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Changing Urban Housing Markets in Advanced Economies
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Abstract

For decades, the main distinguishing feature of urban housing markets in advanced economies has been suburbanization. Many people with middle and higher incomes have left the city and settled in the suburbs. The spending power associated with the city centre is lost to the suburbs, which have become increasingly prosperous. The Americans have a word for the legacy of this trend. They call it the 'doughnut city': empty buildings, derelict areas, crime, and vandalism in the centre; and wealth, happiness, and family life in the suburbs.
In the post-industrial arena, we can observe a process of re-urbanization which is leading to a revival of the urban economy. This revitalization can be explained by the transformation from industrialization to knowledge-intensive business services stimulated by the ICT revolution.
In this paper we examine the different views and the evidence on the impact of ICT on housing functions and on urban configurations. We contend that a change is occurring in the temporal and spatial relationship between housing and employment and that network cities and urban networks seem an obvious perspective for many urban areas in the decades to come.
We describe this strategic urban transformation and the changing urban housing markets and present the approach adopted by the British and Dutch governments: urban restructuring and re-differentiation of the housing stock in less popular urban districts. We sketch the impact of the changing urban economy for urban planners and housing officials. As a result of urban revitalization we see new opportunities for urban housing markets and urban developments, and new challenges for urban and housing policies.

1. Introduction

For decades, the main distinguishing feature of urban housing markets in advanced economies has been suburbanization. Many people from middle- and high-income groups have left the city centre and settled in the suburbs. Spending power has shifted from the city centre to the suburbs, which have become increasingly prosperous. The Americans have a word for the legacy of this trend. They call it the 'doughnut city': empty buildings, derelict areas, crime and vandalism in the centre; and wealth, happiness and family life in the suburbs (neatly depicted in the movie *American Beauty*).

It was Garreau (1991) who discovered the edge city: booming localities where new city centres emerged with concentrations of businesses and housing, and creating polynuclear urban regions. This might be a new phenomenon in the USA and Australia, but in large parts of Europe it suggests a revival of traditional urban patterns like the Randstad Holland, the Flemish Diamond, the Rhine-Ruhr Area and the British Midlands. None of these regions has a dominant central city. On the contrary, a number of medium-sized cities developed here with an intensification of relations as a result of an increase in the scale of housing and labour markets, transport and communication.

In section 2 we trace the development of urbanization in advanced economies in recent centuries and conclude that a revival of the urban economy is taking place. In section 3. We investigate the impact of ICT on the homes. In section 4 we deal with the relation between ICT and urban form.

How is the changing urban economy impacting upon urban housing markets and urban planners? This is the theme of section 5 and 6. We present the approach which is adopted by the British and the Dutch government: urban restructuring and re-differentiation of the housing stock. In the final section we add some comments and draw some conclusions. The transformation of urban economies is creating new opportunities for urban housing markets and urban developments, and new challenges for urban and housing policies.

2. Urbanization, suburbanization and de-urbanization

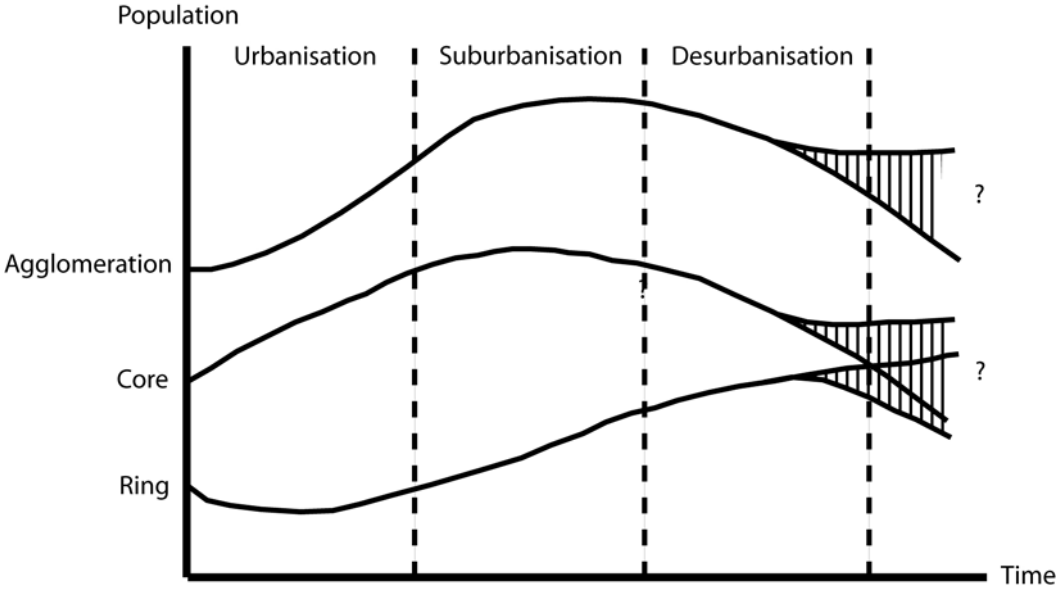
Since the second half of the nineteenth century, industrialization has been changing the face of society and the city. The extended family was replaced by the nuclear family, the *laissez-faire* state changed to the welfare state, and the development, first of trains and then cars, stimulated mobility. These changes led in turn to the process of suburbanization: density decreased in urban areas and the size of the urban realm increased. A rapidly increasing proportion of the population lived in urban areas, while the rural population declined as a result of the declining employment in agriculture. In terms of land use, multi-functionality turned into mono-functionality: housing, business, transport, and leisure became increasingly separated in place and time. People commuted over longer distances, but better transport meant that they did not have to spend more time travelling.

Two major studies on European urbanization at the start of the 1980s (Hall and Hay, 1980; Van den Berg *et al.*, 1982; 1983) concluded that, after a long period of urbanization, a new stage had been reached, which was characterized by

suburbanization and even de-urbanization (or, as Van den Berg *et al.* (1982) put it, 'desurbanization'). For instance, in the Netherlands, there was increasing spatial deconcentration after 1965, marked by mass exoduses from many cities. In the biggest cities in the Randstad – Rotterdam, Amsterdam, and The Hague – this process reached such proportions that, after 1970, it affected the entire agglomeration level (Van den Berg *et al.,* 1983: 408). All the urban systems around the biggest cities were losing out to systems based on smaller cities within the same region. Exactly the same process was observed in South East England, where London lost out to a belt of 20-30 smaller cities within a radius of up to 80 kilometres (Hall, 1998).

In Figure 1, Van den Berg *et al.* (1983: 409) trace the various phases of urban development: urbanization, suburbanization, and desurbanization (de-urbanization); (see also: Priemus & Hall (forthcoming)).

Figure 1. Phases of urban development



Source: Van den Berg *et al.,* 1983: 409.

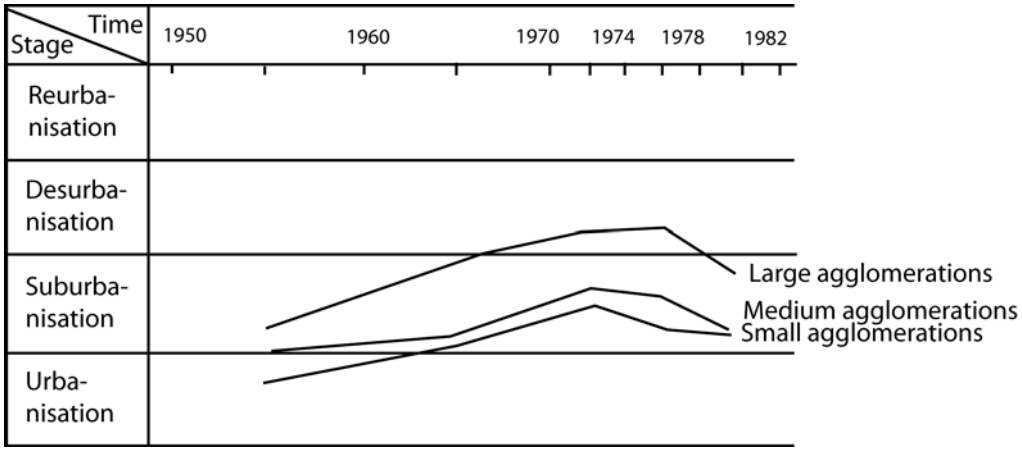
The classification into phase refers to the development of the functional urban regions or agglomerations, derived from the American concept of the Metropolitan Statistical Area. In the Netherlands, an agglomeration consists of a core municipality and a ring of one or more edge municipalities. In 1971, at least 15% of the working population residing in edge municipalities commuted to their core municipality. The phases are defined as follows (Van den Berg *et al.,* 1983: 409):

- *urbanization* is said to take place when the population growth of the core is greater than that of the ring and the population of the agglomeration grows as a whole;
- *suburbanization* is said to take place when the population growth of the ring is greater than that of the core and the population of the agglomeration continues to grow;

– *de-urbanization* is said to take place when the decline of the population of the core leads to a decline in the population of the agglomeration;
– *re-urbanization* is said to take place when, with a declining population in the agglomeration, the share of the core population in the total population of the agglomeration again increases.

It appears that, in the Netherlands, the development in the big city regions of Amsterdam, Rotterdam, and The Hague preceded that of the regions with a smaller core. Figure 2 shows how the direction of urban development turned around in the period between 1970 and 1974 (Van den Berg *et al.*, 1983: 412).

Figure 2. Phases of urban change in the Netherlands from 1950/1960 through 1978/1982 according to size



Source: Van den Berg *et al.,* 1983: 412

Between 1950 and 1974, urban development in the Netherlands was characterized by increasing spatial deconcentration. Urbanization shifted to suburbanization and de-urbanization. Van den Berg *et al.* (1982, 1983) explain the observed urbanization phenomena in terms of rising prosperity, the expectation that prosperity would continue to rise, the relatively cheaper transport costs, and the enhanced range of housing choice opportunities for the (better-off) urban population. There were also some push factors at work: deterioration in the quality of housing in some older city districts, rising crime in certain inner city areas, and greater environmental awareness.

But, since the 1970 - 1974 period, urban development has moved in the opposite direction, towards reconcentration. Van den Berg *et al.* (1982, 1983) explain the intensification in the concentration movement that took place from the mid 1970s by referring to the energy crises of 1973 and 1978, which triggered steep increases in energy costs. 1978 - 1982 was a period of economic stagnation accompanied by high inflation. During this period, urban regeneration policies were developed in many cities. A similar trend was underway in the UK, with the Inner Cities White paper of 1977 and the Inner Urban Areas Act of 1978. Van den Berg *et al.* (1983) asked themselves whether there was any sign at that time of a fundamental urban revival.

Van der Vegt & Manshanden (1996) presented their analysis of the development of the urban economy in the Netherlands between 1970 and 1995. They showed that in this period the surrounding regions grew more strongly than the central cities, with the exception of the region around Zwolle, where the situation was reversed. After a temporary revival of the central cities in 1978 - 1982, the process of suburbanization continued in the Netherlands until well into the 1990s, in spite of the considerable urban regeneration efforts undertaken since the 1970s. Thus, no claim could be made for a Dutch urban renaissance. Similarly, the latest evidence from the UK shows ongoing and sometimes dramatic declines in the population and employment in the big cities between 1991 and 2001; Manchester, for instance, lost 10% of its population (G.B. O.D.OP.M., 2002). The sole exception was London, where, after forty years of decline, the population started rising again in 1983. Between 1981 and 2001 London's population grew by 366,500 (5.4%) to a total of 7,172,000.

Table 1. Strategic indicators of change, UK, 1991-2000

	% change population 1991-2000	% change employees index 1991-2000	% point change unemployment index 1991-2000	% change GDP per capita 1991-2000
Inner London	9.39	26.2	-6.28	4
Outer London	5.59	20.9	-3.95	2
Principal cities	-0.48	8.4	-6.50	-4
Other 'metropolitan' authorities*	-0.19	12.0	-4.87	-2
Large cities	0.78	8.9	-6.38	-2
Small cities	5.15	10.4	-5.08	-3
Industrial areas	1.47	12.8	-3.95	-2
New towns	3.49	22.3	-4.34	-1
Resorts	5.24	14.8	-4.16	-2
ENGLAND	**3.71**	**17.6**	**-4.33**	**0**

* local authorities in 'metropolitan areas', i.e. conurbations.

Source: G.B. O.D.P.M., 2002

Table 2. Census 2001: English Cities 1991-2001

City	1991	2001	Change 000s	Change %
London	6,889.9	7,172.0	282	4.1
Newcastle	278.2	259.6	-19	-6.7
Manchester	438.5	392.8	-46	-10.4
Liverpool	480.7	439.5	-41	-8.6
Leeds	717.4	715.4	-2	-0.3
Sheffield	529.3	513.2	-16	-3.0
Birmingham	1,006.5	977.1	-29	-2.9
6 Metro Cities	3,450.6	3,297.3	-153.3	-4.4
Bristol	397.0	380.6	-16	-4.1

Source: G.B. O.D.P.M., 2003

The new urban reality is that in many areas of Europe, processes of concentrated deconcentration have produced a new urban configuration, the mega-city: a cluster of up to 40 or 50 cities constituting a networked urban region with up to 20 or 30 million people, drawing huge economic strength from a new functional division of labour, and connected by dense flows of people and information along motorways, high-speed rail lines and telecommunications systems. This phenomenon has been identified in the Pearl River Delta and Yangtze Delta Regions of China (Hall, 1999; Hall and Pfeiffer, 2000). In Europe, new studies suggest that the Central Area of North-West Europe, incorporating the Delta Metropolis and Rhine-Ruhr areas, is also a mega-city with a total population of 37 million (Anon, 2002), characterized by functional divisions of labour between city units in a highly networked region and by intensive development along transportation corridors (Ipenburg *et al.*, 2001). The people in such regions appear increasingly indifferent as to which cities they relate to (Kloosterman and Musterd, 2001); the 'space of flows' (Castells, 1989) becomes extremely complex. Alan Scott has dubbed the largest of such areas the 'Global City Region' (Scott, 2001); this proposal builds on his pioneering work. We think it is more accurate to refer to such an area as a *Global Mega-City Region*.

People still interpret space largely on the basis of the spatial categories of 'city' and 'countryside'. But that categorization does not take account of the fact that the government can also produce this symbolic space in physical and social terms.

3. ICT: implications for homes

Decades ago, people were already predicting that the growth of ICT would have profound spatial effects. Some believed that ICT spelled the 'death of distance' (Cairncross, 1997) and a wider geographical spread because more households and businesses would become footloose. Others thought that ICT would primarily stimulate the business services and hence re-invigorate the urban economy. A middle

standpoint was adopted by authors such as Castells (1989) and Sassen (1991), who forecast a combination of geographical concentration and deconcentration: a concentration of front offices and the supporting business services and a spread of back offices.

If we focus first on the implications for the home, we must begin with the potential effects of ICT on the time-space budget of individuals and households. Industrialization brought a temporal and geographical division between home and work. Vance (1966) reminds us that things were different in the pre-industrial era: then, work and home were integrated (farms, workplaces, shops) and working time and spare time were closely intertwined.

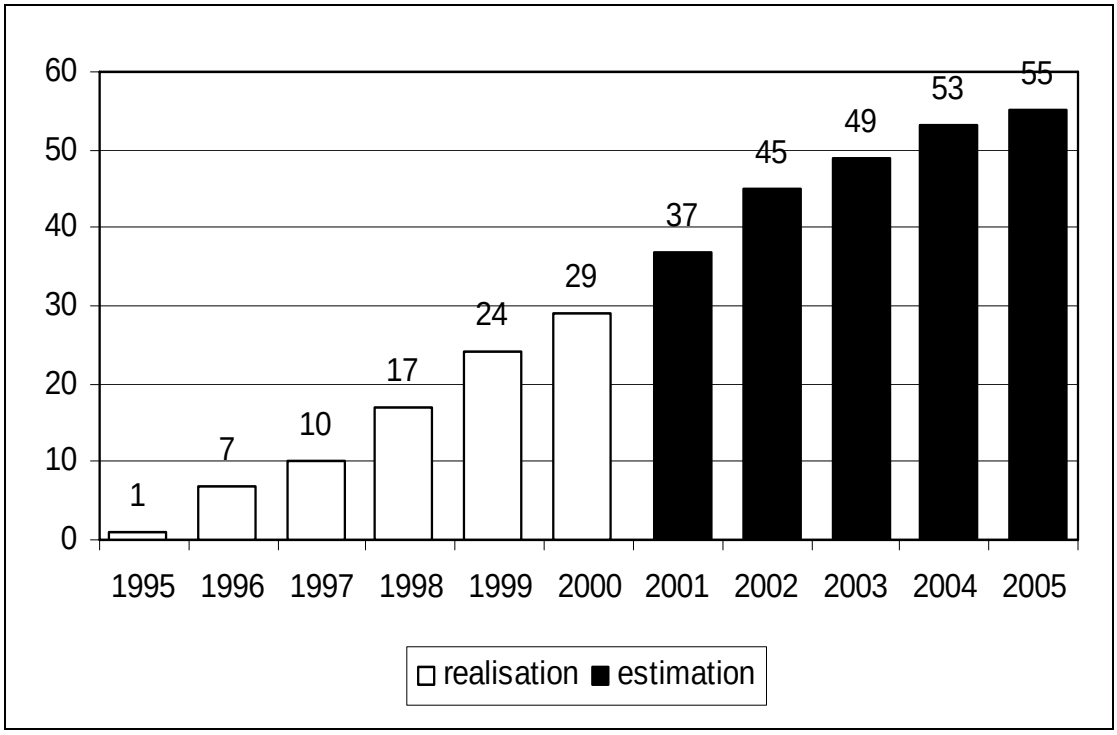
It is conceivable that the post-industrial era – being geared to knowledge and services – will reintegrate the temporal and geographical aspects of home and work. This would mean that more and more work will take place in the home and more and more household life will take place outside the home.

Toffler (1980: 204) remarked as early as 1980 that "... we are about to revolutionize our homes ...", because new computer-supporting production techniques would introduce new functions to the home. The Second Wave (industrialization) moved millions of jobs from the home to the factory. The Third Wave (the information revolution) will bring these jobs back to the home from the factory and the office.

Toffler, (1980: 204) suggests that the new production techniques will lead to "a return to cottage industry on a new, higher, electronic basis, and with it a new emphasis on the home as the centre of society". Toffler envisages a transformation from house to 'electronic cottage'. Here, households will form not only a living unit but a working unit as well. The 'electronic society' is leading to a 'home-centred society', according to Toffler.

Meantime, we are observing strong growth in the use of the Internet in the Netherlands and worldwide. In 1997, 10% of the Dutch population had Internet access. In 2000 this figure had risen to 29% and it is expected to rise to 55% before 2005.

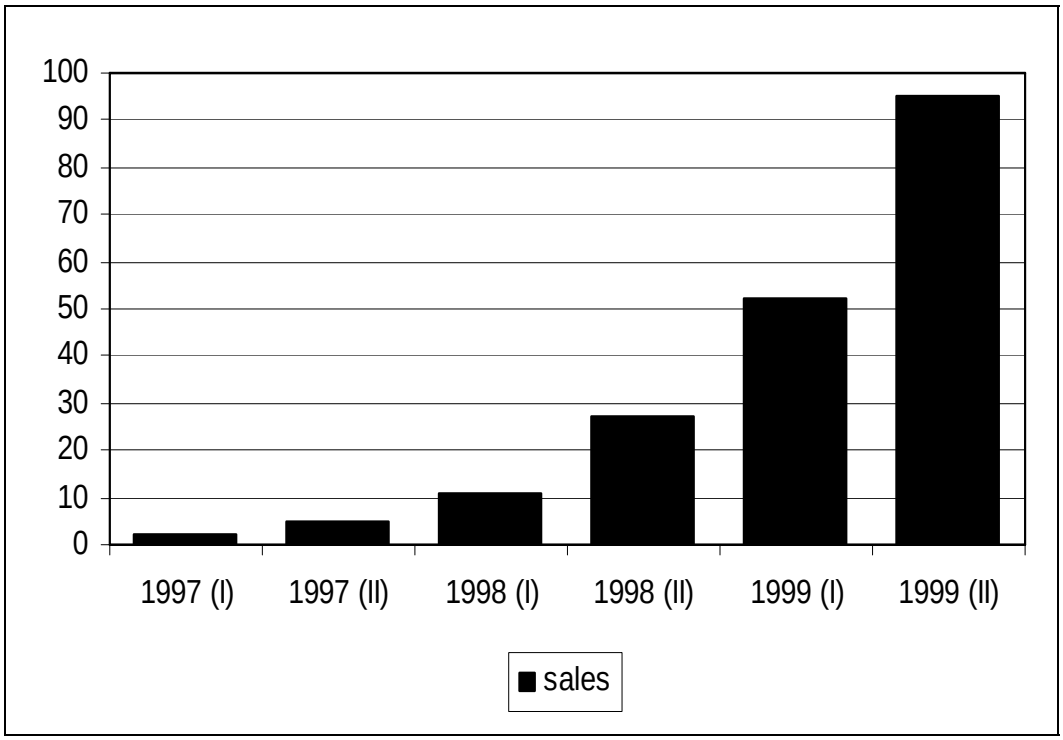
Figure 3. Internet use in the Netherlands (as a percentage of the total population)



Source: Stec Group, 2000.

Forrester Research (2000) predicts that in 2005 more Europeans will be on-line via the TV than via de computer. Booz, Allen & Hamilton (2000) forecast that in 2003 80 million mobile phones in Europe will be connected to the Internet, partly as a result of ADSL (Asymmetric Digital Subscriber Line).
Dutch households use the Internet for E-mail (85%), searching for information (62%), surfing (61%), downloading (57%) and reading the news (50%). Businesses use the Internet for E-mail (75%), collecting information (62%), downloading (39%), reading the news (38%) and searching for information (32%) (Stec Group, 2000: 13).

Figure 4. On-line sales in millions of euros, per half year in the Netherlands



Source: Blauw New Media Consulting, quoted in Stec Group, 2000.

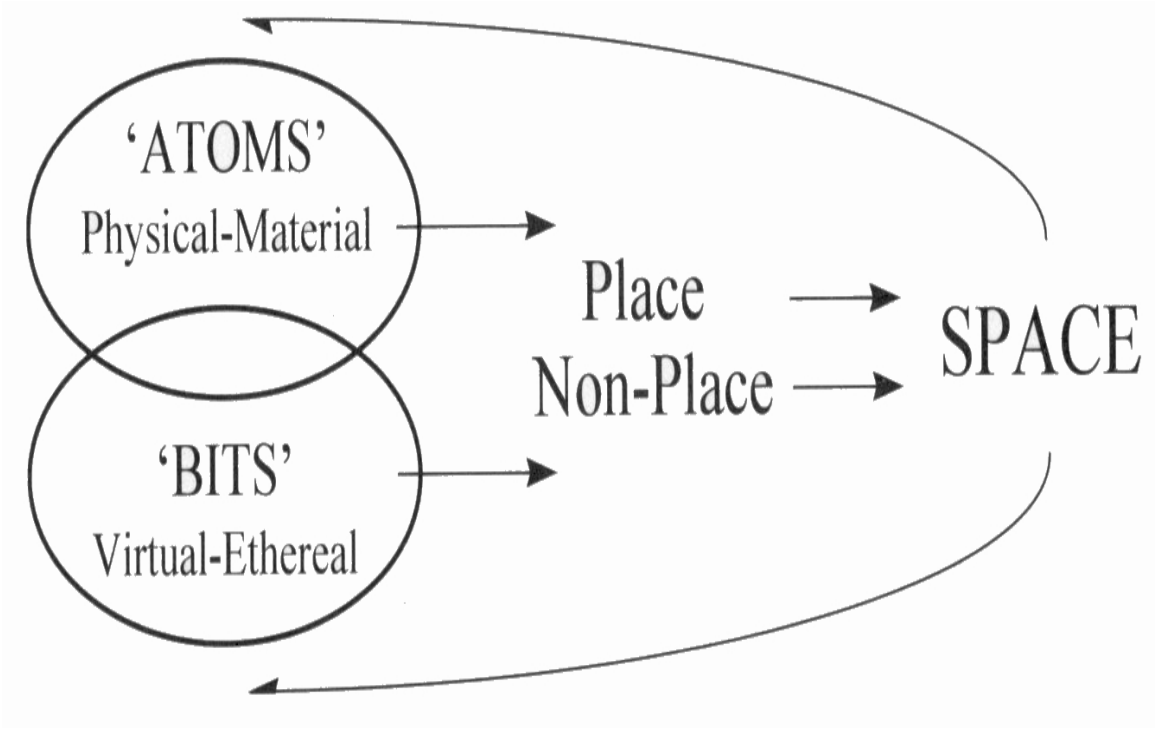
Figure 4 shows the growth of on-line sales in the Netherlands since 1997. This growth is closely related to the rise in the number of active Internetters. In June 1999 there were 1.5 million active Internetters in the Netherlands, 400,000 of whom made purchases on-line.

One interesting innovation is *Woongemak* (Housing Comfort), a system which is installed in 700 homes on the Java Island in Amsterdam. At the heart of the system is the 'Bode', a sophisticated tool with a TV screen and a printer than can be linked to a camera at the front door. The residents order their shopping and services via the TV screen. Real estate investor Vesteda has taken out majority interest in *Woongemak* (Stec Group, 2000: 61) and is trying to extend it widely, targeting the top segment of the market.

High-income groups, males, young people, highly qualified people, employed people and white people are still over-represented in the Internet users (Van Dijk *et al.*, 2000), and have even prompted some people to refer to the World White Web (Bolt & Crawford, 2000). With access thresholds getting lower all the time, Van Dijk *et al.* (2000) do not foresee a digital divide in the future. Among recent users, women, the elderly and people with low educational levels are over-represented. Other authors take the view that the digital divide will remain and that there will always be a group which is not on-line and will therefore miss development opportunities. This could widen existing socio-economic differences.

Batty & Miller (in: Janelle & Hodge, 2000) put forward the theory that the worlds of atoms and bits will have to be combined and that, at the same time, individuals will be part of real (place) and virtual (space) networks (see Figure 5).

Figure 5. Geographical abstraction of physical, virtual and hybrid worlds



Homes and offices are the most important nodes that bind the virtual and the real worlds. Living in two worlds at one and the same time is bound to affect the household's time-space budget. An increasing fragmentation will develop in the behaviour of individuals and households in terms of space and time (Couclelis, in: Janelle & Hodge, 2000): we are heading for a zap culture.

As the growing trend towards individualization causes the telephone, the PC and the TV to become more subjected to individualized use, the notion that 'number of households = number of homes' will gradually disappear. The home will assume more and more E-tasks, like e-working, e-banking, e-learning, e-shopping and e-conferencing. Some of these activities belong in the traditional consumer patterns of the home (e-shopping and e-banking), but others are mainly associated with productive functions (e-working, e-conferencing). Years ago, Vlek (1986: 41) was already asking: Do people work at home, or do they live at the office?

The home is being steadily transformed into a centre of consumption and production. This is also true of the car and long-distance public transport (trains, aeroplanes). Households that can afford it want more than one place to live. In addition to the home, people live and work in the second house out-of-town or abroad, the temporary leisure apartment, the hotel, the lounge and the conference centre. Fragmentation of time seems to go hand in hand with a fragmentation of space. Here, the push factors are higher costs, time loss, and irritation in the tailbacks during the rush hour and the pull factors are lower costs, the size of chips and computers and better ICT infrastructures.

Sui (in: Janelle & Hodge, 2000: 116) observed that for several years people have been accessing the Internet more often from their homes than the (official) workplace. This data tallies with empirical material on Internet use in Canada (Harvey & Macnab, in: Janelle & Hodge, 2000).

Table 3. Location of Internet access in Canada, September 1998

Location	Percent using Internet
Home	26
Work	14
School	6
Other	7

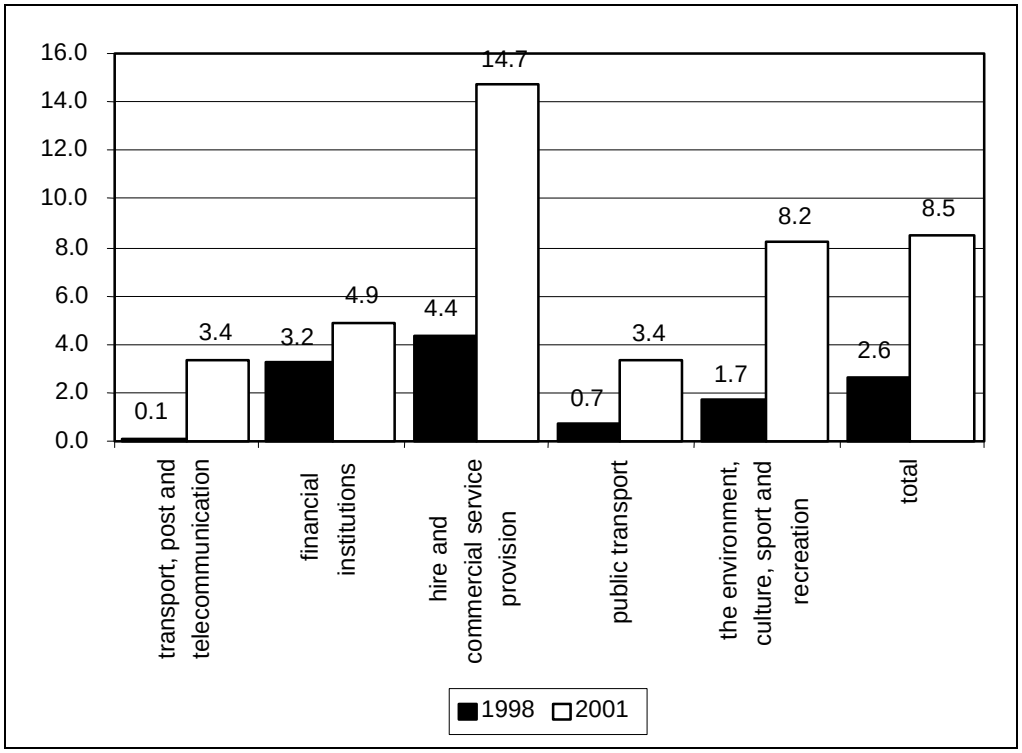
Source: Harvey & Macnab, in: Janelle & Hodge, 2000.

Activities are tied less to locations and more to individuals because of mobile phones and laptops amongst others. More and more people are working one or two days a week at home (Vlek, 1986; 1987) so that they can avoid traffic jams and concentrate better on specific tasks.
Working at home can be defined in terms of:
- the place where the work is done;
- the legal status of the individual: employee, freelancer or self-employed;
- the nature of the work: traditional or teleworking;
- the duration and frequency of the work.

This is related to the well-known triple classification of Felstead & Jewson (1997):
- work conducted at home (home-based worker);
- work conducted from home (the home is the start base, applies especially to mobile workers);
- work conducted in the same ground and buildings as the home (such as a retailer who lives above the shop).

Figure 6 shows the number of teleworkers per sector:

Figure 6. Share of teleworkers per sector, 1998 and 2001 (in %)



Source: Research voor Beleid [Research for Policy], 1999.

Some sectors, such as hospitality, healthcare and the building trade, do not lend themselves to teleworking. The percentage of teleworkers is especially high in business services.

These trends have profound implications for the home. The Stec Group (2000: 53) anticipates a steep rise in the demand for housing in an attractive residential environment. The Stec Group believes that, in the future, the choice of housing will be determined less by the (official) workplace and more by the quality of the property. One important consideration – especially for double earners – is the number of jobs that can be covered from the home. The Randstad and Central Netherlands score high on this count; suburban areas are especially popular.

The home will have to be able to accommodate one or more computers with an Internet connection, one or more TVs, a fax and mobile and non-mobile phones. Though the actual appliances are getting smaller all the time, usage still requires a lot of space and could have an enormous impact on levels of energy consumption (Kersten, 2001).

Many people want an extra room next to the living room, so that they can work in peace. The children's rooms need to be suitable for self-study and computer use. The Dutch Building Decree sets no requirements in this respect. Relatively few family homes have both a living room and a study on the ground floor.

Eighty percent of self-employed people in the Netherlands start up their business in their own home. A small but interesting group of house-seekers wants a house with in-built or adjoining facilities where they can receive customers and provide services (Louw, 1999). These demands can also have implications for the local parking space.

At any rate, the home needs to offer plenty of possibilities for working at home and for computer use by each member of the family. This makes heavy demands on space, energy, sound insulation, and the general lay-out.

4. The impact of ICT on urban form

Since the last decades of the twentieth century, the cities seem to have been entering a new stage of development. The transformation from a manufacturing-based to a service-based economy, coupled with the rise of telecommunications, has had a deep impact on urban dynamics and urban form. However, the opinions of researchers differ with respect to the nature of this impact. The diverse theories can be clustered under three basic headings:

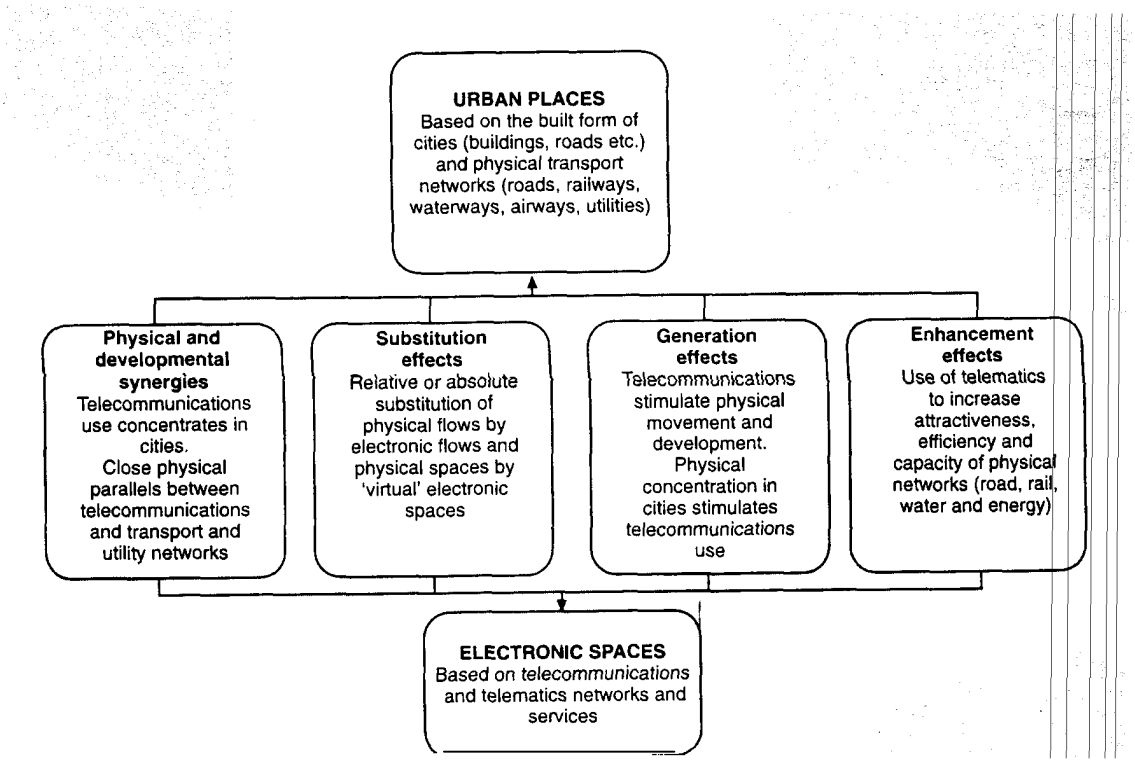
1. ICT makes businesses footloose. This entails a revolutionary decentralization, which is a threat to the urban economy. The city will explode and spread over a very large area. This theory is supported by Toffler (1980), Negroponte (1995), and Cairncross (1997). Campanella, 1998: "McLuhan repeatedly announced the obsolescence of the built city in the electronically-mediated labour market." Gilder (1995) even described cities as "leftover baggage from the industrial era".
2. ICT stimulates a spatial concentration of economic centres in a number of selected cities, where we observe a rapid increase in business services that need face-to-face contact. This concentration leads to a league of world cities (Castells, 1989; Sassen, 1991; 1995; Hall, 1996); these are the hubs in global communication, financial transactions and air travel. So, on balance, ICT leads to geographical concentration.
3. ICT stimulates geographical centralization and decentralization at one and the same time. This promotes the development of urban networks, or network cities (Townsend, 2001; Warf, 2001). A polynuclear dynamic collection of cities, most of them small or medium-sized, can be observed within large urban regions. Cities develop at the nodes of traffic infrastructure, ICT, energy, water and gas with growing differences in the accessibility of infrastructures (Graham & Marvin, 2001).

The Dutch Fifth Policy Document on Spatial Planning (Ministry of Housing, Spatial Planning and the Environment, VROM, 2001) mentions the possibility of ICT having a spatial impact because more and more businesses are becoming footloose. This points the reader in the wrong direction. Recent international literature (Graham & Marvin, 1996; Townsend, 2001; Warf, 2001) emphasizes that ICT applications actually strengthen the urban economy. The cities, in particular, appear to be benefiting from ICT infrastructure and applications. In many ways telematics are the engine that drives urban change (Graham & Marvin, 1996).

In post-industrial economies a strong increase can be discerned in business services in economics and employment and a further decline in agricultural and manufacturing jobs. Services come off best and can be classified as 'business' or 'consumer' services. The business sector is characterized by highly qualified, well-paid employees offering services in insurance, banking, law, accountancy, real estate and research & development. In the consumer services sector there are a lot of jobs that require only a basic education and which are relatively poorly paid. This applies to, for example, catering staff, cleaners, nurses and carers, security guards and taxi drivers. The disparity in income is widening everywhere due to the economic restructuring processes in the post-industrial era. Some authors (Sassen, 1991;

Castells, 1989) even speak of a 'disappearing middle' in the urban employment market.
More and more authors are establishing a connection along different lines between spatial and telecommunication developments (see Figure 7) (Graham & Marvin, 1996: 328).

Figure 7. Typology of relationships between 'urban places' and 'electronic spaces'



Source: Graham & Marvin, 1996: 328.

The effects fall into four types: substitution, generation, enhancement and developmental synergies. ICT can be a substitute for traffic movements or it can generate them. ICT networks can be an attractive location for knowledge-intensive businesses. As the backbones are geared to the large cities, ICT nodes can directly attract businesses which need a high-capacity electronic highway in the immediate vicinity in order to survive.
In general, what we are witnessing is a shift from hierarchical command structures and free markets to network relationships with less hierarchy and changing combinations of partnership and competition (Castells, 1996). At first glance it looks as if network societies and network economies lead to network cities, but this line of argument is too simplistic. We can, however, observe a fragmentation in time and place as a result of the use of telecommunications and, probably, a redefined relationship between time and place (Cairncross, 1997).
Townsend (2001) recently researched the spatial effect of Internet use and discovered 'an overwhelmingly metropolitan dominance of Internet activity and

infrastructure' (Townsend, 2001: 41). He argues that a new theoretical framework is needed in order to understand the employment market implications of the urban development in relation to the development of ICT networks.
Townsend (2001: 42) concludes "that cities are clearly prosperous in the digital economy (...). (M)ost US cities are more vibrant than they have been in decades".
Townsend (2001: 42): "A new network of networked metropolitan regions is emerging, capitalizing upon the continued importance of face-to-face contact in business and social life, yet increasingly using telecommunications systems to overcome traditional geographic barriers to: (1) access global information sources; (2) market and distribute highly specialized knowledge products on a global basis; and (3) support ever-sprawling urban forms."
Townsend (2001: 43) sees the spatial aspect of the network city as the main organizational concept. In the USA Internet activities appear to concentrate in large metropolitan areas.
Table 4 lists the cities in the USA with the largest percentages of population on-line (Janelle & Hodge, 2000).

The cities with the highest scores are San Francisco, Miami, Houston, Seattle, Washington DC and San Diego.
Townsend (2001: 51-52) studied the density of the domain names per 1,000 residents and concluded: "In general, medium-sized metropolitan areas dominate as large and dense centers of Internet activity."
Townsend (2001: 54): "In contrast to the traditional global city, the network city is typically a medium-sized metropolitan area with excellent access to high-capacity Internet backbone networks and possessing a broad-based diffusion of Internet activity throughout its highly educated population."

Table 4. America's most wired-up cities. Top US cities ranked according to the percentage of population online (1977)

Metropolitan Statistical Area	Percentage Online
San Francisco Bay Area CA	72
Miami FL	67
Houston TX	65
Seattle/Tacoma WA	65
Washington DC	64
San Diego CA	64
Cleveland/Akron OH	62
Atlanta GA	61
Dallas TX	60
Philadelphia PA	60
Sacramento CA	59
Los Angeles CA	59
Chicago IL	58
New York NY	58
Phoenix AZ	57
Boston MA	57
Denver CO	55
U.S. as a nation	55
Detroit MI	52
Minneapolis/St. Paul MN	52
Pittsburgh PA	49

Source: CyberAtlas, Inc.

Table 5 shows the top ten US urban regions ranked according to backbone capacity, the yardstick that Moss & Townsend (2000) consider most relevant.
Seven urban regions alone deliver 62% of the backbone capacity of the USA: San Francisco, Washington DC, Chicago, New York, Dallas, Los Angeles and Atlanta (see Table 5).
Moss & Townsend (in: Janelle & Hodge, 2000: 182) find that the most striking aspect is that most of the backbone capacity in the seven urban regions in America is used to connect these regions or to supply services within the region rather than for external connections.

Table 5. Top 10 metropolitan areas ranked in order of backbone capacity

Metropolitan area	Percentage of total national backbone capacity	Total inter-metropolitan backbone capacity (in Mbps)
San Francisco/Silicon Valley	11.6	7,506
Washington DC	10.4	7,826
Chicago	9.8	7,663
New York	9.7	6,766
Dallas	7.1	5,646
Los Angeles	6.7	5,056
Atlanta	6.6	5,196
Denver CO	3.7	2,901
Seattle WA	2.5	1,972
Houston TX	2.4	1,890

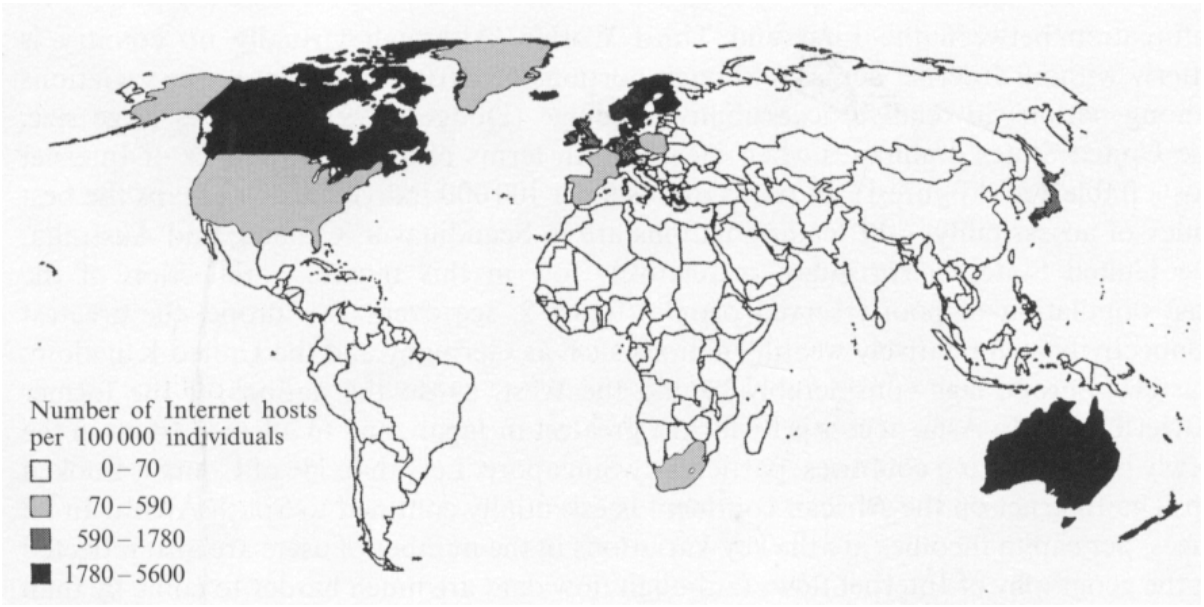
Source: Moss and Townsend 2000.

The ICT landscape in America is dominated by a limited number of cities and urban regions. This is at odds with the predictions of Toffler (1980) and Negroponte (1995), who said that ICT would actually lead to a radical decentralization of the population and the economy. The shape of the ICT infrastructure is, to a large degree, geographically determined. Hence, cities such as Atlanta, Chicago and Dallas unequivocally act as hubs. Moss & Townsend (2000): "Just as the Interstate Highway System transformed urban development in 20th-century America, the Internet will help shape urban activity patterns in the 21st century."

In terms of spatial spread Internet use is specific in various respects. Warf (2001, 3): "Internet creates and reflects a distinct spatial structure interlaced with, and often reinforcing, existing relations of wealth and power."
Figure 8 shows the international spread of the number of Internet hosts per 100,000 people. The density is greatest in Scandinavia, Canada and Australia, followed by the US. Asia scores low with the exception of Japan and Singapore, while only South Africa is discernible in the African continent. Central and South America scarcely figure at all (2001: 8).

If we take the absolute number of Internet users as our reference point, then North America heads the list (137 million, March 2001), followed by Europe (83 million) and Asia + Pacific (69 million). The scores for South America (11 million) and Africa (2.6 million) are very low.

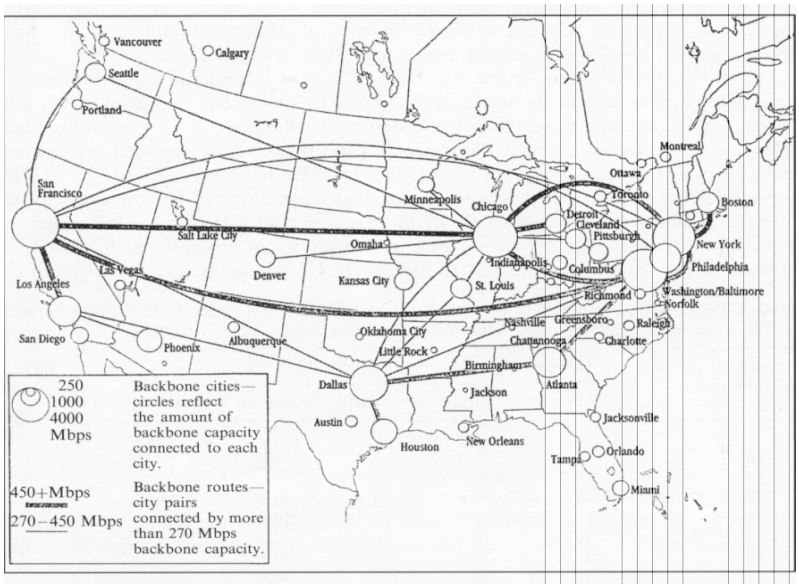
Figure 8. The number of Internet hosts per 100,000 persons, January 1999



Source: Warf, 2001: 8.

As we saw, spatial inequality also exists in the United States, perhaps because private providers of ICT infrastructure prefer to target large metropolitan regions and ignore the less lucrative rural areas. Warf (2001: 12-13): "Since its inception (...) the very architecture of the Internet has revolved around a handful of nodes that route Internet traffic, all of which have been clustered in cities of academic or governmental significance."
This is illustrated in Figure 9.

Figure 9. High-capacity Internet lines in the United States, 1997



Source: Warf, 2001: 13.

Warf (2001: 13): "The resulting patterns of service provision became steadily restructured by corporate Internet Service Providers in partnership with backbone providers (such as AT&T, MCI Worldcom, and Sprint), generating a geography centered largely on large metropolitan areas, whose concentrations of affluent users generate economies of scale that lead to the highest rates of profit."
So, the countryside gets a rough deal because of the policy of private providers of IT infrastructure. Warf (2001: 14): "Low-income rural regions have replaced low-income inner cities as the least-connected places within the United States."
Moss & Townsend (in: Janelle & Hodge, 2000: 171) summarize their findings as follows: "Our research suggests there is a metropolitan dominance of Internet development by a handful of cities and regions. We identify and describe an emerging structure of virtual hubs and pathways which are linking a set of major cities in the United States, suggesting that there is a complex emerging inter-urban communications network that goes far beyond Castells' (1989) informational mode of development."

We conclude that the cities, in particular, are doing well out of the new job opportunities in the past years. This observation is borne out by recent regional economic figures published by Statistics Netherlands. Many Dutch cities have experienced strong economic growth in the past few years: not just cities in the north such as Amersfoort, Almere and Amsterdam, but also cities in the weaker south including Zoetermeer, The Hague, Delft and even Rotterdam.

There is empirical evidence to show that, since the mid 1990s, the growth rate of the urban economy and urban employment in the Netherlands has outstripped the national average. Apparently, ICT stimulates the urban economy.
City dwellers not only appreciate urban amenities, urban culture, and urban life; they also want to enjoy nature, landscapes, and outdoor recreation not too far from home. Urban networks seem to offer attractive opportunities here. This inference, if proved correct, would encourage urban planners to move away from the compact city concept and – without abandoning urban planning altogether – to strengthen the idea of the network city and the urban network at regional level by:

- increasing the scope of urban planning beyond the city perimeters;
- integrating urban and regional planning;
- dealing with planning issues first and foremost at urban regional level, because of the increasing scale of housing markets, labour markets, and mobility;
- encouraging awareness of the pattern and logic of the green networks, water networks, traffic networks, and ICT networks that determine the optimal locations for new housing sites and business parks;
- strengthening the accessibility of urban centres and sub-centres;
- promoting the interoperability and interconnectivity of networks for both personal mobility and freight transport.

The urban future will increasingly be that of the network city, which includes not only the original core city, but also a number of smaller cities, growth poles, and suburbs, which could, to some extent, develop into edge cities (Garreau, 1991). On an even larger scale we observe several conurbations, such as the British Midlands, the Randstad Holland, the Flemish Diamond, and the Rhine-Ruhr Area. Here, the challenge facing urban planners is to improve the infrastructure for car traffic and public transport, so as to significantly reduce travelling times. This could further

integrate the urban housing market and the urban labour market and provide a base for top segments of the housing market, business locations, cultural activities, and sports events.
In *Cities in Civilization* Hall (1998: 943) concludes: "At the turn of the twenty-first century, a new kind of economy came into being, and a new kind of society, and a new kind of city; some might say no city at all, the end of the city as we have known it, but they will doubtless prove wrong."
The changing relationship between city and countryside also implies that government opportunities to intervene by directing the layout of city and countryside have changed. Asbeek Brusse *et al.* (2002: 140) talk of a new geography (Sassen, 1996: 1-31; Kotkin, 2000; Hajer & Reijndorp, 2001: 37). Social change leads to spatial shifts, which have huge consequences for government policy.

5. Implications for urban housing markets

The Netherlands has a traditional urban renewal policy that goes back to the 1960s. Directly after 1945, the emphasis in national policy was on increasing the volume of new building in order to solve the post-war housing shortage. At the end of the 1960s, the national government turned its attention to the quality and differentiation of new building. It also started focusing on the housing stock, which had been neglected through the (initially) rigid rent control and was under-maintained. The problems were concentrated in pre-war urban districts in neighbourhoods with a large share of privately rented dwellings. The landlords did not have the financial resources or the knowledge to renovate their properties. The quality of the dwellings was determined by a points system. Demolition was considered the only remedy in a large number of cases. A real wave of demolition developed in the period between 1968 and 1972. More than 20,000 dwellings a year were taken out. In many pre-war urban districts the population came out in protest, often supported by left-wing students.
In the 1970s the government reformulated the urban renewal policy. During the term of office of State Secretary Schaefer (1973–1977), the accent shifted from demolition to renovation. New construction had to be affordable, particularly in urban renewal areas. Building for the neighbourhood was the popular slogan. The predominant transition in tenure was from commercial rented housing to social rented housing.
The traditional urban renewal policy has been evaluated on a number of occasions. The results have been positive: the housing quality in the cities has visibly improved and affordability has been reasonably consistent. There were, however, two shortcomings. The high annual subsidies put heavy pressure on the public budget. And the approach was too focused on physical improvement. The urban economy failed to recover and in many urban districts the social problems increased, or, at best, did not subside. In the 1970s, attempts were made to launch a social renewal policy at national level as an additional policy theme in the cities, but it delivered very few tangible results.
The Ministry of Housing, Spatial Planning and the Environment concluded from the Belstato evaluation (VROM, 1991) that, in 1990, urban renewal had reached the halfway point. Continuation of the current urban policy would fully resolve the problems that had been quantified in 1981 (VROM, 1981). To facilitate a smooth transfer, the policy would not be discontinued at a stroke, but would be phased out gradually until January 1, 2005.

That date would mark the end of the traditional urban renewal policy.
The demand among young people, the unemployed and other low-income groups for cheap housing is now paralleled by a growing demand for high-quality urban housing, which is not being adequately met in most western cities. The position of social climbers in the city is especially interesting. When they find out that their neighbourhood does not offer housing that meets their increased demands, they feel compelled to leave the locality or even the city. If such high-quality housing were, however, to become available (owner-occupier housing, penthouses, family homes with a garden) they would stay. This would keep spending power in the city, revitalize the urban economy and prevent growing spatial concentration of low-income groups in less popular neighbourhoods.
This perspective forms the foundations of the current Dutch policy on urban renewal, which we refer to as 'new urban renewal' in contradistinction to 'traditional urban renewal'.

It had become clear that the urban problems were shifting from pre-war to (certain) post-war areas. These problems were not primarily of a technical nature, but related first of all to an increasing mismatch between housing supply and demand. In a number of post-war districts the problems not only concerned housing, but social, economic and safety issues as well. A new approach was needed. In 1997, the Ministry of Housing, Spatial Planning and the Environment published a new Urban Renewal Memorandum (VROM, 1997), which set out the new urban renewal policy. There was a clear link between the new Big Cities Policy started in 1994, when the first Kok government appointed a new State Secretary for Big Cities Policy: Jacob Kohnstamm. The Big Cities Policy has a social, economic, and physical pillar. The new urban renewal policy should be perceived as the physical pillar of the Big Cities Policy.

The second Kok government continued the Big Cities Policy in an amended form. The coordinating authority of the Ministry of Home Affairs was strengthened. A minister was appointed for the Big Cities Policy (Van Boxtel) who shared budgetary responsibility for the accompanying state budgets. These budgets have been made available in the *Extra Comptabel Overzicht* (Extra Government Audit) which is appended to the Home Affairs budgets. The policy focuses largely on three aspects: the physical aspect (urban regeneration in particular), the economic aspect (employment and the economy), and the social aspect (education, the quality of the environment, safety, healthcare). Separate new agreements have been drawn up for all cities for the period 1999-2004. An important difference compared with the first policy period is that separate projects are no longer financed; instead, agreements need to be reached on the targets on the basis of the MOPs. Government approval for these programmes signifies guaranteed financing for the covenant period.

In his letter of 29 June 1999 to the Dutch House of Representatives, the State Secretary for Housing, Spatial Planning and the Environment offered the following definition of urban renewal:
"Urban renewal stands for the creation of conditions for the quality improvement of the housing, work, production and residential environment in and around the cities through taking measures which are primarily geared to the nature and the management of the spatial residential environment".

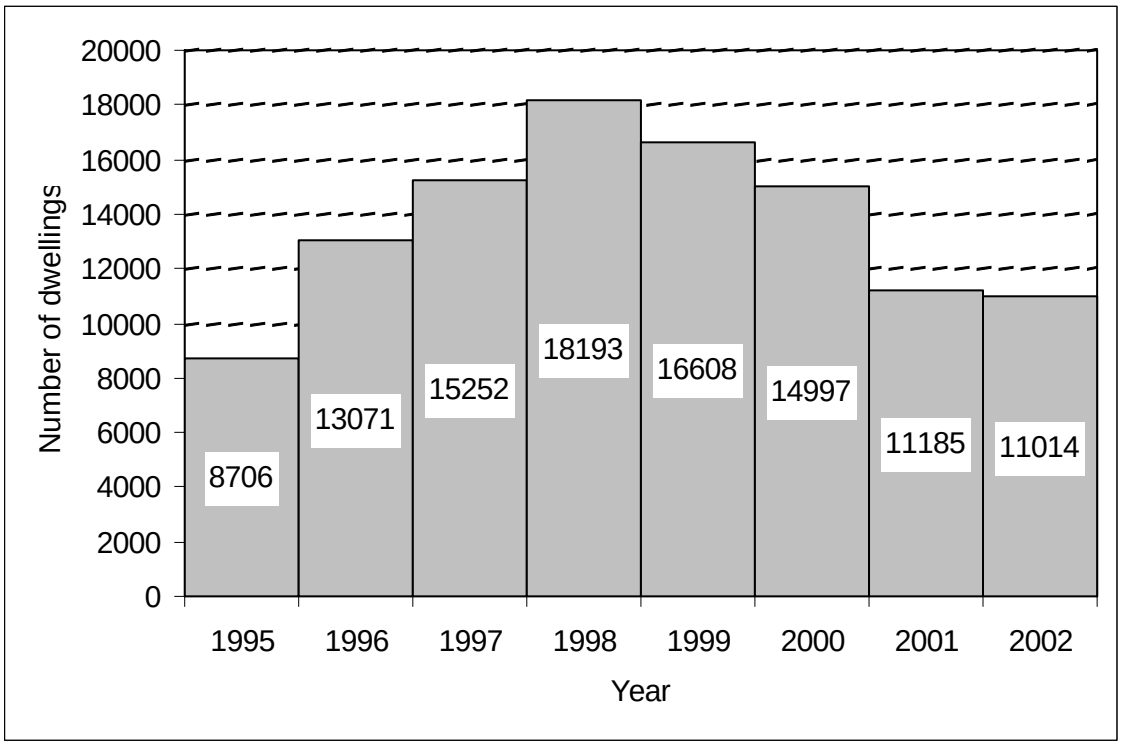
The intention is not that local authorities should finance the investments themselves, but rather that they play an initiating and directive role in which public grants can bring about a multiplier effect, leading to private investment by real estate investors, housing associations, businesses, and owner-occupiers.
In keeping with the preferences of the Dutch House of Representatives, the government has combined several different subsidy regulations in the Investment Budget for Urban Renewal (*Investeringsbudget Stedelijke Vernieuwing*, ISV) to facilitate a coherent and integrated policy. Local authorities now receive one combined special-purpose grant with a liberal spending policy on the basis of MOPs drawn up by the cities themselves and approved by the government, instead of separate grants for old-style urban regeneration, restructuring, land costs, spatial urban economy, soil decontamination, noise insulation, local environmental pollution, the historical residential environment, and large-scale green areas.
The ISV is a special-purpose grant aimed at improving the quality of the spatial environment in urban areas. Subsidy regulations from the Ministries of Housing, Spatial Planning and the Environment, Economic Affairs, and Agriculture, Nature Management and Fisheries are combined in the ISV, together with substantial extra grants from the coalition agreement. The duration of the ISV has been set provisionally at ten years: 2000-04 and 2005-09. The 1998 coalition agreement projected a development of NLG 2.25 billion (€1.0 billion). Partly through that, the total grants available for the period 2000-09 amount to NLG 9.55 billion (€4.3 billion). There is an additional environmental component for soil decontamination. For the period 2000-04, an amount of NLG 4.29 billion (€1.9 billion) is to be divided among the direct cities and the provinces (see EIB, 2000, page 14).
Twenty-five cities receive money directly from the state; as do a further five local authorities, although they receive less. In addition, grants are allocated on the basis of obligations undertaken before 1 January 2000: grants from the Urban Regeneration Fund and the provisional stimulation for renewal. NLG 1.77 billion (€0.8 billion) is involved.

The Urban Renewal Memorandum (Ministerie van VROM, 1997) defines the profile of an urban district that runs a relatively high risk of problems: a concentration of low-income groups, high levels of moving in and out, high crime rates, and strong feelings of insecurity among the residents. The social-rental sector is usually dominant in these neighbourhoods. The tenure transition currently being sought is from social housing to home-ownership. Now, social housing is considered part of the problem, rather than part of the solution. The diagnosis is that households' demands will increase as the economy grows, and that in city districts with a relatively large number of social-rental dwellings, the quality on offer will increasingly lag behind the quality in demand. As a result, the city will, on balance, lose many middle- and higher-income households. And that is precisely what the national government is seeking to avoid. Better quality housing is essential in the problem districts, along with wider differentiation and more effective synchronization with demand. That is to say: more owner-occupied dwellings, larger dwellings, more houses with their own garden, more attractive residential environments, and substantially improved safety on the streets. The stock of inexpensive social rental dwellings in the city is excessive and draws in disproportionately large numbers of low-income groups.
We must place some critical remarks against this simple analysis. In the period 1997 - 2002, social rental dwellings in the city became increasingly scarce: waiting times have become stuck, while selling prices in the higher segments have fallen slightly since the

end of 2002. It is common knowledge that cities have a magnetic effect on immigrants from poor countries, but this attraction stems not only from the prospect of affordable rented housing, but also (and mainly) from the presence of immigrants from the same country who can act as intermediaries to help newcomers take advantage of the opportunities offered by pluriform urban formal and informal labour markets, and of ethnic entrepreneurship in the city. And the fact that many young people migrate to the city is not so much caused by the availability of affordable housing, but is rather the logical consequence of the locations of universities and institutes of further and higher vocational education.
New urban renewal is characterized by an approach which unites the physical, economic and social agenda. The physical agenda aims to redifferentiate the housing stock in such a way that the number of owner-occupier dwellings increases, the price and quality of some of the stock is pushed up and small dwellings are combined or enlarged. At the same time, it aims to bring about a better structure in urban planning, better facilities for cars, better quality of public space and more greenery. In addition, energy will be invested in determining whether the business community and the economic, social and cultural amenities can be strengthened in the neighbourhood.
Since the end of the 1990s the new urban renewal policy has enjoyed broad support: from the government, the local authorities, and the housing associations, which dominate the real estate market in these urban districts.
In 1998, the government drew up multi-year contracts with 30 cities on the basis of the Multi-Year Development Programmes (MOPs) which were formulated by the city councils. These programmes must satisfy a dozen or so nationally established explicit criteria (Priemus, 2002). In 1998 Rogier van Boxtel became Minister for the Big Cities Policy. With this appointment the second Kok government underscored the priority it was according to the Big Cities Policy and the new urban renewal.
Under the political responsibility of State Secretary for Housing, Johan Remkes, a policy document appeared in 1999, which was entitled *Mensen-wensen-wonen [What people want, where people live]* (VROM, 1999). This document further sharpened the ambitions for new urban renewal.

The progress and the funding of new urban renewal were made increasingly dependent on the revenue that housing associations received from the sale of their social rented property. A tenant's right-to-buy cannot be implemented in the Netherlands (as it is in the UK), because social housing in the Netherlands is private property. The Housing Memorandum nevertheless made it quite clear that housing associations were to be put under pressure to sell as many as 500,000 dwellings in ten years (2000–2010). This was thought to be the wish of the sitting tenants, but the housing market has turned around since 1998 and the owner-occupied market has begun to stagnate. The sales of the housing association dwellings increased after 1995 (mainly as a result of the greater financial independence of the housing associations); however, after a peak in 1998, they took a downturn (see Figure 10).

Figure 10. Sale of housing association dwellings to owner-occupiers, 1995–2002



Source: CBS

During the early years of the new urban renewal there was considerable confusion for a time about the primary target groups: who is the new urban renewal intended for?

Initially, the foremost aim of the new urban renewal seemed to be the prevention of spatial segregation in cities. Apparently, there were political objections to the enforced spatial concentration of low-income households, the unemployed, and (stated less explicitly in policy documents) ethnic minorities. The feeling was that segments of the population in urban districts were part of the problem. These segments would be encouraged to move from one urban district to another, where there were fewer poor people or ethnic minorities or – even better – to the suburbs, or another municipality in the region. It was reminiscent of the old American saying: "Urban renewal = Negro removal". It became difficult, often even impossible, to provide the residents of a designated urban district with opportunities to participate in the preparation of new urban renewal plans.

As the 21st century began, the approach changed. Local governments sought the full participation of their residents. New urban renewal was targeted not at yuppies from other parts of the city, but at the sitting residents, particularly those who had improved their economic position. In the recent past they often felt obliged to leave their neighbourhood in order to buy a house, find a larger house with a garden, or a safer environment. The main approach now is that there should be a variety of alternatives, including owner-occupied housing, more expensive rented accommodation, larger homes, and homes with a garden, which offer better housing opportunities for the upwardly mobile households in the area.

Although new urban renewal is still in its infancy, the first evaluations have already appeared. The *Centraal Planbureau* (2000) (Netherlands Bureau for Economic Policy Analysis (CPB)) has criticized the local authorities for the uniformity of the policies, approaches and solutions in their multi-year development plans. More differentiation in urban renewal policies would have been preferable. One point of criticism levelled by the VROM-Raad (2001) and the Social Economic Council (SER, 2002) is that the municipal authorities concentrate too much on the cities and ignore the surrounding regions. The integration of urban and regional policies would be preferred.
Last but not least comes the critical observation that, to date, the performance in new urban renewal lags far behind the ambitions of both municipal and national governments. The practical barriers and complications hinder progress and sometimes lead to a stalemate. Nevertheless, support for new urban renewal remains broad and most stakeholders appreciate that it is still in its infancy. In the future we will have to cope better with the complexity of this challenge.

6. Implications for urban planning

The economic transition from manufacturing to the production of knowledge, the development of intensive advanced business services, the impact of ICT on urban formation, the restructuring of the agricultural sector in the EU and the development of urban networks and network cities have several important implications for the urban planner:

- the need to link different levels of scale: from local to global;
- the awareness of network relations, sometimes bridging long distances;
- the need to link different policy sectors in a multifunctional area development;
- the need to link public and private initiatives;
- the need to stimulate citizen participation and to leave space for consumer sovereignty.

Cities will be more multi-nodal in the future, developing at the crossroads of infrastructures and ICT networks. Some cities will function as a hub for long-distance networks. For them, global relations are vital: ocean connections with Singapore and Hong Kong are crucial for the Port of Rotterdam; air links to and from Washington, New York City, Chicago, and other hubs on different continents are essential for Amsterdam-Schiphol Airport. By 2007, the *annus mirabilis* of urban interconnectivity, the European network of high-speed trains will connect the major mega-city regions of Europe's central urban core: the Delta Metropolis (Randstad Holland), the Flemish Diamond/Brussels/Lille, the Île-de-France, South East England, Rhine-Ruhr and Rhine-Main. These long-distance connections will have to be integrated with each other (air-to-HST interchanges at Schiphol, Frankfurt and Paris Charles-de-Gaulle) and with the finely-meshed more local transport networks that link the different urban, housing and business areas in the region.

For ICT relations the integration of different distance relationships is even more spectacular: with the World Wide Web we can surf for information regardless of origin; we can email our immediate neighbours and distant colleagues with equal ease. But the 'death of distance' will never really happen, for two reasons. First, the ICT network will never be evenly spread: everywhere, a new 'digital divide' is

emerging between areas where the density of connections justifies the installation of high-speed broadband connections, and areas (principally rural) where it does not. Second, though electronic communication may serve as a substitute for face-to-face (F2F) meetings, it may equally be complementary: e-mail exchanges may create a need to meet across the table. This is why the growth of telecommunications appears to be running parallel with personal business transport (Graham and Marvin 1996: 262); and all kinds of opportunities for meetings – conferences, conventions, workshops, seminars – are growing exponentially. Finally, it seems that the principle of agglomeration still applies in the production of advanced services – witness the continued strength of an 'industrial district' like Silicon Valley or a financial district like the City of London – and in consumption, as demonstrated by the growth of urban tourism.

If we endorse the analysis, then we must concede that urban planning in the future ought to increasingly proceed from the combination of projects in the development of urban and regional areas. This strategy implies a multi-actor approach and multifunctional urban planning.

In the future process of urban planning of Mega-City Regions it is most likely that spatial strategies will be developed for very broad areas, linking different projects with different functions, to promote spatial synergy, but also to make the plans realistic and feasible. Public non-profit projects often cost money. Private projects promise sometimes excessive profits because of increasing land values. Therefore, if we link public projects such as roads, green structures and social amenities, to private projects, such as owner-occupied housing, shopping centres and offices, we can produce better outcomes while adopting forms of benefit-sharing and value-capturing, so reducing the need for costly subsidies. For urban planners it becomes important to look beyond plans and maps, and also to safeguard the implementation of spatial plans.

This approach seems to be the message of planning exercises like the Dutch Fifth Policy Document on Spatial Planning and the UK's Sustainable Communities Report with its proposals for mega-corridor developments connecting London with other regions.

Spatial planning is not a hobby that is indulged in by a handful of professionals. It has to be a service, promoting citizen participation and realizing consumer sovereignty. For urban planners this means generating alternative plans and mobilizing long-term stakeholders to express their preferences and to make choices. To make democratic choices, local government has to be fed different alternative spatial solutions. This is the major challenge for urban planners of Mega-City Regions.

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