

Paradiso presentation – information technology and sustainability

Information technology does offer us huge opportunities - to be smarter, to solve our environmental problems.

It allows us to measure and manage things more efficiently, especially complex issues. We can calibrate energy use through smart grids; we can manage traffic in real time in cities; and this ability to manage efficiently will multiply as technology becomes pervasive, embedded in everything.

It allows us to dematerialise, to reduce physical impacts. We know about Netflix replacing Blockbuster; or telepresence reducing the need to get on an aeroplane. And as new applications, such as augmented reality, develop, we can expect that more of our wants will be satisfied digitally and that more of our wealth generated digitally.

ICT allows us to join up, to take collective action to solve collective problems. Think about collaborative consumption, the various peer-to-peer networks, 'what's mine is yours'. It allows citizen action and sharing through sites like 'Patients like me'. It also provides a way to solve the 'I will if you will' dilemma, whereby individuals will take environmental action if they know others are taking action too, and if they know that their actions are guaranteed to make a difference.

That's the promise, the potential. But, there are a couple of big problems.

One is the rebound and displacement effects. We may become more efficient in one part of the system, whilst creating problems elsewhere. Homeworking, for example, saves energy for the company, but the worker may instead heat their whole home. Or if we free up road space through smart traffic management, what happens? Other cars fill that space and you end up with more cars using more roads during more hours of the day. The evidence to date is that increased connectivity and communication has led to increased consumption and environmental impact. There is a real danger that we fool ourselves that we become more efficient in tackling individual problems but our overall environmental impact increases.

The other problem is resilience. We can manage things to the nth degree, but then what happens when these systems go wrong. And they will go wrong – as we saw in the financial crisis? Then the outcomes from the collapse of these fragile systems could be even worse.

So, the principles we should apply to the future development of ICT are as follows:

- It must be developed and applied in ways that reduce the absolute environmental footprint;
- It should be designed – learning lessons from nature – to make our societies more resilient as well as just improving efficiency.

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