

Abstract

RIUSA (An intelligent reuse of IT equipment)

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Computer and TLC have made our life much easier while improving the effectiveness of business and education, but the overwhelming progress of the technology has also criticisms.

- European citizens dismiss more than 100 million tons of cellular phones every year, while in Italy the municipal waste service has to provide for disposal of more than 14.000 tons of Personal Computers and more than 15.000 tons of Fax, printers and copy machines. These figures show that E-waste is causing increasing harm to the environment since about 90% of the complex mixture of hazardous materials which constitute the core of the electronic equipment is landfilled, incinerated or recovered without any kind of pre-treatment. Thus PTB, PCB, heavy metals, mercury and other halogenate compounds may pollute the fields and the water of springs and rivers, with serious consequences on the fruit, vegetables, fish and meat that we use to eat.

This is the reason why the WEEE (Waste of Electrical Electronic Equipment) recommendation was issued by the European Parliament in 2002. The directive calls for a specific financial and/or physical responsibility to be taken by the producers of electronic equipment for a certain phase of the waste management of their products. On the other side it is recommended that an improvement treatment and recycling of e-waste is ensured in order to reach at least 65% of re-use of e-waste by 2007.

- The access barrier to ICT tools and equipment is causing an increasing disparity to single and communities with strong social, economic and cultural limitations. It is the well known Digital Divide which affects those people who cannot afford to buy expensive appliances or to pay for the cost of commercial software licences. This lack of access may also harm the citizenship as it can reduce the ability to participate and engage actively and in a meaningful way in society, unhindered by barriers to the tools for engagement. A typical example is given by the improvement of the e-government where many services are offered by the public administrations via Internet and, in a close future on our cellular phones.

The RIUSA pilot action, whose acronym stays for (Rcycle and learn with the exchange of IT equipment in URBAN 2), addresses these problems in a specific geographical area in Turin.

RIUSA is part of the innovation activity of the economic and technological intervention lab LISEM, established, in the framework of the European PIC Urban 2 program, by some of the most important local actors in R&D and education in order to favour the economic and cultural growth of the population of Mirafiori, a city area which suffers from social and inclusion problems since many years and whose condition were recently worsened due to the crisis of the main Italian car manufacturer FIAT which caused the loss of many jobs in the local supply SMEs.

LISEM is involved in supporting the industrial diversification by nursing, with dedicated education and training, hi-tech, mainly ICT, start-ups, and, at the same time it aims to reduce the cultural and social barriers faced by the Mirafiori inhabitants in accessing the usage and practice of these new technologies.

RIUSA objectives fit quite well into this scheme as it wants to achieve four major goals:

1. To teach people not to abandon their obsolete PCs by the garbage containers in the streets but instead to route them into a correct disposal and recycling stream
2. To diffuse the cultural message that via a suitable lab refurbishing process it is possible to exploit in the best way the residual functionalities of dismissed IT appliances and to increase their lifecycle
3. To help the less favoured people in Mirafiori area in using the ICT technologies for daily life activities like writing a letter, sending an e-mail, creating a personal agenda and phone directory, consulting a train or flight timetable
4. To spread the usage of OSS as the most suitable and mean to fully exploit the residual HW/SW capabilities of the dismissed equipment and at the same time discourage the software piracy

In few words the action consists in the following steps:

1. Organise the collection of PCs dismissed by private and public organisations
2. Test and if requested properly refurbish the hardware of the collected equipment
3. Install the suitable LINUX distribution and OSS packets
4. Test the complete set-up
5. Deliver the processed PCs to schools, parishes, elder people associations, and other social purpose organisations
6. Train the newcomers in the usage of OSS tools on the recycled machines

Obviously a lot of interaction with the organisation located in the Mirafiori area is necessary in order to collect the needs and to suitably tailor the HW/SW characteristics of the delivered machines.

At the end of the pilot action we are very satisfied with the obtained results, particularly because we believe that we have now some lessons learnt and best practices that we can transfer to others who want to replicate our experience.

- We created an OSS Internet Cafè where people were helped in accessing the PC and the installed tools. This requested a lot of commitment from the people involved in RIUSA since some of the most interested audience needed to learn how to use the mouse!
- We had to face a lot of legal problems in finding the proper legal subject to receive the collected equipment and to redistribute them once properly refurbished. Eventually one of the most important associations in the area accepted the role but LISEM had to assist in the preparation of all legal documents
- We designed a RIUSA toolkit where the most suitable HW/SW set-up are suggested according to the requested use
 - Base:
 - HW: Pentium MMX, 64 Mb RAM, CD Reader, 2 GB (min) HD
 - SW: Mandrake 8.2, GUI KDE. Open Office Suite
 - Usage: Office, e-mail, Internet Browser, Simple Games
 - Office
 - HW: Pentium II, 64 Mb RAM, CD Reader 2 GB(min) HD
 - SW: Mandrake 9.1, GUI KDE. Star Office 5.1, Macromedia Flash, Java 2 RESE

- Usage: Office, e-mail, Internet Browser, Simple Games, play applets and multimedia agents
- Advanced
 - HW: Pentium III, 80-128 Mb RAM, CD Reader, 8 Gb (Min) HD
 - SW: Mandrake 8.2, GUI KDE. Star Office Suite 5.1, Macromedia Flash, Java 2 RESE, Authoring & Publishing, KDE-Edu, Educationik
 - Usage: Office, e-mail, Internet Browser, Simple Games, Multimedia, Didactic tools
- We involved a local school (International Institute Edoardo Agnelli) which, not only supplied the space for the refurbishing lab and the Internet OSS Cafè but also offered the cooperation of its students in processing the collected PCs. The experience and technical skill of the CSP personnel was exploited to coordinate the action

The most significant results of the RIUSA action can be summarised

- ❑ 250 PCs processed (200 were donated by the Torino province)
- ❑ 110 PCs installed with OSS delivered in the Mirafiori area
- ❑ OSS Internet Cafè equipped with 12 refurbished PCs
- ❑ 45 local associations received the processed PCs
- ❑ 6 students involved in the refurbishing task
- ❑ 3 animation events organised
- ❑ 10 training courses on OSS and recycling

Among the most important local associations and organisations that received the RIUSA equipment we can mention:

- ❖ 3 Cooperatives assisting handicapped children or with behavioural problems
- ❖ 2 Elder people associations
- ❖ 2 Primary schools and one college
- ❖ 1 City police administrative office
- ❖ 1 Old people's home
- ❖ Mirafiori's area administrative council offices
- ❖ 1 Correctional Institute. This was a very interesting experience since it involved the education operators of the institute who were trained to the use of the OSS tools for their activities with the juvenile delinquents

Finally, since the LISEM budget is only sufficient to fund a pilot project, we committed to external consultants a business plan to estimate the economic chances for the creation of an entrepreneurial initiative able to gain on the experiences of RIUSA.

The first results of this study make us confident that the human and technical expertise of the action will be collected by some more structured subject able to operate in an extended market perspective while saving the social added value of the initiative.