

# MAKE IT GREEN!

## The boom of the iPad



The announcement of Apple's iPad has been much anticipated by a world with an ever-increasing appetite for mobile computing devices as a way to connect, interact, learn and work.

**Whether you actually want an iPad or not, there is no doubt that it is a harbinger of things to come.** The iPad relies upon cloud-based computing to stream video, download music and books, and fetch email. Already, millions access the 'cloud' to make use of online social networks, watch streaming video, check email and create documents, and store thousands of digital photos online on popular web-hosted sites like Flickr and Picasa.

## Cloud computing? What's the meaning?



The term cloud, or cloud computing, used as a metaphor for the internet, is based on an infrastructure and business model whereby - rather than being stored on your own device - **data, entertainment, news and other products and services are delivered to your device, in real time, from the internet.**

The creation of the cloud has been a boon both to the companies hosting it and to consumers who now need nothing but a personal computer and internet access to fulfil most of their computing needs.

## Cloud computing growth



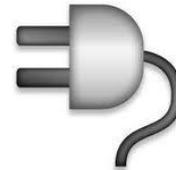
**2010 has been touted by many in the ICT sector as the 'Year of the Cloud'.**

While this is likely a prediction that will be repeated in subsequent years, the arrival of the iPad and growth in netbooks and other tablet computers, the launch of Microsoft's Azure cloud services for business, and the launch of the Google phone and the proliferation of mobile cloud applications are compelling signs of a movement towards cloud-based computing within the business sector and public consciousness in a way never seen before.

3 key trends in cloud-based computing:

1. Continued significant expansion of cloud-based computing despite economic downturn
2. Greater attention and growth in deployment of energy-efficient data centres design
3. Increased size and scale of data centres being built by major brands

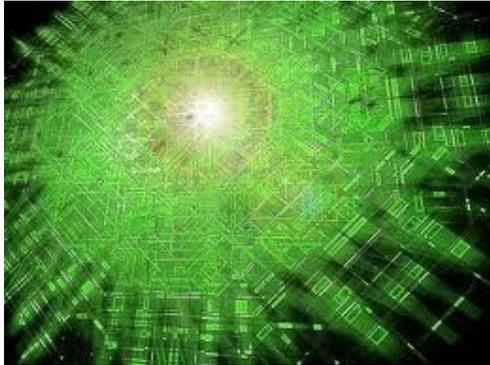
## The cloud demands for energy



The cloud is growing at a time when climate change and reducing emissions from energy use is of paramount concern. **With the growth of the cloud, however, comes an increasing demand for energy.**

For all of this content to be delivered to us in real time, virtual mountains of video, pictures and other data must be stored somewhere and be available for almost instantaneous access. That 'somewhere' is data centres - massive storage facilities that consume incredible amounts of energy.

## How big is the carbon footprint of the Information Technology and Communication sector?



SMART 2020 study found that:

- **PC ownership will quadruple between 2007 and 2020 to 4 billion devices**, and emissions will double over the same period, with laptops overtaking desktops as the main source of global ICT emissions (22%).
- Mobile phone ownership will almost double to nearly 5 billion accounts by 2020, but emissions will only grow by 4%. Broadband uptake will treble to almost 900 million accounts over the same period, with emissions doubling over the entire telecoms infrastructure.

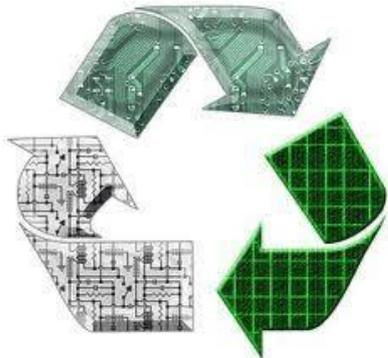
## Cutting ICT emissions is key to sustainable growth in the sector



Innovations from the ICT sector - when combined with increased use of renewable energy - can put the world on a more sustainable path and help keep global temperature increase below the 2°C threshold scientists say is needed to hold off the worst effects of climate change.

Information Communication Technologies (ICTs) are found in all aspects of our lives, from health and science to transport and manufacturing. But the widespread use of ICTs has come at a price: **the ICT sector is estimated to produce two percent of Europe's carbon emissions, a figure equal to that produced by the aviation industry.** And, as the ICT industry continues to grow, emissions for the production and use of ICTs are set to rise by six percent a year. **To continue to benefit from ICTs we must reduce the sector's carbon footprint and energy consumption.** Cutting emissions is key to sustainable growth in the ICT sector: without it, providers may be forced to pay large fines or offset emissions, potentially leading to unfeasible operation costs.

## Towards more eco-friendly data centres



Many see virtualisation as the future of IT, with organisations outsourcing their computational needs, rather than dealing with them in-house. However, companies need to ensure they are not simply offloading their emissions to another source, but are instead enabling dedicated server hosts to aggregate their processing needs onto a smaller number of machines.

While e-Infrastructures can offer a way to cut power consumption, **a move to cloud computing must be carefully managed.** Aggregating processing needs could actually increase energy consumption, due to the cooling requirements of large data centres owned by cloud providers. This is a major problem: data centres are estimated to account for three percent of the world's energy consumption. Many providers and organisations are already taking steps to reduce this, finding more eco-friendly ways to run data centres.

## The need for Green IT specialists



Recent trends demonstrate the **labour market need in the next future for Green IT specialists**, with a specific view on reducing IT footprint from different bases.

**The Leonardo da Vinci GRIN-CH project is going toward this direction: identifying five new specialisations demanded in this field, and describing each of them in terms of knowledge, skills and competences needed.**

## The GRIN-CH project



**CIAPE, together with partners from six different European countries, is addressing the shortage of skilled professionals in the Green IT field, a shortage that is due to its recent emergence.**

The partners are analysing the market needs, the existing trainings available for the different components and competences, and defining professional standards in the participating European countries. Training organisations will be advised on the content and skills that should be trained in the field of Green IT.

Follow us on <http://groupspaces.com/grin-ch/>



## GRIN-CH meeting in Rome, Italy, 23 April 2012.



CIAPE welcomed the GRIN-CH partners from the UK, Germany, France, Switzerland, Belgium and Sweden in Rome for the second project meeting. **Discussions raised main concerns for efficient "Greening", pointing out that not everything green is what it looks, e.g. carbon neutral transport or cloud computing.**

This project has been funded with support from the European Commission. This communication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.