

CECUA ACADEMY

The users: Hostages of the Free Market?

by

Dr. Bruno MARTUZĀNS

Katrina SATAKI

Iveta SKUJINA

Research group Riga Latvia

October 2006

Foreword

At the level of organization CEUCA need a broad spectrum of expertise to deal with the various issues. Those issues are not only technical but also legal, economic, social and political. They need to be addressed by a team of experts from the various disciplines and geographies. As reported in the CECUA Yearly Report for 2005 there have been discussions to set up a separate organization, the CECUA ACADEMY, to deal with those issues. The academy needs to attract experts from the various disciplines and geographies to work in ad hoc teams on research projects.

After the success of CECUA's involvement in the French voxinternet project (www.voxinternet.org), the Belgium Namur "Foresight of the Internet" program, the work done closely with the Oxford Internet Institute within the European Internet Coregulation Network and the excellent feed back of the Riga and Vilnius conferences, linked to the launch of the FP7, it has been decided by CECUA to move forward and set up the CECUA ACADEMY and for a start to run a pilot project, a pilot project which will eventually lead to the formal foundation of the Academy. And CECUA was fortunate enough to find a group of enthusiastic Latvian experts who were both interested and willing to accept the challenge of joining the pilot project. The Riga research group is made up of experts from mathematics, computer science and law.

The Riga research group was given a broad mandate to look at the Lisbon agenda as a user and from the point of view of a new EU member state. We felt it was very important and also relevant to get the opinion from a new member State while the period before and after joining the EU was still fresh in their mind, all people born into a previous soviet economic model and now living in the free market and liberal model. The group of Dr. Bruno MARTUZĀNS, Katrina SATAKI and Iveta SKUJINA present this report entitled „**The Users: Hostages of the Free Market?**”.

The report raises many interesting points and poses many more questions on European and also global issues including digital divide as seen from their Latvian point of view. Also the report shows that more research needs to be conducted into the societal and economic implications of present European and global situation. From the beginning CECUA has been involved in the various Framework Programs, e.g. ENCORE and SCOFI to name a few. We hope that the CECUA ACADEMY will be following that tradition and actively pursuing research projects in relevant areas.

I would like to express our gratitude to the researchers and hope this report will show the need for such research and lead the way to come for the CECUA ACADEMY.

Dr. Jon Thorhalsson, CECUA President

The views and opinions expressed in this report may not necessary reflect the opinion and views of CECUA but are presented to promote discussion and debate.

The users: hostages of the Free Market?

Dr. Bruno MARTUZĀNS, Katrina SATAKI, Iveta SKUJINA

Abstract. Making people buy something newer and newer is the essence of the market. Though it does not seem that overfunctional hardware and software truly correspond to the needs of customers, nobody has investigated what functions of computers are really needed by various groups of users. Today all users are forced to buy more or less the same goods just because there is no other real choice.

Keywords. Overfunctionality, fashion-diven market, Lisbon strategy, digital divide, information society for all.

Introduction

There's an old story about the person who wished his computer were as easy to use as his telephone. That wish has come true, since I no longer know how to use my telephone.
-- Stroustrup

As stated in the Lisbon strategy, Europe puts forth a new strategic goal for **2010: to become the most competitive and dynamic knowledge-based economy in the world**, capable of sustainable economic growth with more and better jobs and greater social cohesion. Keeping in mind this objective, today, in 2006, when we have less than four years remaining, it is essential to evaluate the current situation and analyse the trends to estimate the length we still have to go.

The main slogan brought forward and heavily used by European politicians and not only by them is: “**Information society for all**”. Who are those mysterious “all”? We strongly believe that “all” refers not only to politicians, business tycoons, technologically savvy people, but to users in general, and computer users in particular. But “for all” also has a much broader meaning: all users should be treated equally – no matter where they live, what language they speak, how old they are, and what hardware or software they use.

Speaking of the information society, another topic, “**the digital divide**”, comes to mind. It is obvious that the information society for all is not conceivable without overcoming the digital divide separating computer users from economically well-developed and poor regions. There are several aspects covered in the Lisbon strategy that are very significant when speaking on this increasingly important topic that were specifically pointed out for the purpose of this paper, namely:

- every citizen must be equipped with the skills needed to live and work in this information society;
- bring a substantial reduction in the costs of using the Internet;
- investing in people and combating social exclusion;
- friendly environment for starting up and developing innovative business, especially SMEs; further efforts to lower costs of doing business.

Not doubting the necessity of above-mentioned tasks, it is however necessary to take a deeper look at current trends that show we have taken a completely different path that drives us away from the goal.

The main aspect we are covering in this document is a lack of choice for users joining and forming the information society of the future today. Today's reality exercises a "take it or leave it" strategy that hardly is a value that European Union should stand for. The purpose of this document is to show that this strategy leads us to a dead end and information society for selected few. We called the present strategy "*Overfunctionality*".

The CECUA ACADEMY mission statement states "...since the US has the legal ownership of the Internet, it leads naturally to a policy of "the US market knows the best"..." To understand the processes better it would be important to understand some of the driving forces of the US market that are crucial for computer users, though the American market does not seem awfully different of any other free market.

One of the main qualities of the US market is its fashion driven character. This does not mean that Americans have invented fashion as a market driving mechanism, or that people in other parts of the world do not use this market driver. It seems, however, that Americans are the most experienced in and profit most in a fashion driven market.

There are no reasons to discuss here the role of fashion in the marketing of dress, garments, jewellery, cars, etc. – in these businesses the fashion arises more or less naturally, though it is controlled, managed and fuelled by serious people, to guarantee regular changes of offered products, active sales of these products, and non decreasing profit for the appropriate industry branch. It is much more interesting to reveal how fashion is germinated and introduced into the market of technical equipment, especially into computer and communication hardware and software. And, surely, it is important to know how these processes impress the users of this kind of equipment

1. Overfunctionality in general

First thing that comes to mind is that the modern equipment offered on the market has too many functional options. As an illustrative example one can indicate the mobile telephones with built-in cameras. These cameras are used so infrequently that any rational reasons for having this option are hard to propose, especially when taking into account the moderate quality of the pictures. However, now it is practically impossible for a user to buy a mobile telephone *without* a camera.

In other words, users pay for an option that will not be used, and they have practically no choice.

Gene Sperling, in his book "*The Pro-Growth Progressive: An Economic Strategy for Shared Prosperity*"; 2005. New York; Simon and Schuster informs that "Nokia [...] has found that in the new global marketplace, efficiency is not enough. In 2004, it saw its market share drop from 35 percent, where it had been for five years, to 29 percent when it fell behind in the fashion-driven market for flip-phones, colour screens, and camera phones." A conclusion can be made that in the beginning the mobile telephone devices being very useful and splendid invention, and having only communication function, could be sold for relatively high price, but later the production of the devices became much more intensive and cheaper, the competition increased, the prices dropped, and some additional features were added to keep prices at the previous level.

This phenomenon has even occupied a part of national culture in Japan where the special term – *Chindogu* – was proposed for inventions that are so over-functional that they have become meaningless. An example for *Chindogu* is wipers for eyeglasses. No doubt, the invention is useless, however, it should be mentioned that the problem of misted glasses is not completely solved yet and still is waiting for a solution.

Nobody has investigated what functions of computers are *really* needed by various groups of users. As a result, all users are forced to buy more or less the same goods just because there is no other choice. And even worse, as we will illustrate later, they are forced to make numerous repeated buys not out of their needs but out of the dictate of the market. The market that could be divided in two: a market of hardware and a market of software. Both sides of the same coin they support and promote each other, benefiting from unprotected users.

2. Hardware and users

The overfunctionality of equipment is clearly seen also in computer hardware and software. The progress of semiconductor industry is very fast and new types of devices are launched regularly. What is even more important, the device processing becomes more and more effective and, as a result, devices grow so cheap that their production in the competitive market environment does not bring good profit or brings even no profit at all.

Quite frequently the manufacturers solve this problem by improving an existing device. For example, a new processor of higher performance is developed and introduced in a computer which now becomes the computer of new generation.

The fashion driven market has many excellent features for manufacturers, but it is not always so good for customers, however.

Let's investigate an example. A home computer was quite randomly chosen from the offer of an Internet shop with the following characteristics:

Computer A:

Processor: Intel 346 Celeron 3.0GHz
RAM: DDRII 512 MB PC400
Hard drive: 80 GB 7200RPM
Price ~370 Euros

One may imagine a computer with arithmetically 10 times inferior characteristics:

Computer B:

Processor: 300.0 MHz
RAM: 64 MB
Hard drive: 8.0 GB

Such a computer B looks even better than best computers offered on the market 10 years ago, when the price of the best computers for that time was approximately the same as it is now. It would be only logically to assume that now the computer B being 10 times worse than the Computer A should be sold for 10 times less price – 37 Euros. Unfortunately, the market does not offer computers for such price at all, and not even for doubled price of 75 Euros.

It is quite possible that production expenses for making a small hard drive of capacity 8.0 GB using the same technology as is used now for production of 80GB drives will be approximately the same for both devices. The same might be true also for other parts of the computer, but no studies of the subject are known.

It is very common belief that many companies make devices less viable than it would be possible. It is believed that many devices are capable to work for their warranty period only and not a single day longer. For example, the car market in Latvia shows that the people in general prefer to buy used cars made in Germany. It is presumed that those cars will run for much longer time than Japanese cars that are believed built to run for a warranty period only. It should be added, however, that the Latvian market of new cars shows preference to Japanese cars because of their price performance. Another, much worse example are the devices that have batteries intentionally made unchangeable, so the customer should buy the whole new device, if the batteries have run out.

As for computing equipment, usually it ends its working life before the physical end, mainly because *people are pushed to buy* new and more fashionable equipment. Some variants of this general idea are easy to find in the modern market of computer hardware.

For example, in any institution widely using computers one can find several old-fashioned printers in working condition that are not used anymore, because they have ran out of powder and such powder can not be bought more, or because of lack of ink and such ink is not sold any more, or in case of especially old devices – because the printing tape is worn out and it is clear that no shop assistant has heard about tapes for printers.

Another example is a user that owns, e.g., a six years old computer quite suitable for his needs, but he just is not able use it if any part breaks down, because it is not possible to buy, for example, a mouse with a COM port adaptor. The market actually forces a user to buy a newer computer without an actual need for that. Of course, on the large markets in well developed countries there are possibilities to find such old-fashioned equipment, but for small markets this is a substantial problem.

It is also a widely adopted practice that some computer equipment, especially printers, are sold for a very low price, but the consumables of this equipment are charged enormously high. For example, for printers it is ink. Epson Stylus DX3850 was recently sold for 90 Euros. This is a multifunctional printer with possibility to work as a copier and a scanner, and also good OCR software was supplied with the device. A set of 4 ink cartridges (one set supplied also together with a printer) for this device costs about 30 Euros. It follows that this device without ink cartridges costs the price of two sets of ink cartridges. To say the truth, it is very difficult to imagine that ink in the cartridges is comparable in value with complexity of the device itself. There is no reason to prohibit such market strategy but another problem could be stated.

How to give a customer the possibility of choosing either to buy low cost equipment and expensive consumables, or more expensive equipment and cheaper consumables?

Now, let's analyse in more details the goals pointed out in the preamble of this document and the way over-functionality of hardware might affect them:

Goal: Every citizen must be equipped with the skills needed to live and work in the information society.

Reality: Do the users actually need to know the characteristics of their hardware? Do they have to follow all the changes of computer standards? Do they have to know what hardware components they need? Definitely, not. The skills they need are of completely different value. All they need to know is how to use the hardware to perform their daily tasks. Market pushes users into spending time to learn about hardware more than it should be necessary for their work.

Goal: Bring a substantial reduction in the costs of using the Internet

Reality: Hardware needed for the Internet is not demanding. It would be enough to have several years old computer. But it is not possible for users to use their old equipment because of a lack of spare parts and software support (as it will be discussed in more details in the next chapter).

On the other hand, Internet costs for Internet connectivity is dropping significantly. Current strategy of Internet service providers aims at over-provisioning of bandwidth rather than at a management of the Quality of Service. But Internet Service providers are facing the same problems as ordinary users: fast hardware ageing, need to invest in new hardware. Together with the rise of salary it brings up a question: how long will they stand this pace? Especially in less developed countries. And still a price for optical fibre connection from Europe to the United States is much cheaper than even lower bandwidth connection between European states. Users are the ones who pay for that!

Goal: Investing in people and combating social exclusion

Reality: The current trend shows that there is a need for investment in hardware. And with a fixed amount of finance available (which is a case for most less developed and even well developed countries) that causes, firstly, less investment in people, and secondly, the exclusion of those people who have already invested in hardware some years ago. If they are not able to supply more finance, they are not able to participate in the further processes. So, the rapid hardware ageing deepens the digital divide!

Goal: Friendly environment for starting up and developing innovative business, especially SMEs; further efforts to lower costs of doing business

Reality: Constant need for hardware upgrades due to market or software (see next chapter) development causes constant growth of investments into business which is unlikely to lower costs.

3. Software and users

The reason why computers of the above-mentioned type B are not available in the market is possibly because this type of computer could not run "modern" operating systems. It is also true to say, even more, that computers of type A also do not always work well with the latest operating systems.

The only reason, or to say it more mildly – the main reason, why the type B computers cannot work properly with the now “fashionable” operating systems, is that these systems are overfunctionalised. They have a lot of features that will not be used during the lifetime of a particular system. The same is true of application software. Future versions cannot be used on

these computers, so the user cannot use the latest version in accordance with the contemporary fashion. Again, it is not possible to buy and use less fashionable system and applications. Everybody should buy the whole set of the system with the possibility of making some choice during the installation.

Even worse, an old computer running “old” operating system is not safe to use, because the hardware, operating system and the software is not supported anymore. No more upgrades, no security patches, no new applications.

Does any research exists that studied the usage of different features of operating systems and application software (say, MS Word) by various groups of customers?

Such research would help a better understanding of what software is really necessary and what is not necessary.

Another aspect that has to be taken into account when discussing software issue is that software has to be adapted in native languages of computer users. On 22 November 2005 the European Commission adopted a Communication on Multilingualism – a new framework strategy for **Multilingualism**. This policy has three aims:

- to encourage language learning and promoting linguistic diversity in society;
- to promote a healthy multilingual economy, and
- to give citizens access to European Union legislation, procedures and information in their own languages.

As noted in respect of information society, **linguistic diversity is a fact of life**. The Commission is working to promote multilingualism as part of the i2010 initiative to foster growth and jobs in the information society and media industries. The first task is to create “a single European Information Space, offering rich and diverse content and digital services.”¹

It is obvious that multilingualism plays one of the key roles in overcoming digital divide on the way to information society and especially knowledge-based society. Another driving force is economical aspect. In the scope of this document these aspects are viewed as two sides of the same coin – the coin that for long has been viewed from one side only.

Users in rather small countries face more problems using software adapted to their languages. First of all, due to the relatively small number of users, it is not economically profitable to do a translation. As a result translated software is more expensive.

Also quite frequently, the new hardware and software come with new terminology. The new terms sometimes are really needed, but sometimes they reflect the new fashion or the new marketing strategy of the company. The new terms should be translated in other languages, and new terms in the target languages should be found.

It is rather easy to state another problem. *De facto* although not *de jure*, the English language has become the main language of the computer users world. All countries should translate books,

¹ <http://europa.eu/languages/servlets/Doc?id=913>

instructions, manuals etc. from English to the local language. So the multilingualism in fact means English + another language(s).

To guarantee the progress of the language, special terminology commissions are set up that propose best translations of new English terms. The creating of the new terms is not always easy, and for this reason the new terms in other languages come after some delay, and when they come, they struggle for survival with the original English terms or localized English terms. Not always is this effort successful. Terminologists are frequently criticized even more than politicians. This is not the problem, however. The problem is that the new terminology in English arises quite randomly and nobody caring much about it. It is created completely neglecting the existence of future translators and terminologists, and sometimes also the existence of users. And, of course, it is overlooked that the new terminology will have to be learned within the framework of life-long learning (either in English or in another language or both).

Can one dream about responsible emergence of new computer terms in English when they are really needed?

As to the economical aspect, let's observe the changes in price as software travels from the United States (and most software does): one can spot certain pattern. Let's give an example of the well-known and widely used graphical software X. In the United States where it is produced, it costs USD 600. In Germany price is EUR 600, but in Latvia – LVL 600 (~EUR 854). Users of poorer regions for the same product have to pay more! In addition users from poorer regions are not able to get localized software.

May be it would be cheaper to teach English everybody once than continuously localise terminology and software?

The problems identified above obviously are not bringing us nearer our goals:

Goal: Every citizen must be equipped with the skills needed to live and work in the information society.

Reality: changes in software do not affect user skills so dramatically, as average user do not use most of sophisticated features offered by each new version. But from the other side, the issues of compatibility are also very important. Users do not have to worry about such things. But in reality they are forced to do that. Further, they have to re-learn interface, formats, different platforms, etc.

Another problem is safe Internet usage. For average user it is not possible to configure a firewall (they don't even know what it is and actually they should not have to worry about it), secure web browser, update anti-virus software. But they are forced to go deeper into computer engineering in order to safeguard their data and their equipment.

Software they buy needs frequent updates in order to correct errors found in the product.

The lack of localized software means that users have to learn how to work with a computer in English or any other non-native language.

Goal: Bring a substantial reduction in the costs of using the Internet

Reality: Unlikely so. The need for anti-virus software, firewall software, secure web browser, or mail client is not a cheap one, and it does not become cheaper in the multilingual society.

Goal: Investing in people and combating social exclusion

Reality: During recent years the concept of life long learning has become very popular, especially after the adoption of the Lisbon strategy. For example the Report from the High Level Group chaired by Wim Kok November 2004 named *The Lisbon strategy for growth and employment*² declares that "...lifelong learning is not a luxury, it is a necessity — for if older people are to be able to remain active, they need to be equipped with skills that match the requirements of the knowledge society". This is a really excellent declaration, and nobody can object to this declaration.

It seems, however, it would be reasonable to understand how much of "the requirements of the knowledge society" are dictated by the fashion driven market. No doubts, anybody who wants to correspond to the newest fashion should learn and acquire new skills.

Introducing either a new generation of computers, or an operational system, or application software causes additional expenses not only in money, but also in teaching, so some part of **lifelong learning is caused by lifelong buying**.

The planning and organisation of lifelong learning and teaching of new skills would be more effective, if the investigations had been carried out about the fashion driven component of the lifelong learning.

Goal: Friendly environment for starting up and developing innovative business, especially SMEs; further efforts to lower costs of doing business

Reality: the amount of investment for a newly founded SME in terms of software is tremendous if compared with other investments and their Return On Investment. One of the ways to reduce the costs is to promote the usage of freeware rather than proprietary software.

Conclusion

As can be seen, we are still a long way from the goals set in Lisbon and it is unlikely that the current way we are going now will ever bring us any closer. Making people buy something newer and newer is the essence of a market, though it does not seem that over-functional hardware and software truly meet the needs of customers.

It is not an easy task to invent a new and attractive function of a computer or software. The development of computer technology is now to "top up" computers with various multimedia features, for example, 3D graphics with good animation for computer games.

It is quite clear, however, that there are some groups of users, for example, civil servants, who do not need games with 3D graphics and even 2D games, so computers could vary dependant on user groups.

² http://europa.eu.int/growthandjobs/pdf/kok_report_en.pdf

Generally speaking, it is not a new idea to construct a simplified and cheaper computer for the countries and people living beyond the information gap. To some extent this idea was carried out 10-15 years ago, when many groups of people from Western countries endeavoured to develop modern information society in Eastern European countries. They delivered used old-fashioned computers to these countries and hoped this hardware will be successfully used. In reality the computers were capable of working, but their usage was very limited, mainly because these computers did not correspond to the current computer fashion and would not support the then current software.

Recently S. Lacy at October 4, 2005 in Business Week Online published “Help for info age have-nots”³ that promotes the same idea – to create a computer for internet access only. By the way, this idea was rather popular some 6-8 years ago, but was not implemented, though it does not seem useless even for more developed countries.

The most recent success of this type was announced in eWeek on June 8, 2006 “Working Model of \$100 Laptop Steals MITX Spotlight”. The article presents a laptop that the association [One Laptop per Child](#) wishes to put “into the hands of children in developing countries”. The laptop really possesses interesting and original features, even those, that nowadays are rather fashionable (modern), such as wireless Internet access. Nothing is said, however, about possibility of upgrading these computers to the level of most fashionable (modern) computers.

It seems, however, that by classifying users by the development level of their countries is not the best one, or in any case it is certainly not the only one. The possible demand for fashionable computer games is not much lower in less developed countries than in the developed ones, so the gap in well engineered computers with 3D graphics facilities could remain unsatisfied in these countries. Similarly, the job that clerks should do with their computers differs not so much if less and more developed countries are compared, so the specially constructed much more cheaper computers could be developed for this category of users in all countries, but these computers should be up-gradable. It is clear also, that the communication with officials that ordinary people in less or more developed countries should conduct by computer are the same from the point of view of data transaction.

It could be supposed that simple, cheap and *up-gradable* computers would be desirable even for well-developed countries, if they are to continue to develop.

It seems, however, that the principles discussed here are consequences of a universal principle of the conservation of freedom in the free market: the total amount of freedom in the free market remains constant - just customer freedom can be converted to vendor freedom and *vice versa*.

Acknowledgements. The authors would like to thank Jon Thor Thorhallsson for inspiration and creative discussions, Stuart Gould for valuable comments and friendly help, and reviewers of the paper for their efforts and suggestions.

³ http://www.businessweek.com/technology/content/oct2005/tc2005104_6877_tc024.htm

About the authors:

Dr Bruno Martuzans

Born 1939 g. in Latvija, Jaunlatgales apr. graduated from Latvian State University 1961, Ph.D. in Mathematics 1975, Latvian State University.

Working from 1960 in Computing Centre of Latvian State University (from 1990 Institute of Mathematics and Computer Science of Latvian University) as research scientist, senior and leading research scientist and head of laboratory.

Beginning of 1994 his main research activities lay in the Internet applications and information and education in the Internet.

Dr.B.Martuzans is the author and coauthor of more than 70 scientific publications including a scientific monograph published in Japan 1995. He is the author of a children book on programming published in Riga and Moscow in Latvian and Russian languages (1985-1988), of many popular articles about Internet, and research reports on the education problems.

Current research activities:

- Education and information dissemination via Internet.
- National Observatory project of European Training Foundation on vocational education in Latvia.

Katrina Sataki

Born 1971 in Latvia, graduated from University of Latvia in 1993 B.S. in Mathematics, University of Latvia 1997 M.Sc. Computer Science and University of Latvia 2006 Lawyer.

Presently Katrina Sataki is the Head of Network Services Development Department, Institute of Mathematics and Computer Science of the University of Latvia

Katrina Sataki is the author of several publications on the use of computers for end users.

Iveta Skujina

Born 1981 in Latvia, graduated from University of Latvia in 2006 as Lawyer. Since September, 2006 Iveta Skujina studies at the University of Latvia in M.Sc. Law programme.

Presently Iveta Skujina is Head of Legal division, Network Services Development department, Institute of Mathematics and Computer Science of the University of Latvia.