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Digital Agenda 101: from a single digital market to high-speed internet

As ICT Features publishes our 101st story, we take a moment to reflect on the stories and testimonies shared by the many EU-funded technology research projects covered so far. We also pay homage to the symbolism of the number 101 — which just so happens to represent the 101 policy actions of the Digital Agenda for Europe (DAE).

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In education, a basic course of any given subject - if we ask our American friends - is a '101' course. We also try to help the wider audience understand the sometimes complex scientific and technological subjects involved in ICT research with a '101' approach to the stories.

But 101 is also the number of policy actions which, according to the European Commission's Digital Agenda for Europe, will 'stimulate a virtuous circle of investment in and usage of digital technologies'. These 101 policy actions are organised as seven pillars, or 'containers': digital single market, interoperability and standards, trust and security, fast and ultra-fast internet access, research and innovation, digital literacy, skills and inclusion, and ICT-enabled benefits for EU society.

'Europe's companies cannot remain competitive, nor can public services remain first-class if they do not make extensive use of information and communication technology. Virtually all newly created jobs require good ICT skills, and so do most existing jobs ... Promoting ICT is promoting a job-rich recovery,' notes the European Commission. The DAE's 101 actions thus form a vital part of the overall Europe 2020 strategy for securing smart, sustainable and inclusive growth.

Single-minded technology

Action 3 of the DAE aims to open up public data resources for re-use - as the raw material for innovative cross-border applications and services like more accurate weather forecasts or new financial services. 'Re-use of "Public-sector information" (PSI) means using it in new ways by adding value to it, combining information from different sources, making mash-ups and new applications, both for commercial and non-commercial purposes,' explains the Commission on its dedicated PSI web-page [1].

ICT Features has covered a number of EU-funded projects helping Europe turn public data into business opportunities (read 'Big data at your service' [2]). For example one initiative, the EU-funded 'Emerging, collective intelligence for personal, organisational and social use' (Weknowit [3]) project, has developed a platform that converts vast user-generated content from a problem of information overload into a new, 'collective intelligence' with a range of applications, from handling emergencies to enhanced city tourism. The project has filed for several patents and a handful of products and results are destined for public or commercial release.

Public-sector information already generates some EUR 32 billion of economic activity each year. The EU's Open Data Strategy, launched in December 2011, stands to more than double that to around

EUR 70 billion, which according to Neelie Kroes, Vice-President of the European Commission responsible for the Digital Agenda Data, is a 'badly needed boost to our economy'.

The standard

There is no better example of interoperability than the internet, and'the Digital Agenda identifies improved standard-setting procedures and increased interoperability … so that new IT devices, applications, data repositories and services interact seamlessly anywhere - just like the internet,' notes the Commission.

For example, Action 22 promotes standard-setting rules which find the right balance between protecting intellectual property and maintaining competitive markets. The sort of innovation, with support from European funding, which led to the development of the GSM standard and subsequent billion-euro industries around it.

The advances achieved in the 'Network of excellence in wireless communications' (Newcom++ [4]), for instance, cover a range of technologies that go beyond the LTE (Long Term Evolution) 4G standard now being deployed for mobile communications, or what Prof. Marco Luise, the technical manager of Newcom++, calls 'after-next-generation technologies' which will help Europe retain its prominence in the field of wireless and mobile communications. 'A lot of this research - dealing with capacity, bandwidth, localisation and security, for example - could be implemented for the next generation of smart phones after 4G, but some of it goes beyond that, even touching on abstract areas such as information theory,' the professor notes in an ICT Features story ('Maintaining Europe's competitive edge in wireless communications' [5]).

Meanwhile, other EU-funded projects are ensuring that the advances in technology - with the potential to improve daily life in myriad ways - don't get locked in silos or languish behind pay walls and licence fees, or simply don't work well with technologies we currently use.

'A lot of projects have worked to develop a one-off product - something to remind you to take your medicine or a reminder to turn off your stove,' says Theresa Skehan, project manager at the Swedish Institute of Assistive Technology which is coordinating the 'Mainstreaming on ambient intelligence' (Monami [6]) project. 'But what's needed are solutions that deliver a whole range of services, so you don't have to get a new system for each service you need - one platform with modular services that are very easy to add and adapt,' she says. Monami has developed an open, scalable software architecture and implemented a diverse array of interoperable applications designed specifically to meet the 'assisted-living' needs of older people.

Do you trust it?

Only 12 % of European web users feel completely safe making online transactions. Threats such as malicious software and online fraud unsettle consumers and dog efforts to promote the online economy. No single country can successfully tackle the scourge of online security, so Actions 33 and 39, under the DAE pillar for trust and security, support EU-wide cyber-security preparedness and simulations. Research is also doing its part to reinforce cyber-security in both private and public sectors.

The EU-funded 'Managing assurance, security and trust for services' (Master [7]) project developed a platform to manage whole business processes in different contexts, so that users can seamlessly access cloud computing and software services without security concerns. Meanwhile, researchers in the 'Security engineering for lifelong evolvable systems' (SecureChange [8]) project have developed the methodology, techniques and tools to make the entire software lifecycle - from requirements engineering, through design, development, testing and verification, to deployment and updating - more efficient, more flexible, more secure and far less costly.

Faster than a…

New services such as high-definition television or videoconferencing need much faster internet access than generally available in parts of Europe. To meet the needs of the Future Internet, Europe

needs download rates of 30 Mbps for all of its citizens and at least 50 % of European households subscribing to internet connections above 100 Mbps, by 2020. The Digital Agenda aims to turn this ambition into reality by stimulating investment and proposing a comprehensive radio spectrum plan.

Read our special feature story, 'Future Internet ...a thing of beauty and promise', on EU actions and projects paving the way for faster, better internet services befitting networks of the future, a Future Internet of communicating objects, people and ideas. In an earlier special edition of ICT Features, called 'Broadband - big pipes of potential growth' [9], we rounded up a selection of stories on EU-backed research projects working to boost internet speed and capacity. As we attempted to explain in that story: 'If you think of the internet as billions of pipes that carry bits of information around the world, it stands to reason that the more data we try to pump through them, the higher the chances of backlogs or (data) traffic jams forming.'

The Commission has set up the Connecting Europe Facility (CEF) to encourage greater public-private investment in broadband and digital infrastructure projects. The CEF seeks to unlock EUR 50 billion for network infrastructure - to strengthen Europe's transport, energy and digital networks - of which EUR 9.2 billion would be set aside for broadband and digital service infrastructure.

'We need to test practical ideas on how to cut costs and how to make it easier to access, re-use and share this infrastructure,' noted Commissioner Kroes at the launch of CEF. 'There is nothing more annoying for citizens than road-digging, and nothing more annoying to businesses than pointless red tape.'

For example, the EU-funded 'Home gigabit access' (OMEGA [10]) project has brought the value of ultra-fast broadband networks into the home or office. The project partners demonstrated how different wired, radio and optical communications technologies can be used to create a hybrid network for high-speed communications in a home environment, optimising the infrastructure already in place.

This brings the first part of our 101st story about the Digital Agenda 101 policy actions to a very timely end. In the second part, we will look at actions to promote research, e-skills and tackling social challenges, and the projects that serve these ends...

Projects mentioned in this report are funded under various themes and actions of the EU's Framework Programme for research.

Links to projects' websites:

- Public-sector information - PSI [1]
- Weknowit [3]
- Openaire [11]
- Newcom++ [4]
- Monami [6]
- Master [7]
- SecureChange [8]
- ALPHA [12]
- OMEGA [10]

Links to related news:

- Part two - Digital Agenda 101: from supporting research to meeting social challenges
- Big data at your service [2]
- Open access: EU project results go public [13]
- Maintaining Europe's competitive edge in wireless communications [5]
- An open market of assisted living apps for older people [14]
- Software services: securing business processes [15]
- Future Internet ... a thing of beauty and promise [16]
- Broadband – 'big pipes' of potential growth [9]

Other links:

- European Commission's Digital Agenda website [17]

Information Source: CORDIS

Recommended reading

Newsroom:

- Research results [18]

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Links:
[1] http://ec.europa.eu/digital-agenda/en/../../policy/psi/index_en.htm
[2] http://cordis.europa.eu/fetch?CALLER=OFFR_TM_EN&ACTION=D&DOC=1&CAT=OFFR&QUERY=0139a0cee0ad:7939:25b5b17a&RCN=9052
[3] http://www.weknowit.eu/
[4] http://www.newcom-project.eu/
[5] http://cordis.europa.eu/fetch?CALLER=OFFR_TM_EN&ACTION=D&DOC=4&CAT=OFFR&QUERY=01397cb33870:3d66:21e35990&RCN=7925
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[9] http://cordis.europa.eu/fetch?CALLER=OFFR_TM_EN&ACTION=D&DOC=1&CAT=OFFR&QUERY=01397cb83a87:beee:2444b1c5&RCN=8782
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