

Brussels, 2 March 2011

Digital Agenda: how cloud computing can boost Europe's competitiveness

European Commission Vice-President for the Digital Agenda Neelie Kroes is visiting the CeBIT2011 information technology (IT) exhibition in Hannover, Germany on 2 and 3 March, where the main theme is cloud computing. Cloud computing is the term used when users such as companies and public administrations, using networks such as the internet, access data and software stored on a service provider's computers in another location (potentially on the other side of the world). It is one of the key enabling information technologies that can help European businesses –especially SMEs – to drastically reduce IT costs, help governments supply services at a lower cost to citizens and make computing much more energy efficient. The promotion of cloud computing in Europe is therefore an important objective of the Digital Agenda for Europe (see [IP/10/581](#), [MEMO/10/199](#) and [MEMO/10/200](#)).

A major potential advantage of cloud computing for companies and public administrations is that they no longer need to install and maintain software and computing equipment of their own, nor manage data storage facilities in-house. Instead, they can enjoy remote access, through networks such as the internet, to state-of-the-art software and data storage systems offered by specialist outside suppliers and so take advantage of much more affordable and efficient IT systems.

Some examples of EU-funded projects in the field of cloud computing include:

RESERVOIR – technology for a European cloud

The RESERVOIR project concerns how a European cloud computing infrastructure could be built. The research project focusses on developing software that would make available underused computing resources from various suppliers and provide them as a service to companies and public administrations in need of such resources. The aim is to enable companies with underused computing resources to make their infrastructure available as a "cloud service". RESERVOIR is building technology for a European "cloud", allowing European companies to easily become a cloud provider using the RESERVOIR software.

RESERVOIR aims to enable the delivery of services on an on-demand basis, at competitive costs, and without requiring a large capital investment in infrastructure. To achieve this, RESERVOIR has developed open source software (called OpenNebula) that can offer widespread cloud services in the EU which can be downloaded for free. Spanish telecoms company Telefónica and the European Organisation for Nuclear Research CERN are already using this open source software to provide cloud services.

The project is carried out by industry, universities, research centres in Belgium, France, Germany, Israel, Italy, Spain, Switzerland and the United Kingdom . It is funded by the EU's Seventh Framework Programme with €10.5 million (total project cost of €17.22 million). It started in February 2008 and is expected to finish in March 2011.

More information:

<http://www.reservoir-fp7.eu/>

OPTIMIS – helping SMEs to benefit from the cloud

The OPTIMIS project is focussed on developing software components of a cloud infrastructure that will help SMEs to deploy, run, monitor and manage applications on the cloud. According to market studies, the market for this type of software which generated around €92 million in 2010 is expected to more than triple by 2013. Most cloud innovation is happening in this field.

The OPTIMIS toolkit aims to provide a set of independent components that can be adopted by providers, offering the capacity required by services. These components address the whole product life cycle (e.g. from conception to maintenance).

As companies move from traditional infrastructure to cloud based infrastructure, their existing monitoring and management tools are no longer sufficient. OPTIMIS aims to help SMEs to better innovate using the cloud.

The project is carried out by universities and research centres in Germany, Greece, Spain, Sweden and the United Kingdom. It is funded by the EU Seventh Framework Programme for Research with € 7.1 million (total project cost of €10.37 million). It started in June 2010 and is expected to finish in May 2013.

More information:

<http://www.optimis-project.eu/>

CONTRAIL – using the cloud to maximise use of computing infrastructure

The Contrail research project is looking into new methods to help any company to be a cloud provider when its computing infrastructure is not used at its maximum capacity, and a cloud customer in periods of peak activity. The projects look at how unused resources can be pooled and made available for other uses.

For example, Contrail is looking at how cloud computing could help cut costs and increase the impact of drugs research.

The massive explosion in the volume of data generated through genomic research, pharmacological sources or clinical trials could potentially offer an opportunity to increase the number of drugs discovered.

However, the sheer amount of data make it hugely challenging to identify promising candidates for potentially life-saving drugs through traditional computing technology alone. The cloud makes it possible to use more computing and data storage power at the same cost to resolve that difficulty.

Accessing and analysing the data through the cloud, perhaps drawing on the unused computing resources of other companies or organisations, could potentially lower the cost of commercial electronic drug discovery services for the pharmaceutical industry. It could also enable SMEs to play a competitive role in a capital intensive industry like pharmaceuticals.

The project is carried out by universities, research centres and SMEs in France, Germany, Italy, The Netherlands, Slovenia and the United Kingdom. It is funded by the EU's Seventh Framework Programme for Research with €8.3 million (total project cost of €11.3 million). It started in October 2010 and is due to finish in September 2013.

More information:

<http://www.contrail-project.eu>

To find out more about CeBIT 2011

<http://www.cebit.de/home>

Digital Agenda website:

http://ec.europa.eu/information_society/digital-agenda/index_en.htm

Neelie Kroes' website:

http://ec.europa.eu/commission_2010-2014/kroes/index_en.htm

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