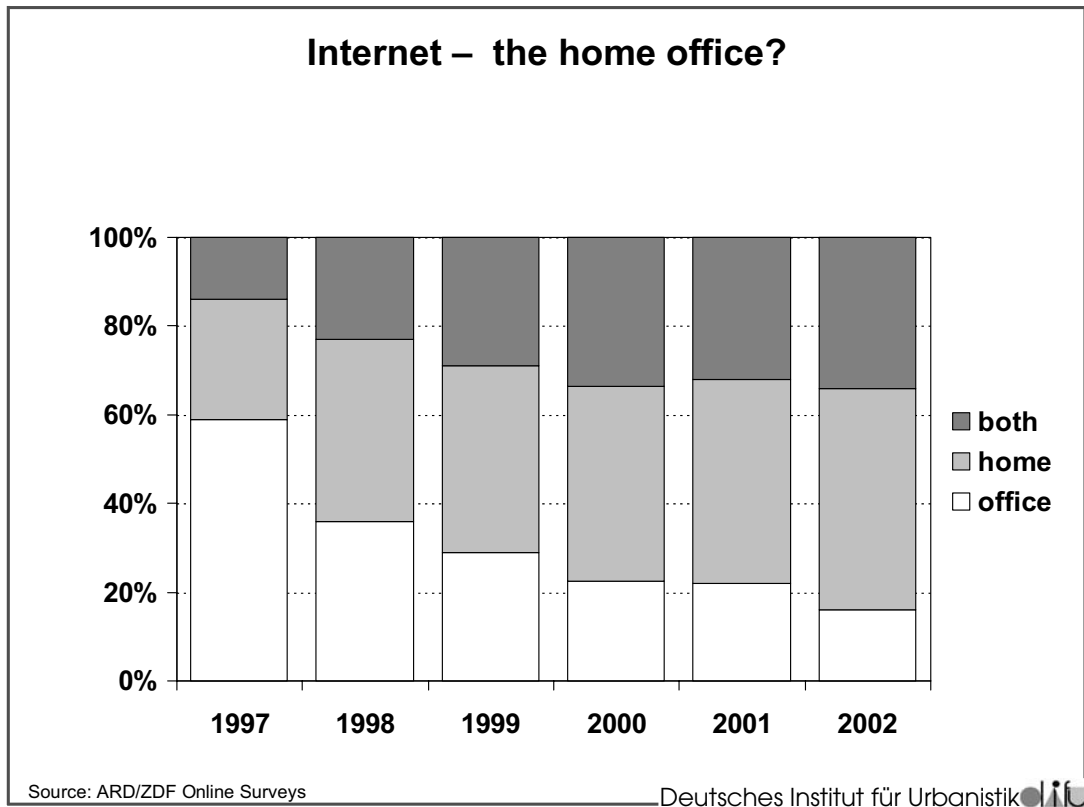
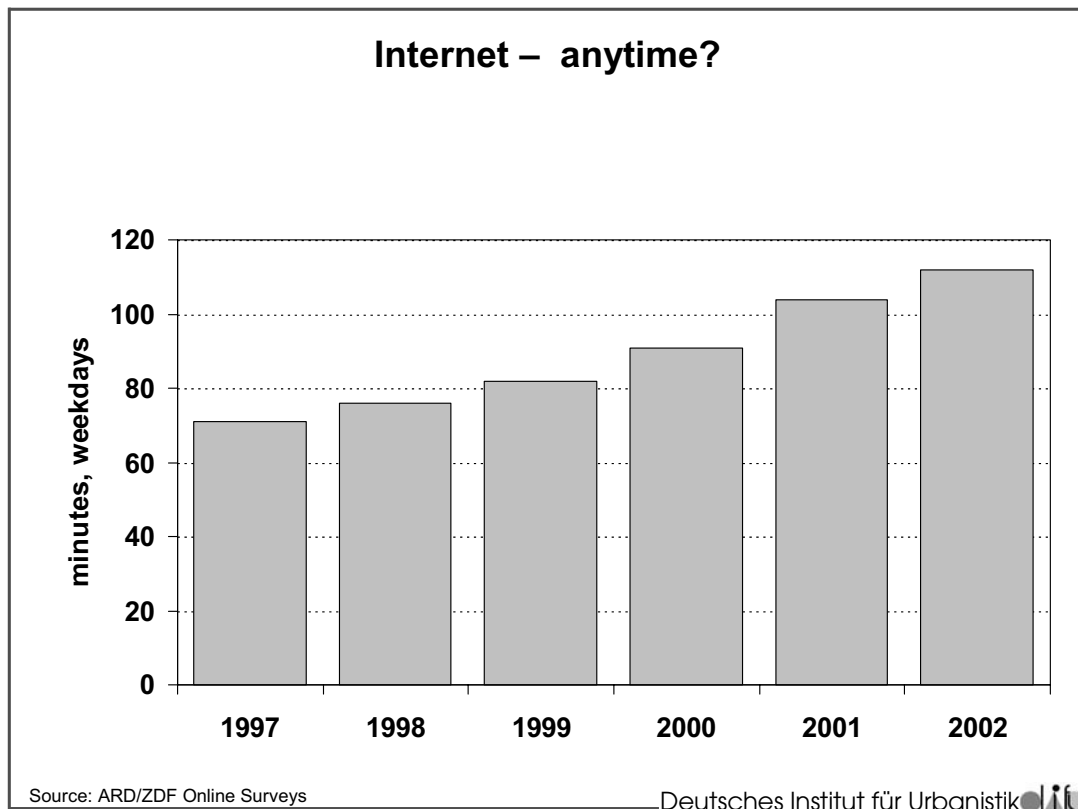


Figure 6



In the 1990s the Internet began as a tool used at work. Only 27 percent of the users had an Internet access at home. About 60 percent used the Internet in the office. In 2002, 50 percent of the "onliners" are on the Internet at home and 34 percent can use it at home or in the office. Internet turned from a working tool into a tool used in daily life. The integration into everyday life is also proven by the increased time people spend on the Internet. In 1997 people were using the Internet on an average of 71 minutes each weekday. In 2002 the average is 112 minutes.

Figure 7



What do people do on the Internet? They search for national and international information as well as for notes on regional event. They use it for "serious" economic information as well as entertainment. The Internet develops a new continuum of information: it intermingles global and local focuses with new "glocalities" and blends information with entertainment to create "infotainment" and it mixes educational subjects with entertainment to create "edutainment", and so forth.

Figure 8

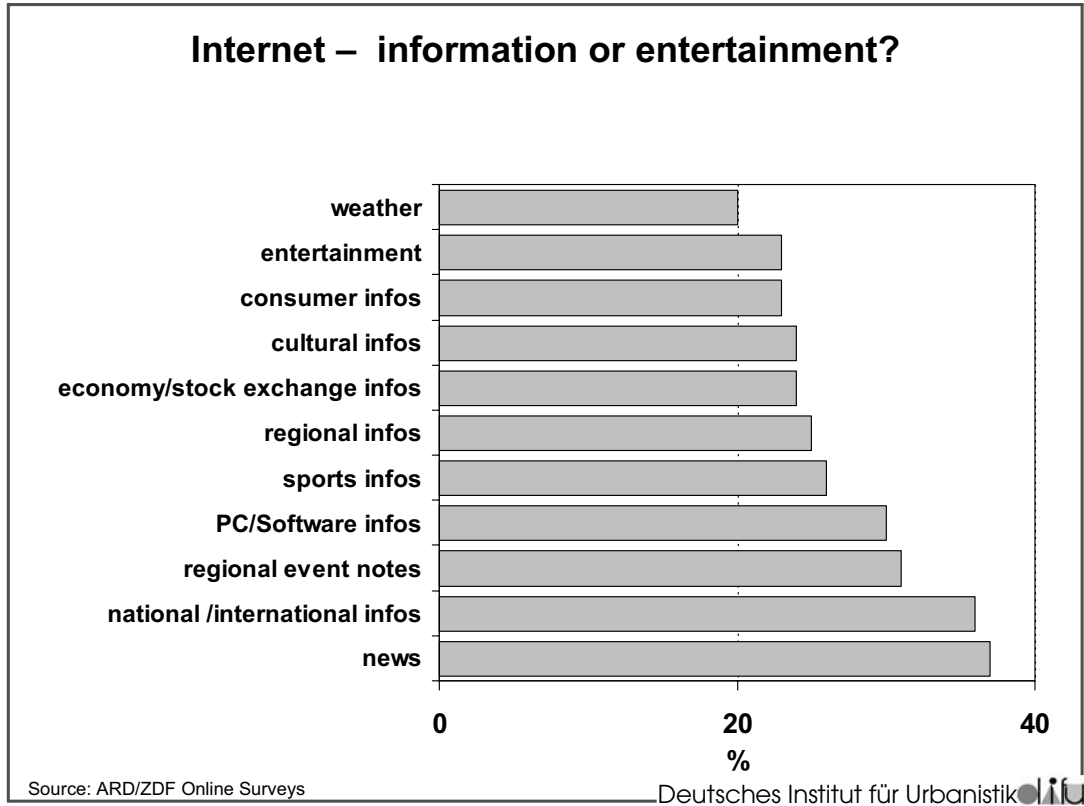
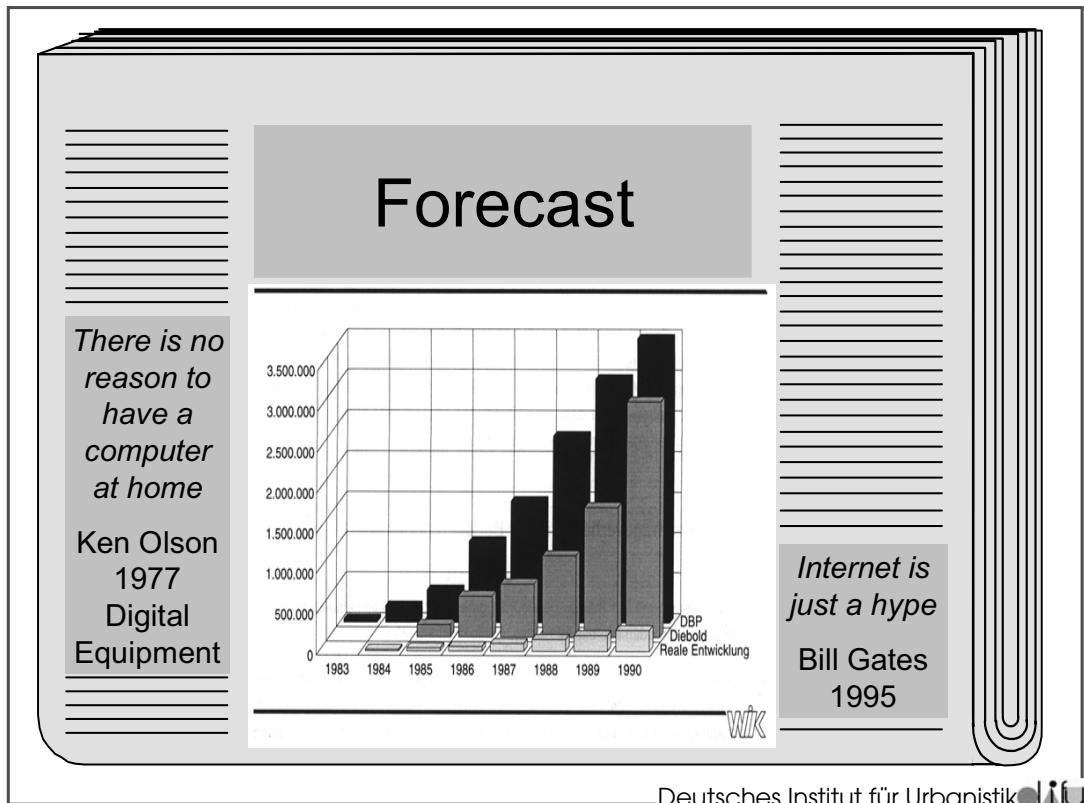


Figure 9

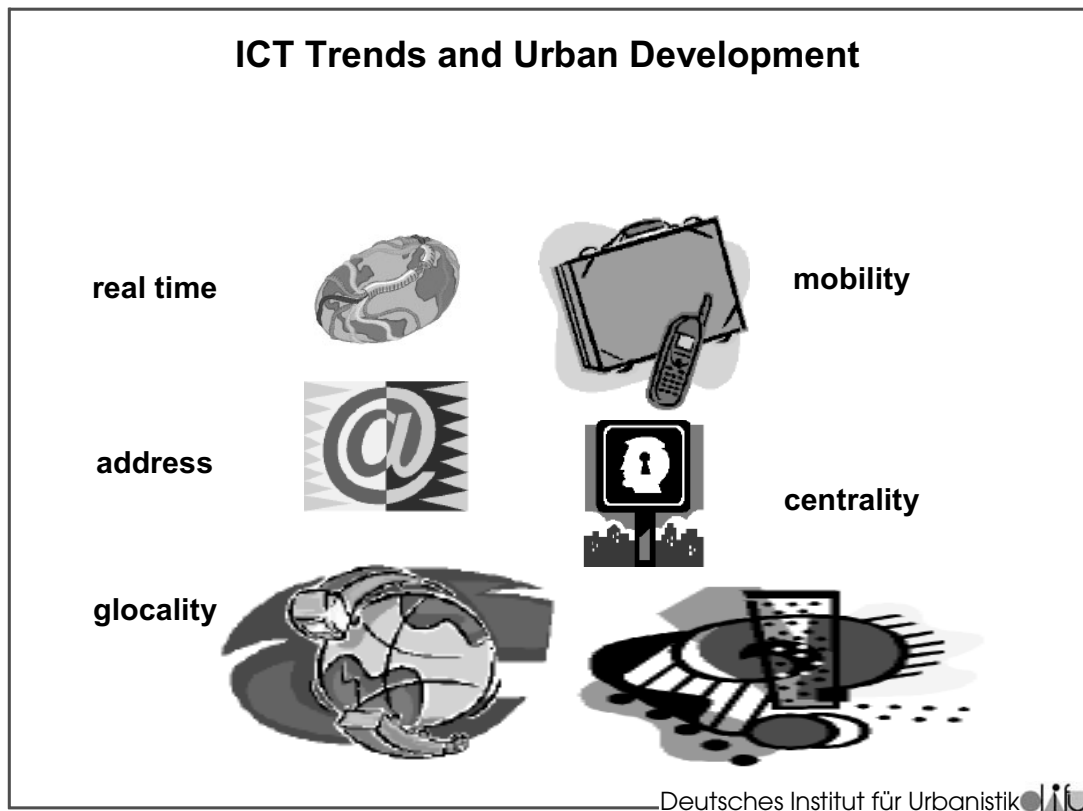


Can we simply prolong the curves of former development to see the future of information society? A brief look into the past shows that forecasts run the risk of being mistaken. Especially in the technological sector. Merely look at the example of Ken Olson who thought that there was no reason to have a computer. That was in 1977. And he was later the founder of "Digital Equipment". He should have known better. Another example thought that the Internet was just hype. The man supposing that was Bill Gates in 1995. Even if we go back to the example of the German "Bildschirmtext" mentioned earlier, comparing the forecasts of number of users with the real number shows that the forecasters were too optimistic – in fact nearly ten times too optimistic.

Various future trends concerning ICT and urban development are being discussed at present:

- Towns and cities seem become more invisible (Batty 1990, 130) as far as real time is concerned (Virilio 1991); and according to this hypothesis, agglomeration advantages lose their importance to the same extent as ubiquitous access to these advantages occurs via Internet (Flusser 1993).
- The "address" as a locational characteristic loses importance and new forms of combined virtual and material addresses emerge (Mitchell 1995, 10); even peripheral locations have the chance to be "well situated" in terms of ICT connectivity; most urban core areas are simultaneously core areas in terms of telecom competition – many alternative carriers offer services in inner cities but not in residential areas. By a process of combining virtual and physical locational characteristics, patterns of accessibility could change fundamentally.
- As the amalgamation of global and local continues (Virilio 1997; Sassen 1991), the formation of a new "glocality" emerges; virtual marketplaces operate globally or locally; global Internet firms like "amazon.com" or "ebay.com" localize their global websites; network communities often work globally but are based locally, etc.
- Daily life is increasingly "mobilized" and there is a trend towards more mobile lifestyles; e.g. cellular telephones and location based services support mobile lifestyles
- Centrality still matters and "the place" seems to be rediscovered as a locational factor (Sassen 2001); even though we have now access via Internet to many services formerly only available in agglomerations, certain agglomeration advantages increase in value; e.g. in a world with ubiquitous and uniform locational factors, regional distinctive features like "creative milieus", potentials for face-to-face contacts or the possibility of getting quick informal information are competitive advantages which gain importance in decisions on location
- Last but not least there are still people (researchers, consultants, politicians) who attach a marginal value to ICT's impact on urban development. Actually there are scarcely any direct impacts of ICT on urban development. Spatial impacts develop with a "time lag" so that one cannot observe recent changes of technology in urban patterns immediately. Because of that impacts of ICT on urban development are difficult to isolate and easy to overlook.

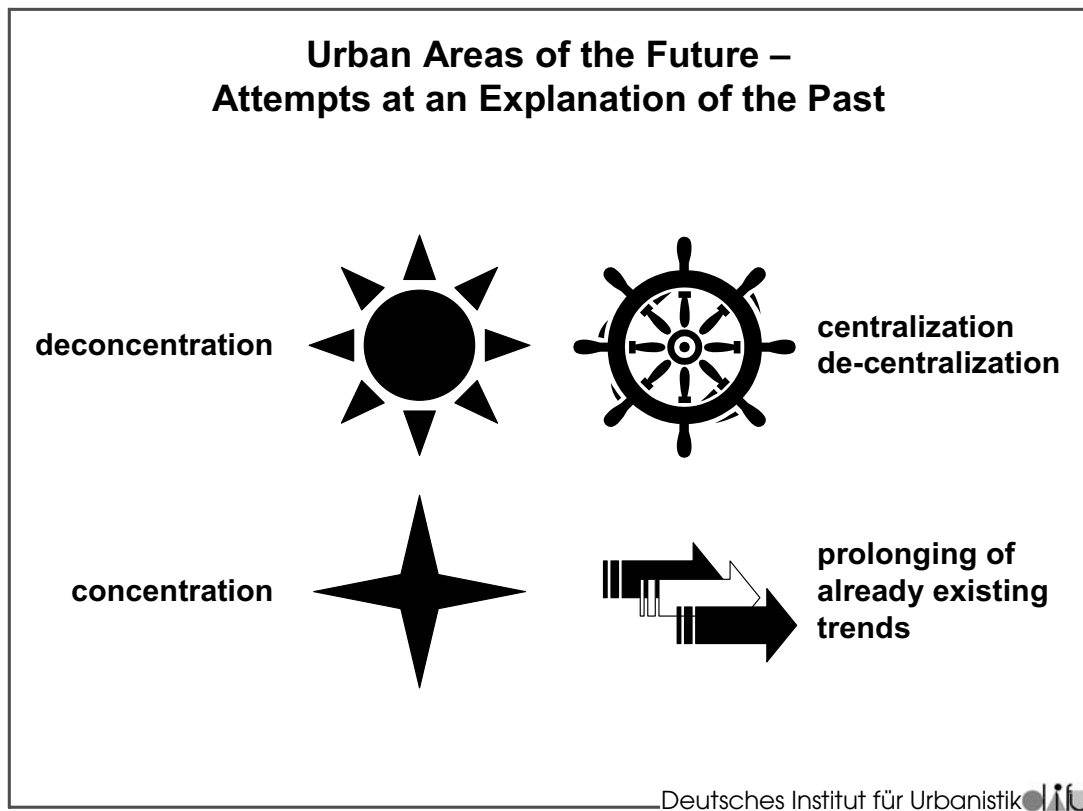
Figure 10



There is not merely a single future of the urban system, but possibly multiple futures, depending on technological progress and social and economic development. How will these futures look?

A hierarchical push of national and international systems in urban areas is one of the possible futures. Since the 1980s we have seen the rise of a new class of urban centres: global cities that depend more on international economic development than on local and national framework conditions. Another process identified is the increasing competition between urban areas for investors and investments, and for gaining job possibilities for their inhabitants, and for receiving attention in general. What the German sociologists Häußermann and Siebel call the "festivalization" of urban politics is one result of these changes (Häußermann/Siebel 1993). Municipalities try to organise events and mega-events, projects and mega-projects, to call attention to their city or town. Large museums, harbour front developments and festivals are examples of these municipal efforts. Disparities between directing regions – such as corporate headquarter locations – and dependent regions – such as industrial locations – may increase. An ever greater number of headquarters may concentrate in fewer and fewer cities and towns leading to a loss of importance in other regions. Deconcentration processes, which would give rural areas greater importance could occur, but a reversal of current trends in less favoured regions, depending solely on technological progress, is not expected.

Figure 11



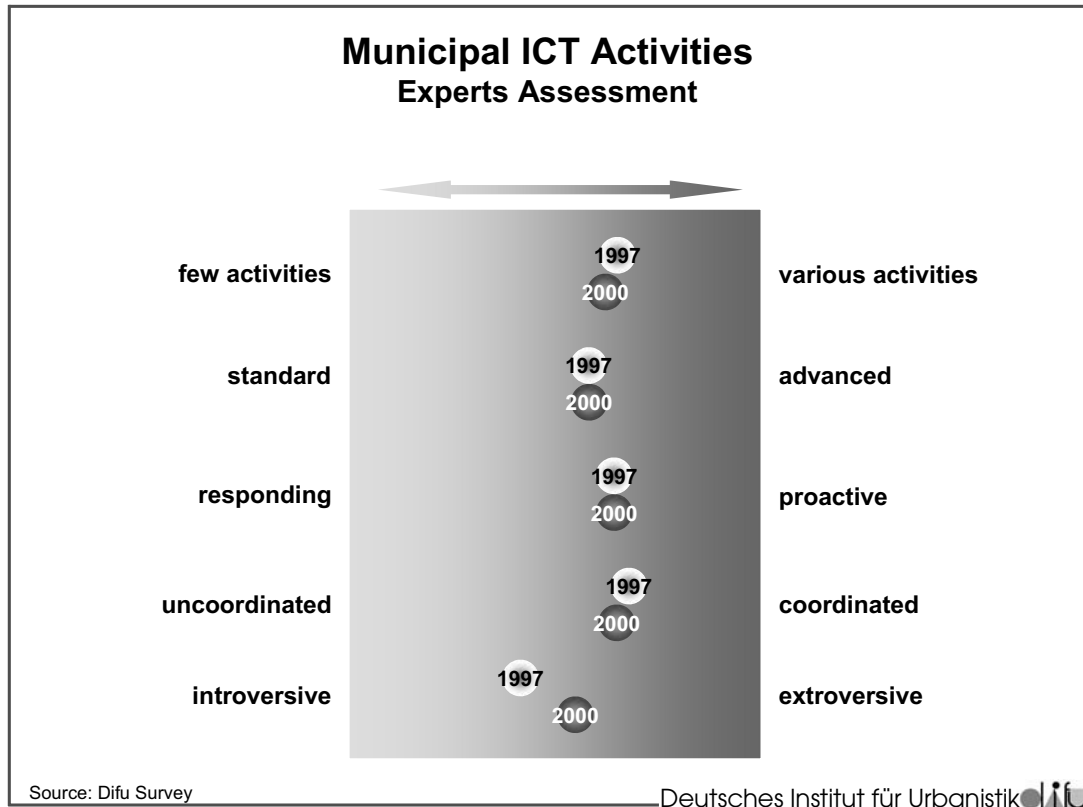
A theoretical model of the spatial consequences of ICT development has been under discussion since the 1980s (Floeting/Grabow 1998, 23):

- ICT may lead to a decrease of agglomeration advantages and therefore to spatial deconcentration
- Existing spatial disparities may be further exacerbated by ICT
- The distribution of control functions may change, bringing advantages or disadvantages to specific regions
- ICT will not alter spatial development trends fundamentally, but instead prolong existing trends

How do municipal authorities in Germany assess their activities in promoting ICT on a local level and in creating an information society? Difu has conducted several written surveys on this subject. The figure below shows the results of the 1997 and the 2000 surveys on municipal ICT activities. We asked ICT experts in municipal administrations how they would describe the municipal activities. German municipalities assume that they conduct various activities. They assess their activities as, in general, advanced, proactive and coordinated. There is practically no change between their assessments in 1997 and in 2000. Only in the direction of their activities has a change occurred. They are now more extroverted. These assessments strengthen the picture of a strongly planned, strate-

gically oriented set of municipal activities. In fact many towns and cities have developed projects to promote ICT. But in general these municipal assessments are overly optimistic.

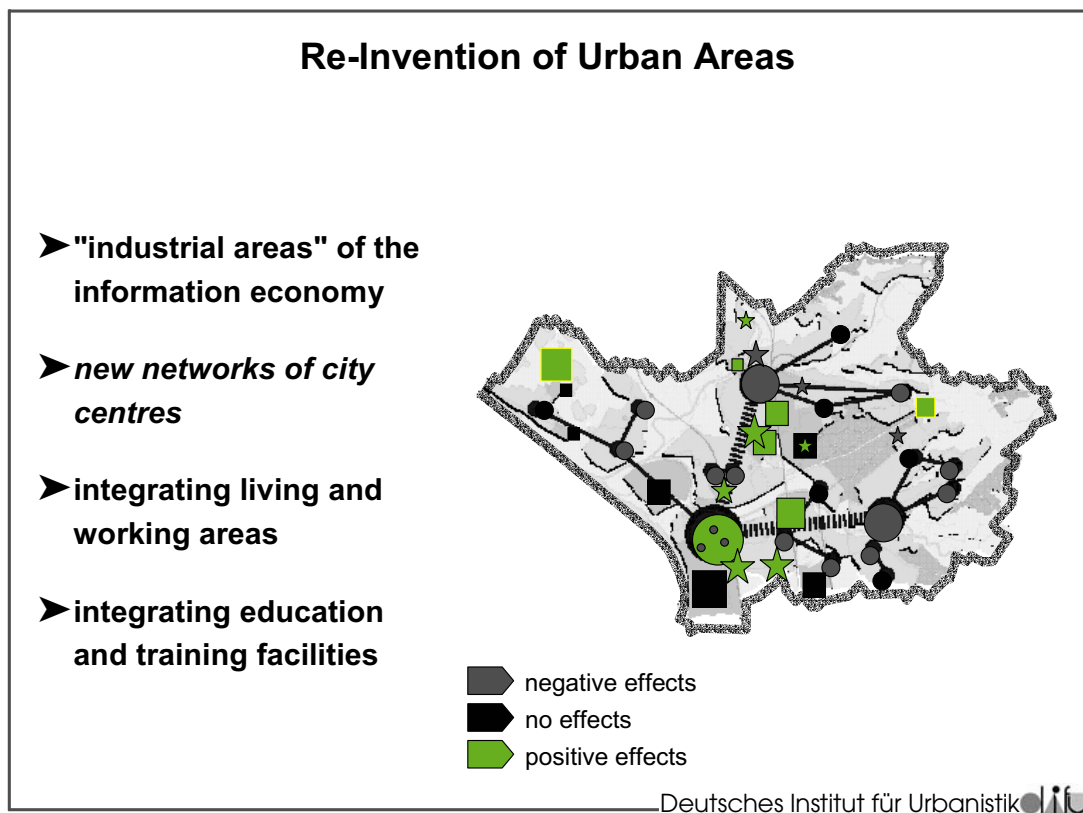
Figure 12



How can the change in urban areas, which is linked to the information society, be described? Visible impacts of technological-economic structural changes can be recognized in several fields of urban development. I would like to mention only a few examples:

- "Industrial areas" of the information economy
There are several examples in German cities and towns of new "industrial areas" for the information industries. One of them is the so-called "MediaPark", which is located on a converted railway lot in Cologne. It was the first anchor project for Cologne's strategy to become a media city and one of the first new mixed-use developments aiming at integrating housing and commercial areas. Another example is the "Coloneum" – a large studio site in Cologne which is a converted air base.
- New networks of city centres
Electronic Commerce will affect different intra-urban centres in various ways. Some will experience negative effects like a loss of purchasing power, others will benefit. Planners in the city of Leverkusen in Northrhine-Westphalia have developed a model of these potentials. In the long run, the interweaving of electronic commerce and traditional shopping may lead to new networks of city centres.

Figure 13

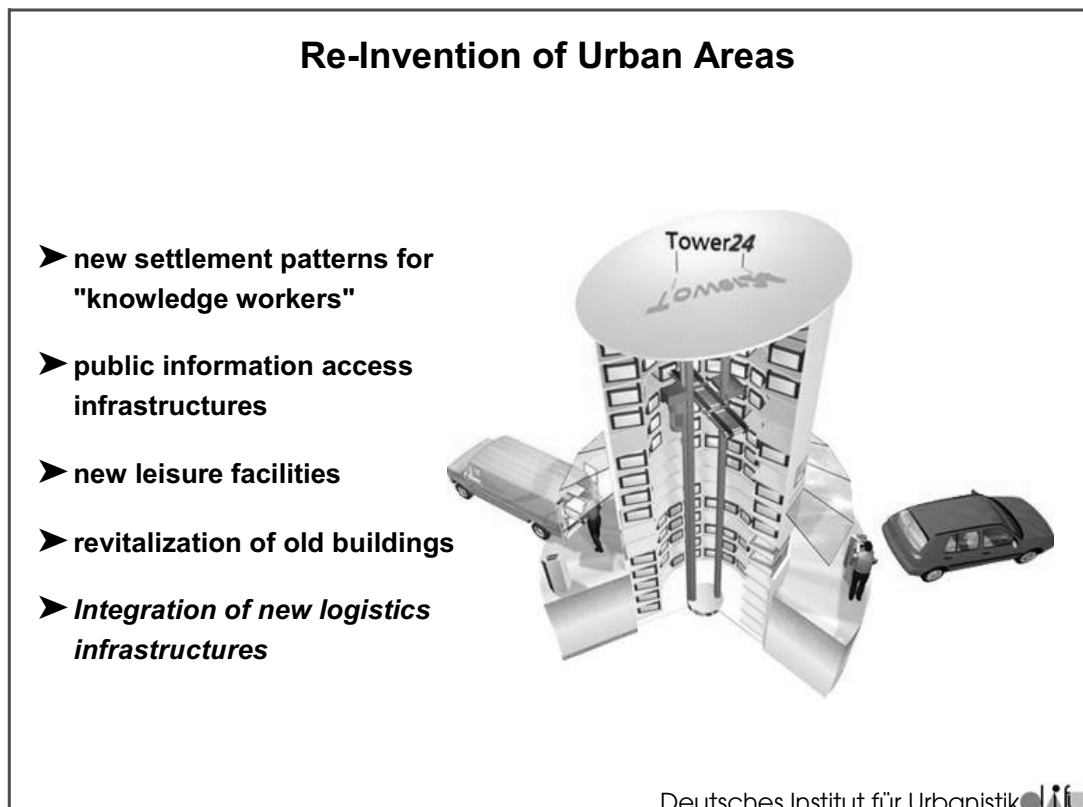


Source (illustration): Zerweck 2001.

- Mix of living and working areas
Some projects attempt to discover new ways to bring living and working areas together again, such as the "Nordwolle", an old spinning mill in Delmenhorst near Bremen in Northwestern Germany. In a public/private partnership the municipality and private developers have constructed new housing areas with telework cubicles and new cultural facilities.
- Integrating educational and training facilities in urban renewal processes
Education and training are becoming increasingly important in an information society where only lifelong learning can guarantee a competitive economy. The "MediaCityPort" in Hamburg is one example of the new institutions which offer this kind of training. The "MediaCityPort" is integrated into the large urban renewal process of Hamburg's harbour front – the Hafencity. The model of "MediaCityPort" has been copied in other German towns and cities.
- New settlement patterns for information processors
Colletta di Castelbianco, a formerly abandoned, now completely restored Italian village, is now a living space for offshore teleworkers from all over Europe. This is an example of this kind of new functional patterns in old spatial structures.

- Public information access infrastructures, new leisure facilities and revitalization of old buildings
 One example of the combination of urban renewal and the development of new leisure facilities is the Lasipalatsi in Finland's capital Helsinki. The start up phase for Lasipalatsi Film and Media Centre was funded by EU Regional Development Fund Urban Pilot Project in 1997-2000. The Project was motivated by the changes of urban information society and the need to bridge the gap of a developing digital divide. Lasipalatsi bridges this gap by bringing together access to the Internet, exhibitions and events, cafes and restaurants, cultural events and information, TV studios and a media shopping centre.
- Integration of new infrastructures for logistics
 Infrastructures for logistics will have to change in the long run. Increases in E-commerce's turnover are linked to an increasing number of parcels containing samples for individual customers. This leads to an "atomisation of consignments" with disproportional transport costs according to the order volume. To prevent a transportation cost explosion logistics experts have developed new decentralized pick-up terminals such as "Tower 24", which works as a pilot scheme for future logistics infrastructures in Dortmund in North Rhine-Westphalia.

Figure 14



Source (illustration): www.tower24.de.

So many good practices – what is missing?

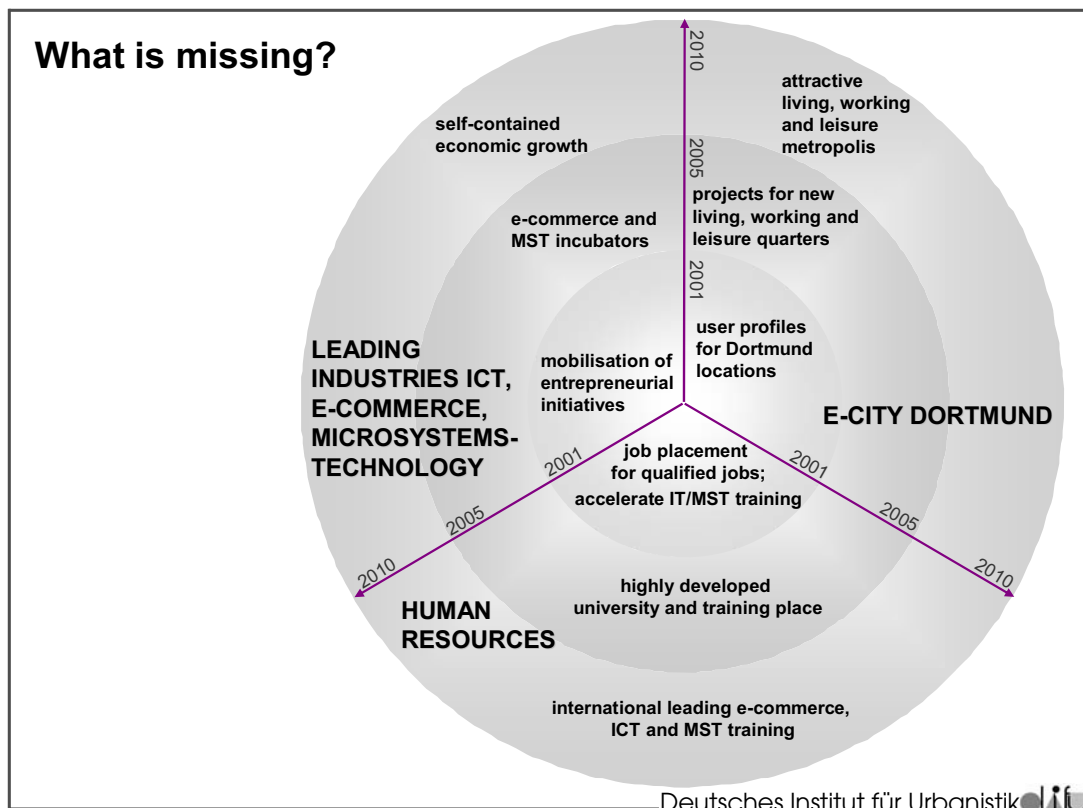
While developing a variety of urban concepts, municipalities should be aware that ICT is very important for urban development. But cities should concentrate on integrating technological aspects into their existing concepts rather than focus only on the technology itself. Mission statements for building attractive cities with social and cultural cohesion should consider that ICT might be helpful for implementing the concepts, but ICT itself cannot change living conditions fundamentally.

These kinds of integrated strategies develop slowly. One example is the "Dortmund-project" which promotes social and economic structural change in a former heavy industry and mining region. This strategy includes:

- The development of new leading industries,
- the development of human resources and
- a comprehensive e-city strategy

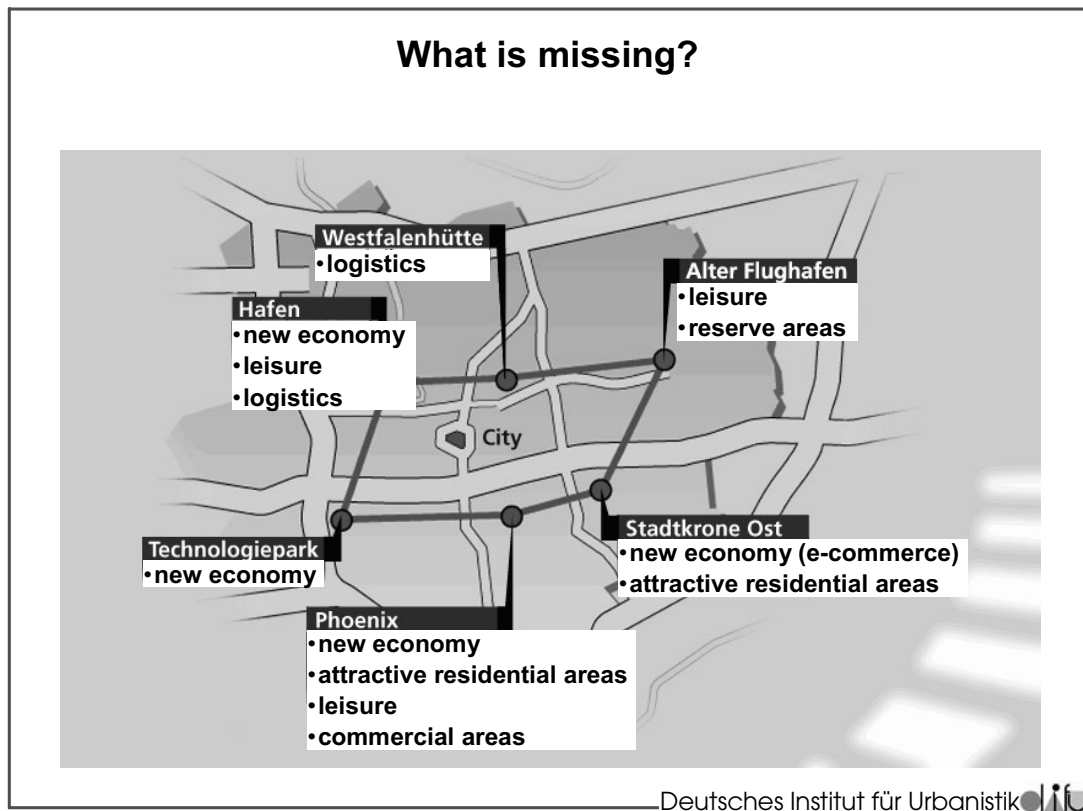
Part of the strategy is a spatial concept of converted areas in the inner city such as into locations for new industries.

Figure 15



Source: Blanke-Bartz 2002 (revised).

Figure 16



Source: Blanke-Bartz (2002) (revised).

What about strategies in other German cities and towns? 91 percent of the large towns with a population of more than 500.000 inhabitants have integrated strategic approaches which include ICT (see figure 17, p. 19). The portion of cities that have integrated strategies drops with lower number in population. In small cities with less than 100.000 inhabitants only 45 percent have developed such strategies. The term "strategy" is fuzzy, i.e. even those cities which have stated that they had an "integrated strategy" sometimes had only a number of activities which they had only declared as "strategic approaches" afterwards.

In conclusion I'd like to draw up some "do's" and "don'ts" for planners who are dealing with ICT and the emerging information society. These statements are based on a research project focusing on spatial planning and the emerging ICT in regional Europe which Difu conducted during the past two years in cooperation with research institutions and municipalities in Britain and the Netherlands as part of the Interreg IIC programme of the European Union (SPECTRE 2002, 23-26).

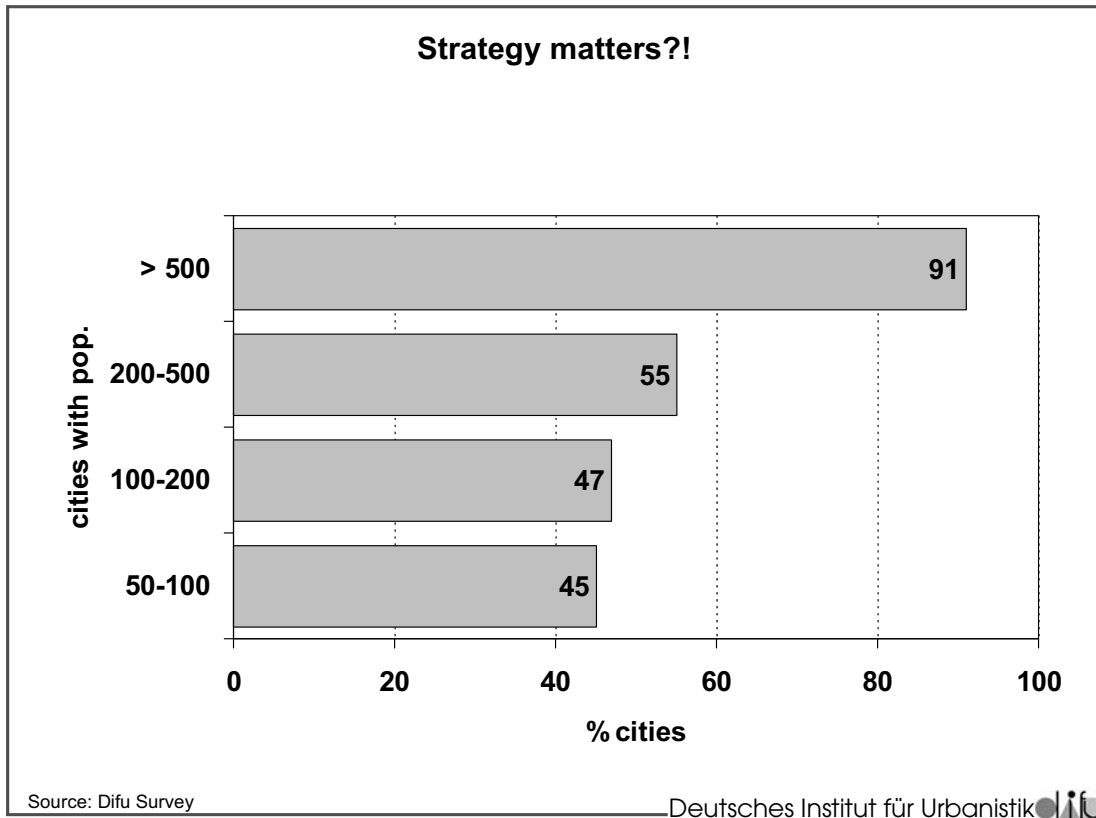
Planning processes are affected by structural changes within the information society in four main fields of action:

- Strategies, policies and plans
- Measuring, mapping and monitoring
- Design, development and implementation
- Partnerships, consultation, participation

- Strategies, policies and plans
 - ▲ Develop a strategic response which provides a framework for ICT developments, and which offers sufficient flexibility to react to technological, economic and social changes. These are also robust enough to cope with "disruptive factors", but do not develop master plans which cannot accommodate change easily, nor do they develop "over-regulations" which hinder changes in society and regional development.
 - ▲ Ensure that planning and domain-specific policies on ICT-related activities do not conflict, nor do they have separate chapters for ICT-related activities – insure that they are integrated, because ICT is a tool for regional development and not a technological gimmick.
- Measuring, mapping and monitoring
 - ▲ Measure the flow of goods, services, transactions, and knowledge, but not only map and monitor the visible "hard" infrastructure of wires and bandwidths, because infrastructure provision is only a necessary but not commensurate condition for ICT adoption
 - ▲ Measure aggregate demand and the accessibility of infrastructure and services, but not merely measuring existing levels of usage and ownership to provide a static analysis, because technological change is a dynamic trend
- Design, development and implementation
 - ▲ Measure ICT-related impacts and results, without attempting to design the "perfect" project or delay implementation, because ICT implementation is a "learning-by-doing"-process
 - ▲ Getting involved and learning through actions and by consulting widely, without losing sight of the results of innovation and best practice by failing to monitor and evaluate, because we do not need to re-invent the wheel. Technological pilot schemes have to consider user demands, social effects and economic viability of applications, and not only technical feasibility.
- Partnerships, consultation, participation
 - ▲ Use existing partnerships to address ICT-related issues, because change depends on motivated players, but they broaden their membership and outlook to encompass new perspectives to avoid "over-embeddedness", nor do they utilise stakeholder involvement which is grounded in earlier spatial relationships which are fixed, because traditional spatial relationships will interweave new spatial relations with cyberspace.
 - ▲ Ensure that ICT is used to widen participation and to engage excluded social groups in spatial planning, without using those ICT techniques which can result in the exclusion of specific interest groups in the community. ICT is originated and developed in a specific social context. It is not an exogenous variable to

which society and individuals must adapt. One key element of ICT development therefore has to be the social embeddedness of the technology.

Figure 17



One of the main difficulties examining the relationship between ICT and urban development is the invisibility of ICT. For the common user, ICT is like electricity – it comes out of the socket but one is not very interested in where it comes from. This applies just as well to the Internet, not to mention cellular telephones. The new interwoven patterns of the material and the virtual have scarcely been "uncovered" up to this point. The "object of investigation" is difficult to discover. Usually we are treating "space as the domain of the dead, the fixed, the undialectic, the immobile – a world of passivity and measurement rather than of action and meaning" (Soja 1989, 37) as Edward Soja stated. But we will have to deal with increasing flexibility in using space, as well as the quickening pace of change in land-use patterns.

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