Challenging user behaviour

Reduce the computers energy footprint by a life extension

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Scope & Objective

How to monitor ‘our’ behaviour?

An analysis in 4 dimensions (equipment, attitudes, knowledge, practices)

Influencing new behaviour patterns - a proposal
- **Scope**
  Computers accelerated obsolescence, the energy footprint, and the challenge for new attitudes and actions.

- **Objective**
  Create an understanding of the kind of information on the technology/equipment, attitudes, knowledge and practices that may be relevant for effective action. (both supply/demand sides)
From a demand side
Individual consumers’ responsibility for environmental side effects of their acts is increasingly being emphasized by policy-making. Subsequently many environmental requirements are expressed in terms of user/household-related activities. These include, for instance, recycling, purchasing of green-labeled products and activities that decrease household electricity use. Relative to the environment, awareness leads to attitude, and attitude determines behaviour (Stern, 1992); Enhanced by previous environmental awareness, attitudes have more sway over actions if those actions are easy and not costly

From a supply side
In addition, environmentally conscious manufacturing, equipment and materials disposition, recycling, and related topics have given rise to cooperation, and sometimes to conflict, between industry, government, trade organizations and agencies.
<table>
<thead>
<tr>
<th>Concept</th>
<th>Indicators</th>
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<tbody>
<tr>
<td>Dimensions in two backgrounds - psychologically and sociologically (in brackets):</td>
<td>equipment (material culture), attitudes (representations), knowledge (information), practices (behavior).</td>
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<td>Those 4 dimensions are relatively independent of each other, in the sense that there is no systematic correlation between them.</td>
<td>An analysis in 4 dimensions</td>
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Do you know that:

- The performance will be excessive in relation to your needs.
- You will be responsible of the waste of a quantity of raw materials equivalent to 100 times the weight of the PC.
- It will cost you a lot of money: 600€ in average.
It’s an eco-responsible action

- You'll get a computer **powerful enough** for **90%** of the common usages
- You'll save **1MWh** and **1 ton of CO2**
- It will be **5 times less expensive**
They maintain an economic model opposed to sustainable computing

- They maintain equipments obsolescence (software)
- They give priority to recycling rather than refurbishing.
- The warranty duration is two short. (4 years on average)
Users get carried away by consumption logics.

- **Frenzy of purchases** of electronic products ever more ephemeral and seductive

- **Businesses** subscribe to short duration contracts for the renewal of their equipment *(2 to 5 years)*

- The **unawareness** of the environmental impact is total.
Almost 1 MWh, 1 ton of CO2. Equivalent to 8400 km by car

1500 L water, 240 kg of fossil energy, 11 kg of metal.

50% of the CO2 released during the lifecycle of a PC is released during its production.

At the end of the lifecycle, computers are sent in developing countries and handled without protection against toxic substances.
Be responsible in your IT investments

- 10 New desktop PCs
- 10 Refurbished desktop PCs
- 1 refurbished server,
- 10 thin clients

**Life cycle study**

Taking into account the embodied energy and the energy expended during use.
Minimizes the total energy

Every 6 years (maximize the cycle of lifetime)

Every 3 years (end of standard warranty)

Every 2 years (new generation)

+45% energy

+27% energy

Minimizes the total energy
Produce or reuse for digital solidarity?

CO2 emissions potentially saved by using refurbished computers instead of new pc for DCs. With an objective of 20 units for 100 inhabitants in Africa, Asia and Latin America.

Production of almost 500 Millions of new desktop computers

444M tons of CO2 potentially saved
Following the client server computing model, Dotriver pushes the limits of computer reuse. Even very old pc, without hard drive can be reused.

MetaIT develops a new concept of ecological computer ALT® requires 10 times fewer parts than conventional computers. Its components are low power.
Major companies

- **Redemtech leader** in the USA.
- **Dataserv** a European reference.

Charity organisations

- **Digital Pipeline**, help technologically disadvantaged schools and communities in **Africa**.
- **Computer aid international** refurbish computers for reuse in developing countries.
Influencing new behaviour patterns

a proposal
So what to do? Re-design the equipment

- Progress in **Ecodesign**
- Build very high **durability** computers only (> 10 years)
- Produce computers that can be **easily refurbished**
- Develop the model of **thin client**
Responsibilise the public and the companies in their electronic purchases.

Enhancing the image of refurbished equipment.

Encourage retailers to sell refurbished computers.

Encourage manufacturers to increase the warranty duration.
To Measure and certify energy gains of computers re-use

To determine the economic model of a large refurbished computers market.

To produce strong recommendations to producers, sellers and consumers.

So what to do? Increase knowledge throughout a EU Study
So what to do?  Sustain the best practices

- Create a **European call for projects** to identify and replicate the best initiatives.

- Create a **carbon fund** to support the best initiatives of sustainable computing.
Thank you for your attention

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