

Internet Refusers

A Risk to the Digital Economy ?

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Abstract. The economic sector in Europe is preparing the most revolutionary step in its history - the shift to the Digital Economy. This shift can provide a tremendous increase in efficiency and can be the key for the European Union to become the most competitive economy in the world. However, the investments in infrastructure are costly and many of the benefits can be only realised if the shift to the digital world is large enough to make the replacement of the conventional infrastructure possible. However, in some areas such as the banking sector there is growing evidence that this might be not as straightforward as expected. A significant number of internet refusers can force both economies and administration to provide "double infrastructure" and there is a significant risk that the potential benefits of the digital economy will not be realised if the number of internet refusers increases.

1. Introduction

The strategies which support the transition to the digital economy need a paradigm shift. Presently, focus is still on those citizens within European societies who cannot get access to the digital economy either for financial reasons or for reasons of missing knowledge. In the future, strategies will have to concentrate as well on those groups who could easily get access (or even had it in the past) but who refuse to use the internet. They have some arguments that may be reasonable and others which may be obviously wrong but nevertheless effective. Prejudices which are inadequate and wrong may prove to be rather harmful. Taking this into account, strategies to address internet refusal must be discussed. The following arguments appeared in an examination by the Research Institute for Applied Knowledge Processing and were analysed in detail [1]:

- Is the internet the key driver of globalisation ?
- Does the internet increase resource consumption ?
- Does the internet provide better service or will it impose only additional burdens ?
- Will the internet flood us with information ?
- Does the internet spread mainly harmful content ?
- Is it really impossible to distinguish true and false information in the internet ?
- Is the internet a risk for cultural diversity ?
- Will the internet make people addicted and lonely ?
- Is business via the internet not secure ?
- Can the internet destabilise the international financial markets ?
- Is the internet a risk for the national security ?
- Does the internet cause unemployment ?
- Will the internet deepen existing gaps in societies ?

Examination did not concentrate on statistical analysis but on an examination of the arguments themselves and on the evaluation of the possible significance of the arguments in public discussion. Some examples are described in this contribution.

2. Plausible criticism with strategic relevance: "Additional burdens by the internet ?"

One of the major arguments against the internet are the high costs which are related to the entry into the information age. Even though the fees for access have decreased significantly in the recent years, they can sum up to amounts which are not negligible. In Germany, for example, flat rates are not very common and a surfer who forgets about time during surfing, will be confronted with surprisingly high invoices. Costs for computers and software have to be added on. The amount of 1,500 Euro for a computer is rather high, if the short period of usage is considered. After 3-4 years the hardware usually is out of date and has to be replaced.

Moreover, within the recent years the computers became only cheaper with respect to their performance, the absolute price and thus the hurdle for the entry to the information age has more or less remained constant. The development of low-cost alternatives to presently available devices has been neglected both in the U.S. and in Europe, whereas there are initiatives in India (Simputer) and Brazil. If the lifetime of a computer is three years, it costs about 10 Euro per week and if the computer is used for an internet access of 2 hours weekly, being one hour online costs 5 Euro for the hardware (apart from costs for the access). For most users this example may be unrealistic because most computers are used for other purposes like computer games and writing letters as well. But it should be kept in mind that there are many people who communicate almost exclusively verbally and many, who are not interested in computer games. These groups are becoming more and more relevant for internet campaigns when those, who have interest and some basic skills in IT, are already in the web. They could prove to be resistant against internet campaigns if they do not find adequate content in the web. More than 1,500 Euro of investment just to download favourite cooking receipts from movie stars cannot convince them to use the new media. Besides financial aspects a lack of comfort is a further obstacle for the expansion of the internet. From the purchasing of hardware to surfing in the web there is a good deal of work to be done. The devices must be connected, software must be installed and a provider has to be chosen. All this may be problematic for newcomers and many people doubt if it is worth the efforts. And why should someone who has only two or three bank transfers per month do all that work and learn how to deal with identification and transaction codes. The bank has the advantage that less staff is needed and the customer has to do the work.

These are strong arguments and it will only be possible to convince people all over Europe to use the internet if it is not expensive and if both access and handling are facilitated. As long as this is not achieved, the cost argument and the workload argument cannot be addressed successfully. The reduction of the investment costs may prove to be one of the keys on the way to internet for all Europeans.

While there are hardly possibilities to influence hardware costs, there is the possibility to support public access. In this context initiatives which facilitate public access are of high importance. An example is the foundation "Digitale Chancen" in Germany. The initiative is providing a directory of all public places in the country where internet access is offered. The information includes details such as costs for access, opening hours and the number of terminals available. The directory is available not only online but also via a phone hotline. Moreover, the website [2] offers a large amount of information on all aspects of the digital divide: information is given about disadvantaged groups of the population such as unemployed people, disabled or elderly ones. Public internet access can both reduce barriers for those who have not yet been online and it can be a cheap alternative for those who need access only occasionally.

3. Unreasonable criticism may nevertheless become effective in public discussion:

"Will the internet make people addicted and lonely ?"

Frequently, reports are published, which indicate phenomena like internet addiction and there seems even to be a scientific community which addresses the problems related to the over-use of the new media. There is even a sophisticated terminology addressing different aspects of the problems. There are definitions of (Inter) Net Addiction, Internet Addiction Disorder (IAD), Pathological Internet Use (PIU), Cyberdisorder, Cybersexual Addiction, Cyber-relationship Addiction.

However, a closer examination of many of these studies reveals that they are not scientifically sound. They are based on internet surveys and the group examined is not representative. In contrast, the procedure of asking people online to fill in hundreds of questions on the websites of psychologists may cause a significant pre-selection. Maybe there are some cases in which people lose control about their internet use, but it is surely not a widespread phenomenon. However, this does not necessarily prevent the addiction argument from being effective in public discussion. Further arguments which are not very well founded but used in public discussion are related to negative consequences of IT in the education sector.

4. Arguments with high relevance but few consequences

"Does the internet increase resource consumption ?"

In the 90's of the last century scientists were still rather optimistic in their forecasts about the effects of information technology on resource consumption. "Everything will get smaller and thus more environmentally friendly" was the predominant opinion. But this euphoric attitude has vanished. On the one hand it turned out that the IT-hardware even though being considerably small has a large ecological Rucksack. During production large amounts of resources are needed. On the other hand it became visible that even in those cases in which miniaturisation actually is correlated with a decrease of demand in resources, this efficiency gain is transformed into lower prices, stimulates consumption and thus indirectly causes an increase of resource consumption. This effect is called rebound effect [3] [4]. Often scientists believed that they had solved a problem by technological improvements but some time later it came back like a boomerang.

Two groups of rebound effects can be distinguished [5]. There are primary rebound effects which are related to the direct consumption of materials or energy by the IT hardware. Environmental problems caused by the production of IT hardware and the increase of the amount of electronic waste belong to the primary rebound effects as well. But IT can also increase resource consumption via induction of lifestyle changes and cause secondary rebound effects.

A sustainable information society needs a more environmentally friendly technology. The danger that computers could bear risks for the environment was not sufficiently addressed in the past but the wider the technology will spread, the bigger the problem will be. There is no longer evidence for the argumentation that information technology might create a win-win-win solution providing economic growth, working places and environmental benefits at the same time. Economic growth has been created by IT as well as new working places and there have been many ecological benefits for example by environmental information systems. But mass application of the new technology poses new challenges. 300 million Europeans who dispose of their hardware every 3 years because the computers are out of date after that period, are not a positive vision for the future but an ecological nightmare.

The information society will probably change daily life even more than the industrial revolution did. Being still in a relatively early stage of the changes ahead, we can presently not forecast the development and its consequences in detail. There are two different pathways possible which can be described by two different hypotheses [1], the optimistic substitution hypothesis and the pessimistic addition hypothesis on which internet criticism can be based on.

4.1 The "substitution hypothesis"

By help of the new information technologies, real products and services will be replaced by virtual ones. The transition ahead is as fundamental one as the transition from the agricultural to the industrial age. The life of people is transferred more and more to cyberworlds and resource consumption in real life decreases. Data highways replace physical highways, virtual conferences replace physical conferences and most meetings will be done via video and internet. These assumptions are supported by research which shows that people in all industrial countries tend to post-materialistic attitudes and values.

4.2 The "addition hypothesis"

The replacement of the agricultural economy by the industrial economy took place only with respect to workforce, where a shift from the countryside to the factories could be observed. On the material level, however, industrial production was added to agricultural production and no substitution took place. After industrialisation even more agricultural products were produced due to a positive feedback. The emergence of the New Economy means a shift of labour again, this time from industrial production to the IT and service area. But again, there is substitution only with respect to workforce. On the material level, the information technologies have a positive feedback on industrial production, too.

4.3 Information Technology as Pandora's Box ?

From the "addition hypothesis" a Pandora Scenario can be derived, leading to an ecological disaster. The magnitude of the positive feedback effect was restricted in the case of the transition from the agricultural to the industrial society. The increase of efficiency enabled both an increase of population and made it possible to consume more meat which needs more energy for production than grains. But there were limits to growth and when overproduction occurred, it was reduced again. In the case of the positive feedback of information technology on industrial production, there are however less limitations from the demand side and it seems that our hunger for new products never ends. Natural restrictions like the need to maintain ecosystems and the environment are not included in the mechanisms of growth and in the pricing system and are therefore ignored. The new information technologies will not contribute to sustainable development but will be used by humankind to accelerate to a dead end. Just as Pandora brought evil to the world by opening the secret box, information technology enables a drastic increase of material consumption (the evils from the standpoint of nature) which have a disastrous effect.

Videoconferences could actually replace business travel and thanks to IT offices could operate today without using paper. A development according to the substitution hypothesis thus would be possible. However, if we look at the present global trends, it is more probable that a development occurs which points into the direction of the addition hypothesis.

4.3.1 Information technology and mobility

People are today as mobile as they have never been before and there seems to be a close relationship between communication and travel behaviour. They increase in parallel. In contrast to prior assumptions, email and videoconferences do not only replace physical mobility, they do also induce new mobility and this effect may even dominate the net result.

Lobbyists often argue that IT-devices would lead to replacement of highways for cars by information highways. But so far, such a trend cannot be observed. We use the new technologies to increase our communication activities and at the same time travel statistics show that street traffic continues to increase.

4.3.2 Will there be more transportation of goods because of E-Commerce ?

Transportation of goods is also increasing. There seems to be no limitation to street transport whereas railway transport shows a long term decrease. The influence of E-commerce on transport is still unclear. There is the danger that transport is increased because products from remote regions become accessible more easily. Shopbots help us to find cheap products independent of the location and if transport is cheap, people will order them also from distant locations. A study for the Australian National Transport Secretariat [6] estimated that by e-business the transportation of goods could increase 50% by 2005 .

4.3.3 A fairy tale: The paperless office

The story of the paperless office is a further example for the missing realisation of potential benefits of the information technologies. After the invention of computers themselves did not enable paperless work, there had been the hope that internet and email which make the transportation of files very comfortable would lead to a breakthrough. But until today there is no reduction of paper consumption in sight.

4.4 Criticism remains without consequences: Eco-schizophrenia

Surveys carried out on the topic of environmental consciousness arrive at the result that population in Europe is very concerned about the state of the environment. 80% of the Europeans believe that they will be exposed to dangers which arise from poisoned soils within the next years, more than 60% are afraid of climate change, 65% are afraid of poisoned drinking water.

Thus, environmental consciousness is very high. 80% of the population in Germany claim to have actively contributed to the protection of the environment and 45% would be ready to work as volunteers in an environmental initiative. But these are statements in polls, an examination of the actual behaviour gives different results. Obviously the environmental awareness does not result in changes of behaviour. The examination of the third of the German population which is the most environmental concerned group according to verbal statements revealed that

- 74% went by car or by air into their last holidays
- 54% own a car
- 39% did not care about saving hot water

The everyday life of the spearhead people in terms of environmental awareness is not sustainable at all. Researchers figured out that the overall correlation between awareness and environmentally friendly behaviour is only 0.15. The phenomenon of contradiction between environmental awareness and behaviour can be labelled as eco-schizophrenia [5] and is not only found in the private area but is also characteristic for some companies. A survey among e-business companies [7] showed:

- 65% said that social and environmental issues are important or very important to their company.
- 58% agreed that e-commerce will have positive effect on the environment.

but the survey found out as well,

- that 79% of the companies do nothing to measure or manage their environmental impacts.
- that 82% do nothing to measure or manage their transport impacts.

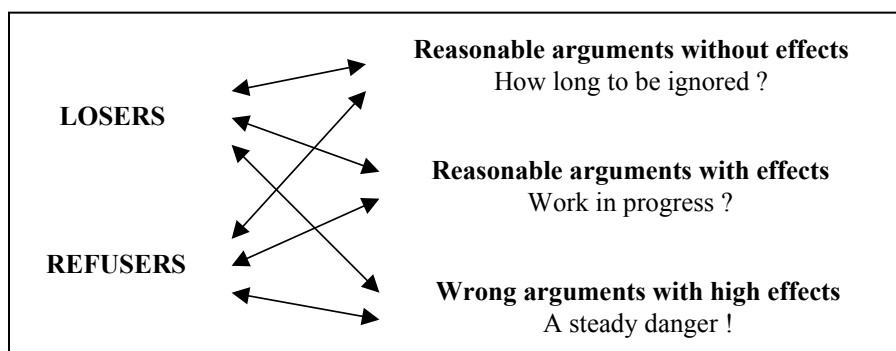
- that 83% offer no staff training on environmental or social issues.

Obviously there is a very long way from environmental awareness to environmentally friendly behaviour. Obstacles are both financial aspects and snuggness. A company which decides to invest in environmental measures has an economic disadvantage, either a short term first-mover disadvantage which can later turn into an advantage if standards are set adequately, or a permanent one if the other companies and legislation don't follow and the consumer does not reward the initiative. Loewe constructed an easily recyclable TV very early but the project failed because neither the EU nor the German government set adequate frameworks to support recycling.

And a citizen who decides to live environmentally friendly risks to be laughed at by his contemporaries. The "prototype of a sustainable citizen" would live in a small flat, he would not travel, possess no car, would re-use shopping bags and would not buy exotic fruit. This lifestyle is practised only by pensioners with small income whereas the ecological activist after re-using shopping bags leaves his large flat and goes for meditation to the Himalayan. Obviously, the post-materialistic values which the substitution hypothesis refers to, exist only in the minds of people. On a high level of saturation of demand for consumption people re-discover non-material values but they don't decrease consumption. Ecological progress often has only a weak correlation to environmental awareness or post-materialistic attitudes. It is often supported by economical or even sometimes by safety aspects as in the case of the reduction of air traffic in the second half of 2001.

5. Conclusions

There is an urgent need for a paradigm shift in campaigns for an "internet for all". In the future there will be less and less people who would like to have internet access but cannot get it because of lack of money and knowledge ("losers") and there will be more people who could have access to the internet and do not want to have it ("refusers"). Moreover, the argumentation for the use of the internet has to take into account that there are in fact reasons for non-use which cannot be easily overcome even though they are not realistic, whereas other arguments are well-founded but presently do not have effects in public discussion (some may be "sleeping topics" which may develop sudden public resonance later).



Thus, campaigns for an "internet for all" have to be highly diversified in the future, taking into account both the positions of the groups addressed and the different "nature" of the various lines of argumentation. In parallel, the problems related to the web which exist in fact have to be addressed urgently. In the present international race for 100% internet connection, it will not be decisive who sells most computers and software in short-term periods. If the introduction of a technology in an area or application is pushed too early (for example many e-business applications are not secure enough yet) and there occur "accidents", the introduction of the new technology may be delayed much more than it would be delayed in the case of the introduction of safe systems at a later time.

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