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THE INFORMATION CITY,
THE NEW ECONOMY, AND THE
NETWORK SOCIETY


[...]

OUR TASK IN THIS CONFERENCE IS to examine interactions between the transformation of the economy and of the spatial environments — increasingly cities — in which we live. In order to understand the role of cities in the New Economy one has to understand first what is the New Economy. I really think that there is a New Economy, but which is not the Internet or dotcom economy. It is an economy in which companies — or firms or entrepreneurs — around the world are working on the basis of Internet and in which their organizational and innovation logic is embedded in the Internet or related information technologies. The New Economy is not just the Internet economy, but an economy that works through, by and with the Internet and with those things that the Internet represents. In a similar manner, the industrial economy was not simply an economy producing electricity, but an economy that worked with electricity. Internet is the electricity of the Information Age, and therefore it embodies all kinds of organizational innovation. It also embodies managerial strategies that introduce new rules of the game. The game is about the creation of wealth and the production of our lives through the production of objects.

This economy is not based on technology, rather it is based on productivity. If there is New Economy, it exists because there is the possibility and, in some cases, an actual realisation of a dramatic surge in productivity growth. This can already be observed in areas of the world in which the New Economy is in full fledge, like in California, but it can also be observed in many sectors and firms around the world.
in a very uneven way. This unevenness is exactly where the problem lies. We are in a new production system, which is certainly capitalist. But there are so many kinds of capitalisms that once we have said that it is capitalism, we still have to say many other things in order to understand it — and particularly if we want to transform it. One can, of course, just decide that it exists without wanting to transform it. But if one wants to transform it, then one has to understand it. So the New Economy is based essentially on productivity growth, but this productivity growth is built upon our ability to do things a new way with the new information technologies.

The new information technologies refer certainly to the Internet, but they are also about all kinds of other things — like, for example, the information technology-based systems of mobility, both personal and all other kinds of mobility: from air transportation to mobile telephony. Air transportation, of course, is an information technology. It might feel too scary if there were no pilots and just computers would be flying our planes. Actually, the computers do, however, fly planes — the computers do all kinds of things.

Now let us go step by step in trying to understand firstly what is this New Economy and secondly how it works, which are to some extent different things. Thirdly we try to understand which are the social and political challenges that arrive from this New Economy. Fourthly, we try to describe how cities play into this New Economy and into these challenges in terms of what is the structural role of the city as we are observing it today. Finally we try to examine which are the kinds of policy debates and policy implications at the level of cities that will allow cities to play a more dynamic and positive role in this New Economy. I won't be prescriptive — I am never prescriptive — but I will rather emphasize which are the choices and challenges that arise for cities in this new environment.

**The basis of the New Economy**

The New Economy is based fundamentally on three major features. The first concerns productivity. Productivity is derived from the application of knowledge and from the practice of innovation; productivity growth is the actual source of wealth. Knowledge-based productivity means that everything that enhances knowledge determines the ability to generate greater wealth. This certainly does not solve the problem of distribution, but it is related to the creation of wealth. Knowledge leads, however, to increased productivity only as far as it promotes the productive application of knowledge, which is innovation. Innovation and knowledge are not the same thing, but they go necessarily together in the generation of productivity. You must find new ways to generate knowledge and to apply knowledge to useful things if you want to make innovations.

The New Economy is thus based upon the growth of productivity through knowledge and innovation as well as in the ability to increase our capacity of knowledge-creation, which is directly supported by new information technologies. This happens because new information technologies allow the development of what we call positive feedback between the process of knowledge and the application of knowledge. Let us, for instance, look at electricity: what electricity did was not
important as long as the electrical engine was not able to process energy and to implement energy everywhere in all conditions. What information technology and particularly the Internet are doing these days is that we cannot only generate knowledge through the process of innovation but we can also make this knowledge specific and applied to any context, to any task anywhere. In other words, knowledge becomes portable and applicable and knowledge becomes specific to the task and the orientation of the problem that you have to solve at every level.

This capacity of distributing knowledge, learning from what you do with this knowledge and fitting it back into the system in a self-expanding process, is really an essential feature of the New Economy. This is so because information itself has always been the base of the economy everywhere and throughout history. But nowadays we have the technological capacity to constantly feed back knowledge and information into the processes of production, management and distribution, which gives a possibility for constant learning. People and processes learn to learn. This constant process of interaction is what the new kinds of micro-electronic-based information technologies allow. But I leave this observation simply as a footnote that I will not develop further, because for the moment I do not know enough about it. Similar kinds of things are starting to happen in the biological-based information technology, especially in genetic engineering, which is the next information technology revolution with extraordinary consequences and challenges for humankind. So the first feature of the New Economy is the ability to develop through information and communication technology knowledge-based, innovation-based productivity growth.

The second essential feature of the New Economy is connected to the fact that competitiveness operates in a global environment. That is what we call a global economy. By competitiveness I simply mean increasing market share. In other words, competition between economic actors, be it individuals or firms, regions or countries, takes place in a globally interdependent system. This global interdependent system is also new because of its new technological basis. We do not have a world economy starting in the 1990s. World economy as such is an old concept, an old historical reality, and many historians are right in showing this. But what actually is globalization is a different matter. It is the ability to have the core activities of the economy — which is not everything, but rather such things as capital markets, major multi-national corporations, key management processes, science and technology and highly skilled labor — working today as a unit in real time on a planetary scale. This is new simply because of the new technological basis. We have the telecommunications and information system and air transportation and sea transportation capability to make the system work as a unit in real time on a planetary scale. Closely interacting with this, we have also the new institutional environment for this to happen, which means liberalization and deregulation on a global scale. In that sense, governments are as responsible for globalization as for the development of information technology. Governments created globalization. The problem is that now they cannot control it. They have unleashed a process in which now they have to do something else. They can play into the global process, but they cannot control it. So, competitiveness is global, and this is actually relatively new in historical terms. Therefore it is the second major structural feature of the New Economy.
Thirdly performance in the New Economy is dependent upon a new organizational form, which is networking. Networking is the equivalent for the information age in the same sense as the large corporation, the large factory, the mass-standardized production process, the assembly-line production and distribution process were for the industrial age. Some people have called the latter Fordism, but I don't know whether the expression makes too much honor to Henry Ford. I call it Leninism, because Lenin in fact adored Henry Ford and tried to implement Fordism in the Soviet Union. But whatever you call it, it has been a system based on large-scale standardization and vertical organizations that require a strict division of labor and an extreme rationalization of each process. The key for performance in the New Economy is, on the other hand, networking. Networking is the capacity to assemble resources in a very flexible, adaptable way around projects and then to do these projects. After that you dissolve the elements of the network that have performed the project and you re-organize it in some other project. So, the project becomes the unit. This does not mean that corporations cease to exist, but corporations exist and are sustainable only as long as there are internal networks, connected to other networks, both of large corporations and small and medium-sized firms organized in networks.

The networking form of social organization, which is the most adaptable and the best performing one is nowadays eliminating the other organizational forms simply through competition. You have a large, vertical bureaucracy competing with these networks that proliferate and organize themselves throughout the world and you know what's going to happen. It has happened, in fact, to many of these large corporations. Either they become networks or they disappear. I'm not saying that the old corporations are dying. Only those that are not able to transform themselves into networks are dying. The networks are not necessarily the instruments of freedom, you can have very oppressive networks. Networks are flexible, adaptable, much more competitive and more able to process resources and to follow signals effectively. Networks are not, however, a recent form of organization. Networks have existed throughout history. Why then is the whole economy suddenly organized around networks? Society, too, is finding the New Economy. Networks have always had great advantages and great problems. The great advantage has been their flexibility, their adaptability. Their great problem has been the difficulty to exercise coordination functions beyond a certain size and level of complexity. That's why throughout history — armies, churches, states — all big machines that have been the basis to mobilize people, to oppress or to control them, have been the winners against networks. Networks were the refuge of solidarity, interpersonal support, families, friends, survival — the private life, the survival life. The official life has been large-scale organizations and big machines, because networks have not been able to master resources. They could not develop a focus on one particular point and concentrate large-scale resources on it. They could not handle complexity.

Now technology, new information technology, allows the decentralization of execution, the variable geometry of the components of the network and, yet, an effective coordination of its tasks and control on the unity of the purpose of a particular network. So, coordination, decentralized execution and the ability to process constant change by adapting to new nodes by combining new networks has become
possible because of technology. Now, I think, you could see a little bit of my empirically based conception about the role of technology. Technology is not what changes society. Society and the economy are changed by all kinds of other things like new sources of competitiveness, new values, new strategy, new objectives. But without this kind of technology all these attempts to, for instance, network would not happen. So, technology is a necessary, but not sufficient condition for the change into the New Economy and into the new society.

The New Economy is consequently based around new sources of productivity that are, on their part, based upon information technology-based knowledge and innovation, new forms of competition characterized by the global environment, by the global economy, and new forms of performance characterized by information technology-based networking and networking capabilities. But in what sense is this New Economy new? How does it work? And why is it so new? I would say that the simplest way to try to understand how it works is by focusing on three processes, which are critical in all economies. What changes for capital? What changes for labor? What changes for the source of creativity, and the source of productivity as well, which is innovation? Capital in the New Economy changes in its function and in its workings. First of all, what changes is the formation of a global financial market, which is fully integrated and fully interdependent. Even if all savings are not in this market, all savings and all capital are conditioned by what happens in this globally interdependent financial market. Again, this financial market has become global and has become interdependent on the basis of institutional changes, deregulation, liberalization and privatization and, at the same time, technological transformation. The development of computer networks, the development of telecommunications that allow the integration of this market, all this is absolutely critical in the functioning of the New Economy because, ultimately, the value of a firm, but also the value of a country as measured by the currency, depends on the judgements of this global financial market.

The workings of the New Economy

Firms are valued at what the financial market states their value as. The value of currencies is determined by this global financial market. As for countries, it is important to remember that currently the global currency market exchanges every day 2.2 trillion dollars, which is substantially over the GDP of the United Kingdom. It's even more than the GDP of France. Therefore, what happens in this financial market determines everything you do regardless of how innovative you are or how good your products or ideas are. The only thing that counts, ultimately, is what this global financial market thinks of you.

But how does this global financial market operate? A critical matter, besides interdependence, is the increasing development of ECNs (Electronic Communication Networks), through which you trade directly. The whole process of disintermediation illustrated by all telephone companies these days – or mobile telephone companies – are contributing very much to this, because you are going to be able to trade your stocks on-line, to bet your savings and the savings of your children and do that everywhere in the world. Let us take as an illustration: South
Korea, one of the countries with the most advanced Internet development in terms of the use of the Internet. Thirty per cent of stock investments in South Korea are done on-line and with a large proportion coming to mobile betting, but there are 30% already on-line. So this is disintermediation. In the United States currently about 20% of investors' trading is done directly on-line, bypassing investing companies.

The technology of transaction is important first, because it lowers transaction costs considerably – by about 50%. By lowering transaction costs, technology opens up much greater possibilities to the market. Many more people go directly into the market. Second, because it broadens the possibility of financial trading directly from individual investors to the market, it extraordinarily increases the sources of complexity and reaction to the market. If you are investing directly on-line, you have all kinds of information. You have to process this information and react to it immediately. Therefore, instead of having a number of big investors that can, more or less, understand the overall situation of the market and adjust to long-term strategies [you have a] [ ... ] mass of small investors betting on-line [that] is a mass of people who are playing with their lives each minute. So, the development of electronic transactions is transforming the logic of global financial markets in terms of increasing complexity and therefore increasing volatility, besides increase in size.

This is being related to an institutional technological transformation of the markets, the development of electronic stock exchanges. As you know, the current tendency is for the world to become closer and closer to what Nasdaq is. Nasdaq is an electronic market, and there is no Wall Street for Nasdaq. You may perhaps look at the Nasdaq index every morning, but nevertheless it is only an electronic entity. In other areas, like future trades, the largest networks are not American anymore. Eurex, which is a German-Swiss electronic network, is the largest futures market in the world. Chicago, which invented futures, is being eaten alive by the electronic network these days. Wall Street is actually considering going partially into electronic mode. The (at least temporarily) failed connection between the London and Frankfurt stock exchange included an agreement with Nasdaq to create a Tokyo–London–Frankfurt American Nasdaq-style of electronic exchange. We are thus moving towards an electronic exchange market place for the moment. This technology is the result of globalization of the financial markets, but at the same time, technology is not indifferent. This technology means that you have much greater possibilities to move savings from anywhere in the world to any other place at speed – electronic speed – and generate the ability, supposedly, to mobilize extraordinary masses of capital at extraordinary speeds. But in addition you have to manage this. You have to be able to make judgements on this stock market, or on this securities market in general terms, because this is where the value – not only of your companies, but also of your savings – is determined. This is a very personal problem and thus not only a technical matter. It is about your money and about the money of your children.

How, then, for instance, is the value of your Nokia stock decided? Well, as you know, this is a matter of deep debate in the economic field these days. The short version of the matter is that it is not determined by profits. It is not just about calculating the profits of a company. Yes, in the long term, as any good
micro-economist will tell you, profits have to coincide with the other criteria, with investment at least in the long term. But, what is the long term? What matters today is the nanosecond in terms of the speed of the realization of capital. And in the very short term, markets do not process only profit information, they process all kinds of information. They process political stability or instability, the personal problems of Alan Greenspan or of Duisenberg in the morning, at breakfast, at home. If Alan Greenspan looks good, the markets go up and if he looks bad, the markets go down. That is not profit, that's information. Because of the Internet, financial gossip is nowadays a cottage industry. You have tens and tens of on-line companies, for example Whisper.com, that gives you the latest gossip about everything. You have securities evaluation companies, Moody's and others, which give you an evaluation on everything in short.

What actually determines the value of stocks, which determines the value of firms and consequently also the value of economies, is a process of information turbulences. Profit is one element in it, but only one. When Nokia stock collapsed in summer 2000, Nokia was doing very well. No-one doubts about the performance of the company: it has a great product, an expanding market, good technology, people at the company were managing alright. But it just happened that profits were not going to be earned exactly as well as suspected. This occurred in a context where people were getting nervous for all kinds of other reasons. And then Nokia went down. As another example we can take Intel: has it a future? The company slogan is 'Intel inside', and Intel is nowadays inside right about everything. Nevertheless, in autumn 2000 the stock of Intel took a tremendous beating. Certainly, many companies are nowadays over-valued and other companies may be under-valued. But why are companies either over-valued or under-valued and then just jump from one place to another, from one value to another? And depending on the period of time you look at, you can say that, oh – it has collapsed or has not collapsed. We have been collapsing since April 2000 in the technology stocks, but then it might happen that, for instance, the supreme court decides something and the stocks may be zooming upwards again. Anyhow, we cannot know whether some really great economic decision has been made in between. On the other hand, we can take the last 5 years – and not the last 5 months. In this period the technology stocks have, for most companies, multiplied their value by between 3 and 10. So if you take 5 years it is a story. If you take 5 months it is another. Take the next 5 months, and it may be again quite different.

So, are we in a bubble economy? No, because a bubble economy refers implicitly to the notion of a market in which there is an equilibrium line, a natural order of things that then is disturbed by irrational exuberance, as Mr Schiller would put it, but in which ultimately things go back. That is, however, the old world, whereas now we are in a New Economy. The New Economy is an economy in which valuation is decided in the global financial market through information turbulences, of which traditional economic calculation is only one of the criteria. We published this year a little book in London with Anthony Giddens, George Soros, Paul Volcker and others on the logic of global capitalism. Paul Volcker, as you know, is the former chairman of the Federal Reserve Board in the United States, and he has a little chapter there, which is the best description I have seen of global financial markets. He has, for instance, a sentence which says that well, in fact today's global financial
markets don’t work on objective reality. They work on the basis of perception. Or, better said, perception is reality. And we are not dealing with a post-modern anthropologist, but with Mr Paul Volcker.

Often we do not discuss these kinds of matters in meetings on municipal policies and cities. But nowadays the world is being determined by information turbulences, which has all kind of implications. That is the New Economy. Therefore we are not in a bubble economy that is going to be re-established, because if we have bubbles forming and disappearing, I don’t call this a bubble economy. Rather, I would call it sparkling water. And that is one of the key dimensions of the New Economy.

Labor in the New Economy

I will discuss the second item more shortly, because it a technically less complex. Labor has also changed extraordinarily, the most important thing being the key role of flexibility in labor markets and in employment. The constant re-allocation of resources to networks is the critical matter. Unemployment in itself is not an issue in the New Economy. Some economists fear unemployment, others don’t, but it has nothing to do with the New Economy. Some New Economies actually could produce unemployment, but not all. The empirical evidence is there, and according to it no relationship exists between information technology and unemployment. We could perhaps discuss it in more detail later. Anyhow, flexibility is the key. Flexibility means, in fact, the end of stable employment in the same company, of a predictable career pattern for the rest of your life, which has been the prevailing mode of employment during the industrial age. It doesn’t mean necessarily that people are going to be worse off. Some may be, whereas some won’t. This depends on the society rather than on the labor market. The norm is flexibility. And companies will not be able to keep inflexible labor on their payroll, because others won’t.

Talent, highly skilled labor becomes the key resource for productivity growth and the key resource for any company. How to produce highly skilled labor, how to attract such labor, how to keep it in a network or in the firm becomes the number one issue for any major or small company. People talk about the intelligent corporation, but the small companies need intelligence even more, because the only thing you have is your brain. This is closely connected to an increasing multiculturalism, because multiculturalism of the labor market is another major structural change of the New Economy. You cannot have a New Economy without global mobility of labor and without the ability of people to move from one place to another. Silicon Valley would not exist today as a leading technological center without immigrant labor. During the 1990s a colleague of mine, Annalee Saxenian, has produced a wonderful study on the matter. Thirty per cent of the new companies created in the Silicon Valley in the 1990s are headed either by an Indian or Chinese CEO. If we would add the Brazilians, Israelis, Russians, etc., perhaps also some West Europeans from time to time, they would be close to 40%. This is an absolutely critical issue, because countries that will be closed to the immigration of labor in the level of menial jobs won’t have anyone to do basic jobs, because of the changing demographic structure of the population. At the level of productivity such countries
will not have enough labor to fulfill the highly skilled tasks in any company. One
notion is to solve this with education, but if you start reforming your education
system today, you get the yields in twenty years.

One essential characteristic of the New Economy is that labor is highly divided
and highly segmented in terms of its ability to contribute to productivity growth.
My fundamental distinction here is between skilled and non-skilled labor. This is
an old, industrial society division. But now we perceive it as a division between
self-programmable and generic labor. Self-programmable labor is one that has the
installed cultural, educational capacity to re-program itself throughout its life.
Generic labor is one that executes. It does not have any other capacity, but to under­
stand some instructions and to execute them. Generic labor co-exists with generic
jobs and with machines throughout the world. The combination between the three
components changes depending upon firms’ strategies and countries.

Innovation – the fuel of the New Economy

The third key transformation in the process of the New Economy besides the trans­
formation of capital and labor is the transformation of innovation. Innovation is the
ability to create new products and processes and to think about new relationships
between the economy and society. I want to emphasize three matters again mainly
just in headlines. Here I have built upon the work by two outstanding Finnish
researchers. You know, Finland does not produce only Linus Torvalds, Nokias and
engineers. It produces also outstanding social researchers, and two of them have
happened to be around in Berkeley. [Pekka Himanen’s 2001 book, The Hacker Ethic
and the Spirit of the Information Age about the open-source culture is critical.] Ilkka
Tuomi has just finished a book on innovation and on the relationships between
organizations, innovation and society. In my opinion it is the most important work
produced on what is innovation now. From their analyses, which coincide with some
of the things I know from other contexts, we could say two things. The culture of
innovation is a culture of sharing information, not of hiding innovation. The open­
source culture that Linus Torvalds and then Linux exemplifies is not limited to
software or to Linux. It is characteristic of the new forms of productivity growth
in the New Economy. This changes everything in terms of property rights, intel­
lectual property, everything. It is a whole field — if you want, we can discuss it, but
this is absolutely critical. The culture of innovation is based on open source at every
level. It is about the sharing of information and about win-win strategies. You win,
I shall win, and together we will win even more. Already the speed of innovation
is such that if you simply base your strategy in keeping information to yourself, in
6 months it will be obsolete. Moore’s law used to be 18 months, now it’s 6 months.
The information will be obsolete and since you have not shared it with anybody,
nobody has shared anything with you, and in the end you have nothing but your old
technology and your old ideas.

A second important aspect of modern cultures of innovation is organizational
learning, which happens mainly through networking and internal synergy in organ­
izations. What one needs is the ability to share within the organizations, which is
connected to the notion of open organizations rather than to closed organizations.
The first element is cultural and only after it comes the organizational. Organizations must be open to the innovation process, learn from the innovation process and be ready to change themselves. In other words, you may have great technology, but if you do not have the ability to innovate in your organization, the technology collapses. This has a lot to do with cities, but I will come to this a little later.

The third aspect of the innovation process is that innovation is increasingly produced by territorial concentrations of production and innovation, which create innovation through synergy. Synergy, remember, is two plus two is five. Synergy happens in territorially concentrated areas, such as Silicon Valley, for instance. Silicon Valley is entirely based on the ability to have your ideas from other people and from other companies operating there. This has, as a matter of fact, always been the case. If you wanted to paint in the 1920s, you had to go to Paris. Now you go to Paris to see what they painted in the 1920s but, fundamentally, synergy has always been related to territorially concentrated milieus of innovation. With Peter Hall we did a world survey of these matters a few years ago, published as *Technopoles of the World*, which shows the notion of 'milieu of innovation'. The milieu of innovation is the territorial concentration of the ability to innovate in certain clusters. Concerning these clusters, again here, Annalee Saxenian has demonstrated how Silicon Valley is not a mysterious thing - it is based on networks. This cluster does not consist simply of people landing together, it is about people working together and companies networking with each other. The author demonstrated, for instance, why the area around Boston that was much more advanced than in Silicon Valley could not follow the level of technological innovation and business excellence that Silicon Valley did. Boston was based on large, vertically organized companies that did not cooperate, did not create territorial networks, whereas Silicon Valley is all based upon territorially based networks. You may be told that people want to go to Silicon Valley because it has such a nice climate. Actually they cannot see the climate, because they spend their time in traffic-jams and work 70 hours a week. They need to just because the housing costs are about five times those of in Helsinki for the same space. So, they don't go there for that. They go there because if they are not there, they don't know what's going on. And this cannot be done over the Internet. Once you know, then you can go over the Internet, but first you have to be there to know.

These kinds of territorial networks have expanded through global networks between territories. The most recent work by Annalee Saxenian, not published yet, is about the expansion of global networks on the base of what she calls entrepreneurial networks. People who graduate from Stanford create a company in Silicon Valley then, if they are Chinese, go back to China to create a company in China, come back to Silicon Valley and go around the world. That's why airlines are doing such a great business. But these global networks are not based simply on individuals or on firms. They are based on territorially concentrated complexes. This is important for city development. If you want an empirical demonstration of this we can look at the geography of the Internet. The Internet has a very definite geography. One of my students, Matthew Zook in Berkeley, is finishing his dissertation, which is the first systematic mapping of Internet content domains, Internet content providers' domains worldwide. It is a rigorous study, it works and the results are stunning. Internet that is supposed to be the spaceless, free-floating industry and
activity of futurologists, is the most concentrated industry in the world. I am talking here about content provision. It's even more so if you do the analysis in terms of some other technological criteria. But just in terms of content provision we can see first, that it’s concentrated in countries. Certainly in the United States, but the United States is losing its relative share vis-à-vis other countries. The United States still has over 50% of total Internet domains, but it’s declining. The share used to be 80% two years ago (Zook 1998).

In a few countries in the world and within countries content production is mainly concentrated in major metropolitan areas. In terms of the world, the hierarchy is: first New York, second Los Angeles, third San Francisco Bay Area, fourth London in terms of the actual proportion of Internet domains. But, in every country it’s the same: Internet content providers are concentrated in a few areas and particularly in the largest metropolitan areas. Even more interesting, within each city – Matthew Zook’s mapping has gone down to the intra-city level – it’s concentrated in certain neighborhoods. Like in a staggering proportion in the Bay Area, it’s concentrated in one small area in San Francisco, which is called the South of Market area and in New York it’s all in Manhattan, certainly, but within Manhattan there are three main points of concentration, mainly at what is called Silicon Alley, which is what is called south of Houston in New York. Anyway, it is about the concentration of concentration of concentration of the Internet, which theoretically you could do from a mountain-top just as well! But you just don’t do it for two reasons. First of all, the Internet processes information, and the major centers of production of information are the major metropolitan centers. Therefore, they are also the major centers of Internet users and content producers. Internet industry, more than anything else, works on synergy. On people knowing someone else, knowing what’s going on, being there as an artistic, creative milieu. And this happens in neighborhoods.

The challenges of the New Economy for cities

Now I think that we have talked enough about the New Economy. Let’s move into cities. But, before doing that let us state quickly that this economy has extraordinary challenges at the social level. [...] Fundamentally, I see four major challenges: one is the individualization and fragmentation of society. Networks are great, but they are usually networks of individuals. The social fabric of society is being transformed into networks, which is good for the individuals who feel great, but it’s not so good for those who cannot afford being individuals. They are too weak for that in whatever you decide the concept of weakness is.

Second, there is an increasing divide between people with vastly different cultural and educational resources. The digital divide is not important in terms of access. With probable universal access of Internet in developed countries within five years that is not any longer the issue. The issue is what you do with your cultural and educational resources once you are connected. If you know what to do with the Internet you are great. If you don’t, you are much worse than before the Internet because other people know. So, the digital divide is a cultural and educational divide.
The third major challenge is multiculturalism. The New Economy is based on the notion of multiculturalism. Some societies can manage, while others have great difficulty and will have to live with it. Fourth is the notion of what I call the territorial divide between places that are connected throughout the world in dynamic networks. The space of flows is a world consisting of space that is connected through these flows of networks. But there are also places, which are disconnected from these global networks. This tendency is, in fact, also facilitated by the new technological infrastructures.

There is another wonderful book about to be published by Steve Graham and Simon Marvin from Newcastle University called ‘Splinter Urbanism’ in which they empirically show how the telecommunications and Internet and transportation infrastructure are being set up around the world in a way which is splintering not only the world, but also cities. This doesn’t happen simply in terms of having or not having the Internet, but rather in terms of who has broadband and who hasn’t. The current technological infrastructure is creating new electronic spaces, which leave aside territorial spaces in conditions of isolation and ultimate marginality in the Information Age. So, these are very big challenges.

How can cities face these challenges?

How do cities deal with both the opportunities and the challenges? First of all, let me remind you that in this age of telecommunications in which locality was supposed to disappear through communication over the Internet we are about to become, for the first time, 50% urban on the planet. The projection for twenty-five years is that over two-thirds of the population will be concentrated in cities and metropolitan areas, and most likely with the current trends, by the end of the century we will be overwhelmingly urban. Urban, but in addition metropolitan, which means that an increasing proportion of this urban population is in large, vast metropolitan areas formed by connections between metropolitan areas. There are gigantic cities throughout the world. Some people don’t realize it, because they still consider that London and Paris are different. Yes, they are different, but they are two hours away by train from center to center. So, the Brits still think that they are isolated by the Channel, but they are not. They are going to be swallowed by this uncontrollable Europe. In other words, seriously speaking, what we do have is an urban world. At the time where we could theoretically decentralize, we are in fact spatially concentrating.

You don’t have to be very sophisticated in order to understand why this is so. It is enough to just read the available studies on the matter. It is always the same: people move to cities not because they love it, but because that’s where the best jobs are and the opportunities for everything are, particularly education for their children. And if they don’t have children? Well, to find someone to take the preliminary step. As well as the opportunities and the services in every aspect, from cultural amenities to education to technology to everything. Metropolitan areas are the magnets of our world. Why do these opportunities arise in cities? Well, remember the conclusions of perhaps the most important urban book in the last ten years, Peter Hall’s book, Cities in Civilization, his magnum opus, which
analyzes the evolution of urban civilization and particularly the relationship between
creativity, innovation, productivity and urban culture. It is clear that cities have
throughout history been the seedbeds of innovation in cultural, economic and
technological terms in every possible aspect and ultimately, the seedbeds of informa-
tion. So, it's not so surprising that in the Information Age, an age based on
information, knowledge, processing of symbols, generation of ideas, etc., cities are
the centers of this New Economy and of this new cultural capacity. But cities
are, at the same time, different today because they are based on a new spatial archi-
tecture. They are based on global networks of cities connecting to each other.
Innovation does not happen, let's say in financial terms, in Wall Street or Tokyo,
but between Wall Street, Tokyo, London and so on. In other words, you have the
concentration of cultural innovation in cities and major metropolitan areas. At the
same time you have the connection through electronic and transportation net-
works between these nodes, which form a global architecture of networked cities.
This is our urban world, which is not a world of competing cities, but a world of
cooperating cities.

In this particular world how could cities both foster the role in innovation and
how can they help to cope with the challenges that I mentioned? In terms of inno-
vation a number of studies show that innovation depends, fundamentally, on people
being innovative; that is, being culturally sophisticated, well educated, and entre-
preneurial. It looks like these people are increasingly attracted to vibrant, urban
cultures. A book [...] published [...] in the United States by Joel Kotkin, called
The New Geography, which relates the new trends in the United States, the new
professional managerial class, the creators of new ideas and new wealth, states that
the first thing people decide when they want to find a job is what is the nicest city
in terms of having fun there. People are very weird, so the notion of where to have
fun may vary. I would think, normally, that everybody would like to go to
Barcelona, but some people don't, so, in that sense, I would say the development
of cities as cultural centers is the best information technology strategy for a city.
Technoparks are finished. They are alright for megalomania like in Malaysia, but
technoparks, at this point, can be good, useful industrial areas, but are not the
elements that create value in a city. This is the 1980s strategy, not the current
strategy. The current strategy is to have good educational facilities, good nightclubs,
good ideas, good places to live, and then attract young entrepreneurs who actually
will be the creators of wealth and opportunity.

Cities are also being key in the development of technological markets and in
innovative uses of new technologies. The public services' use of new technology
is the new frontier of the New Economy. Until now the New Economy has been
technology-driven. But there is only so much you can do with the current tech-
nology, even with a mobile phone. The young people have invented every possible
thing, and I mean every possible thing to do with a mobile phone, but there is a
limit. So, on the other hand social services, educational services, health services —
all kinds of basic items — are still very much underdeveloped in terms of new tech-
nologies, in spite of good experiences with experiments here and there. This is
something that city governments and city-based public institutions could develop
(and in many cases are developing) and this in fact is very good feedback in terms
of new innovation and business policy. You create a market because public services
pay for it and then you have companies, which go into this market niche and on the basis of this they can export to other urban markets. So, this is something that is really happening.

Now, in terms of the social challenges, we are fundamentally inducing, for the moment, a society of non-sharing in terms of material wealth and a shared cultural meaning. A society of individualism is a society which is extraordinarily dynamic, but at the same time a society of potential isolation in terms of the cultural meaning that could be shared by society. The restoration of meaning has a very important material dimension in which cities both in terms of the actual activities in the city, the shared activities in the city, from local celebrations to cultural activities to physical activities, the restoration of monumentality, the restoration of meaning and the ability to share symbols in the city have a key element in building local identity and sharing in increasingly multicultural societies. Also the reconstruction of political legitimacy through citizen participation including community computer networks is an experience that has been developed in a number of cities around the world, and we badly need this reconstruction of political legitimacy because, remember, we are in a major crisis.

Kofi Annan recently commissioned a global survey of people’s opinions vis-à-vis their governments, and according to the results of this survey two-thirds of the people in the world think they are not governed by the will of the people. I know through my UN contacts that the only ones that fare relatively well are the Scandinavian democracies, but the United States does not fare well at all. So, in other words, there is a major problem with political legitimacy. It looks like local governments are better placed than national governments for the rebuilding of this legitimacy and ultimately of the trust between people and their governments. So, in conclusion, we are in a creative world, in an extraordinarily productive world, but at the same time we have major problems and potential dangers of social exclusion, personal isolation and loss of shared meaning. Public policy is essential, more than ever, to rebuild meaning and legitimacy, but because of the crisis of legitimacy and because of the complexity of managing a global problem from the global level, local society and local institutions could be key elements and key instruments in the rebuilding of both meaning and legitimacy. Not as isolated entities, but as networks of local governments. The experiences in Europe in particular of building networks of cities, the experiences throughout the world of building networks of cities could be the development of a networked institutional system, which could actually re-establish the relationship between a networked economy and the network society through networks of local institutions. In the network society, cities are at the same time the source of value and the source of meaning, but they will only be sustainable if people value this value and share the meaning.

References


