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The Impact of Market Metaphysics on Information Infrastructure decisions

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ABSTRACT:

One of the most pressing questions that governments and societies have to answer is how to develop the infrastructure of the expected information society. In this paper I will take a look at two archetypical positions: at a state-oriented and a market-oriented view. I will recount the arguments for both sides in order to then demonstrate that all of these arguments are in fact derivatives of the older discussion about state versus market that has been with us at least since Marx. I will then try to show that these arguments are based on metaphysical assumptions about the nature of markets which are not subject to empirical investigation or other means of generally recognised clarification. The paper therefore aims to show that the debate cannot be expected to ever lead to a consensus. If this is true then we have to consider ways of structuring the debate in a way that will make the results acceptable to the affected parties without being able to rely on a shared metaphysical view of problem.

INTRODUCTION

There can be little doubt that the maintenance and development of information infrastructure is a task of pre-eminent importance for the economic as well as the political and cultural aspects of the emerging information society. But who is responsible for this task? In this paper I will attempt to analyse the different answers that can be found in the literature. I will clarify which assumptions must be made by the different positions and show that there are several important philosophical views that underlie the answers. I will try to show that the different positions are characterised by differing metaphysical views of the world.

The paper will start by recounting the different aims and problems that infrastructure policies can encounter. It will then discuss in some more detail the two fundamentally different positions, the market and the government approach to infrastructure development. In the following section the metaphysical basis of the two main positions will be shown. The aim of the paper is to clarify the state of the discussion and to demonstrate that the different positions are in some ways irreconcilable because they are based on fundamentally different views of reality. This is

important to know for decision makers and for participants in the public discourse because an understanding of these basic problems is necessary if action is to be taken. Such action in turn is of high relevance given the overall importance of the subject matter.

INFORMATION INFRASTRUCTURE

The problem with defining the term "information infrastructure" (II) is that it contains a multitude of variable elements. On a basic technical level it can be described as the "coming together of computer / information technology with telecommunications" (Johnson 2000, 304). However, apart from this physical infrastructure the term also conveys the meaning of a logical infrastructure, which means all those institutions, organisations, activities etc. that are necessary for computer to render information functional and meaningful (cf. Kahin 1997, 157f). An added difficulty is that the definition changes with the perceived purpose of the infrastructure.

Goals of II Development

A more promising approach to II might therefore be to look at the aims and objectives that people see as important when they speak of it. There is again a wide range of such aims depending on the political agenda. However, most of these aims can be divided into either economic or political. Among politicians who support II measures the most frequently named reason for this support is that it is supposed to help and further democracy. In his famous speech in which he outlines his ideas on the GII (Global Information Infrastructure), Al Gore states that "the GII will be a metaphor for democracy itself" (Gore 1995, 622). The underlying idea is that democracy needs freedom and the II, most prominently expressed in the form of the Internet, is vehicle and also a guarantor of freedom. It is supposed to empower the individual member of democracy and thereby support democratic processes. A similar argument can also be made for free speech which thrives on the Internet.

Apart from this grand idea of promoting democratic freedom, the driving force behind the development of II can also be of a more mundane nature. All sorts of policy aims can be related to II planning. Among them one can find major policy subjects such as defence, research and education, or a host of others. Information infrastructure policy can also be driven by a more procedural aim such as the hope to facilitate and improve administrative tasks. Finally, there are also transnational aims that policy decision might be tailored to meet such as the aim of helping development (cf. Avgerou 1991) or international cooperation.

On the other hand, information infrastructure decisions are often portrayed as economic measures. Even if one does not want to go as far as Castells(2000) and characterise our entire economic systems as "informationalism", it seems quite clear that there is a positive correlation between economic development and the development of II. The economic aim of II development is usually to facilitate economic growth and to create jobs. It is supposed to do so by fostering competition, by decreasing transaction costs, by generally offering new economic potential. The prime example for this is of course e-commerce, which most major industrial powers try to further to the best of their abilities. While II does not aim at constituting e-commerce itself it does aim to provide the conditions under which commercial activity can thrive by using ICT.

Optimal use of II is supposed to increase productivity and thereby minimise costs on a business level and also on the aggregated level of the political economy (cf. Meso / Duncan 1998). Similar claims can be made for other aims of II development such as decentralisation, which is supposed to enhance economic development and thereby have a positive feedback on the process of II development by helping choose the optimal model (cf. Fagin 2000), or flexibility, which also affects economic and political aims in an equal measure (cf. G7 1997).

Problems of II Development

One problem of II development on an international level is that there is no political actor who can make truly global decisions. As a result of this problem policy decisions are concentrated on national or regional II projects. But even the limitation to such smaller scale problem is not easy. An example of this is the European Union. (Vedel 1997).

One of the problems produced by the fact that there is a multitude of national players whose combined effort in producing their respective NII (National Information Infrastructure) will factually result in the GII is that of compatibility and standardisation. The minimal condition for a functioning GII is the compatibility of different its parts but that is endangered by the conflicting interests of the nation states. There are several attempts to overcome this problem by constituting international groups such as the W3C, the consortium dealing with the development of future standards of the Internet. These attempts of standardisation are based on voluntary adherence to the rules, however, and cannot be sanctioned. Other ways of guaranteeing compatibility could be to wait for de facto industry standards to develop.

However, II planning goes far beyond the setting of standards and providing compatibility. An important part must be the provision of publicly accessible artefacts such as Internet backbones and the services that render them usable. If we just look at these backbones or at a comparable project for mobile communication, the introduction of the third generation mobile phones, we can see that these infrastructure projects are hugely expensive. One of the central questions of II planning is therefore how the immense efforts linked to these projects can be realised. There are two prototypical entities that can be charged with the responsibility for these activities: markets and governments.

MARKET VERSUS STATE IN INFORMATION INFRASTRUCTURE DEVELOPMENT

This analysis of the carrier of responsibility for II will focus on the underlying metaphysical assumptions that are made by different views. In order to do so the next step will be a recapitulation of arguments of the two main viewpoints, of state and market. The dichotomy of market and state as I describe it here in a simplified form is of course rarely found in real debates. Most real-life approaches are more nuanced and lie somewhere in between the two extremes (cf. Weiser / Molnar 1996). The actual implementation of II project additionally depends on many other aspects such as the size of the projects (cf. Avgerou 1991), cultural background, technology expertise etc. However, for the sake of clarity I will first describe the

two ideal types of approaches to II development: a) the state is responsible for it and b) markets should be responsible.

The main argument for leaving the development of II to markets is certainly that of costs. Few governments operate on a surplus and even those that do always have other worthy projects to spend money on. The size of the necessary investments (the US NII in form of the so-called information super highway is estimated at US\$ 400 billion (Castells 2000, 395)), precludes governments from trying to raise the money on their own.

Another frequently cited argument is that markets are better at determining and satisfying consumer interests. Private companies are perceived to be more responsive to consumers (McKnight / Botelho 1997, 278f). This is presumably caused by the functioning of markets where competition forces the market participants to offer optimal services for the lowest possible price (Chapman / Rotenberg 1995). The combination of government interests in saving costs with consumer interests of receiving optimal service and a highly favourable industry environment during the last decade or two has led to a situation where in fact "[...] the market is shaping the public perception and experience of information infrastructure" (Kahin 1997, 184).

However, there are also reasons why markets might not be the optimal instruments for II development. A first and practical one is that the interests of market participants do not necessarily coincide. Whenever the market is left to decide about II development it is hard or impossible to determine the reasons for the path that it takes. One cannot rule out that particular vested interests acquire market power in order to further their own hidden agenda. Markets favour strong players and technologically neutral solutions are not to be expected (Graham 1997). Maybe more important than technical bias is a social bias. Markets cater to those who have buying power and neglect those who don't. Therefore the danger is great that a market approach to II development will deepen the digital divide, which, in fact, is one aspect of a social divide anyway (Baer 1997).

The arguments for and against a state-controlled II development mirror those just enumerated. The different possible failings of markets in areas of system uniformity, architectural stability, economies of scale, universal access, and social equality, suggest that the state is better suited to play the leading role (Chapman / Rotenberg 1995, 637). Finally, the information infrastructure can be characterised as a typical public good (cf. West et al. 1997) and as such it should be closely controlled by the state. Otherwise there is the danger of collective overuse and lack of accountability (cf. Danielson 1996, 70).

The counterarguments against a leading government role tend to aim at the perceived weaknesses of state action. Governments are seen as bureaucratic, slow, inflexible. The rapid development of information technology is an area where governments by their very nature cannot keep up with changing developments. Putting governments in charge would therefore hamper development and growth to the detriment of all parties involved (cf. Currie 2000, 69).

The picture of the dispute between market and state is of course flawed. First of all, the fundamental decision about II development is always a political, whether the outcome is reliance on markets or governments. The actual situation is therefore one of a political *a priori*. Secondly,

markets are eminently political entities. Without a political, moral, and legal framework markets cannot function. Al Gore, for example, realised this clearly and conceded that the economic success of market controlled II development is dependent upon "sensible regulation" (Gore 1995, 623). At the same time, the decision to let markets do the job is usually based on political ideas. This can go so far as to equate certain II decisions with political ideologies.

The decision process in any real-life situation where decisions concerning II are made is of course much more complex. Many explicit factors such as culture, economic situation, general view of technology etc. play a role as well as many tacit factors such as power distribution, personal likes and dislikes and the like. However, the question of market v. state and supply v. demand plays a central role. The arguments described above are typically used to defend the decision. For the rest of the paper I will analyse some of the problems inherent in this sort of justification, namely the metaphysical assumptions about the functioning of markets.

MARKET METAPHYSICS

It is interesting to remind ourselves at this point that economics is a relatively young offspring of (moral) philosophy and the idea of markets as we see them as the basis of the economic constitution of most modern democratic states was conceived by moral philosophers. The fundamental idea of markets is that of the invisible hand. Adam Smith's most frequently quoted phrase states that "It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity but to their self-love, and never talk to them of our own necessities but of their advantages" (Smith, A. 1986 (1776), 119) This means that a deliberate amorality of markets is supposed to produce morally desirable results, namely the optimal use of resources and distribution of goods (cf. De George 1999).

On the basis of this idea, and crucial to its acceptance or rejection, the merits or problems of markets are usually discussed. This discussion about the nature and the resulting value of markets is directly reflected in the discussion about II. Political as well as economic aims of II development are directly related to the perceived qualities of markets.

A point in case is the question of markets and political freedom. Some authors see the idea of a market economy as closely related to political liberalism and consequentially the promotion of freedom (Hank 2000, 93). Since we tend to equate personal freedom with a participatory form of government, notably with democracy, the proponents of markets go so far as to say that the "free market is the only mechanism that has ever been discovered for achieving participatory democracy" (Friedman 1994, xi). Opponents to this view tend to point out that markets are at best part of a wider social structure that promotes freedom and at worst even enslave people. Similar arguments can be made about the effect of markets on power distribution. Proponents see markets as wonderful tools for a more egalitarian distribution of power (cf. Homann / Blome-Drees 1992, 50), whereas opponents have the directly opposite view (cf. Heilbroner 1985, 46).

Similarly contradicting views can be found regarding another important moral capacity of markets, their ability to create justice. The question of justice has at least two aspects. Firstly, it

concerns the problem of political freedom and participation and secondly it is affected by questions of the production, distribution, and consumption of goods. From Aristotle to Marx most philosophers agree that in order to be able to live a good life, there need to be some material goods that allow us to live an autonomous life (Aristoteles 1967, 350, 1178b; Tugendhat 1992, 131f). Markets promise the production of these necessary goods because of their efficiency and organisational advantages (cf. Hengsbach 1996, 24). The problem with this argument is that efficiency is hard to define and in economic terms it usually stands for pareto optimality (Sen 1987, 32f). A situation is pareto optimal if no more exchanges are possible that are beneficial for both parties involved. Opponents of markets point out that one possible pareto optimal situation is the one where one person owns everything and nobody else anything. This is efficient in an economic sense but would not strike most of us as just.

Proponents might stress that the strength of the market model is its flexibility and clarity. By focussing on a simple variable such as profit, complexity is reduced to a degree that it allows action (Weizsäcker 1999). The clarity and simplicity allows the market to develop the flexibility and discover the pertinent facts (Hayek 1994). Another moral advantage of markets that coincides with political motives for II development is their peacefulness. The open and free structure of markets is supposed to allow peaceful conflict resolution (cf Gauthier 1986; Steinmann 2001; Rauch, J. 1993).

Opponents to free markets point to several problematic points. First of all, markets have a high degree of means-ends rationality but otherwise seem inherently irrational (Heilbroner 1985). This means that markets are unable to determine their purpose and their limits (Zimmerli 1994; Ulrich 1997). The lack of inherent rationality can lead to undesirable developments in markets such as the production of greed, the domination of other parts of society by market powers or a general attitude of speculation. Human beings can be reduced to producers and consumers which from an ethical but also a political viewpoint may not be desirable (Söderbaum 2000).

While these seem to be the most important arguments concerning the (moral) nature of markets which are reflected in current II discussions, the brief discussion does not claim completeness. The purpose of this recapitulation of the justification of markets was to introduce the idea that the view of the evaluation of markets is actually based on metaphysical assumptions. Metaphysics is the philosophical discipline that deals with questions of being. It asks questions about the status of being, about reality, about what is and what it means to be. When I say here that the view of markets depends on metaphysics then this has a slightly negative undertone that does not refer to metaphysics in general. It means that the evaluation of markets at least partly rests on convictions that are not subject to empirical investigation or to argumentative revision. This becomes quite clear when one looks at the more than a century long debate between liberalism and Marxism. An even better example may be the discussion about economic development of former Warsaw Pact countries after the end of the Cold War. The economic malaise that most of them have been going through has been attributed to an overeager use of market mechanisms as well as a lack of markets.

These discussions show that the framing of the problem depends on the prior view of markets. Proponents cannot be dissuaded from their view by market failure just as opponents cannot be dissuaded from theirs by market success. Empirical observations in this context seem to be

irrelevant. If this is true and the decision for or against market-oriented structures is based on personal convictions and not on good arguments or empirical evidence. Where does that leave us?

CONCLUSION

The matter is clearly too complex for simple solutions. However, this paper should have clarified several aspects that can help decision makers determine what criteria to follow and which problems to consider when making II decisions. It should be clear that in order to straighten out the discussion about II we need to be aware of the assumptions behind the arguments. Especially in those cases where these assumptions are not subject to generally recognised investigation we need to make sure to at least make them explicit and thereby subject them to discussion.

Another conclusion of this paper should be that decisions about II are not simply technical ones but that they have a strong moral side. Whether II is promoted using state or market mechanisms will deeply influence who will win and who will lose in the process. The metaphysical assumptions therefore have a strong moral side and it would be helpful to underline this moral quality of the II debate.

The question then has to be how we can deal with this problem. Information infrastructure will have to be developed and decisions will have to be made on how to do so. The results will have a serious impact on the lives of many of us and given the argument above it is not to be expected that we will come to a consensus. I believe that the answer to this problem may be found in the reasons for the development of II. All of these reasons, be they economic or political, share a fundamental moral aim of improving social coexistence. If this is so then this rhetoric may be used to develop a starting point for the solution of the problem. This starting point is the realisation that II decisions involve an intractable mix of ethical, metaphysical, and political questions and that they aim at the public good. This being the case the decision must be made in a participative way that allows the affected parties and persons to make their viewpoints known. It also requires that the different moral, metaphysical, and personal aspects are treated in a holistic fashion. This means that it is impossible to discuss only one side without considering the implications that it has for the other arguments. While it is impossible to explicitly spell out how this can be done, I believe that the situation points toward a solution that incorporates a participative approach. One can find several such participative approaches in the literature, ranging from a Habermasian (1981) discourse to the stakeholder approach from the strategic management literature (cf. Donaldson / Preston 1995). The hope in using this sort of approach would be that the differing metaphysical assumptions could at least be made clear and that despite metaphysical differences a generally accepted approach to the development of II might be found. This hope is of course weak because there is no guarantee that it will work out. On the other hand, given the importance of the topic and the impact it will have on individuals as well as societies, I believe that we should embark on such a course of action as it offers the best hope of being able to address the problems.

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