Closing Europe's digital divide

A report from the Economist Intelligence Unit

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Preface

Closing Europe's digital divide is an Economist Intelligence Unit report, sponsored by Intel. The aim of this report is to examine governments' efforts to promote e-inclusion in Europe, and draws lesson for best practice.

The Economist Intelligence Unit bears sole responsibility for this report. The Economist Intelligence Unit's editorial team conducted the interviews and wrote the report. The findings and views expressed here do not necessarily reflect the views of the sponsor.

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Executive Summary

When it comes to the digital divide, Europe is a mixed bag. Within the EU boundary, Denmark enjoys the highest broadband penetration in the world (37%[1]), whereas Bulgaria has broadband penetration on a par with Botswana (about 8%). In economics, they say a rising tide lifts all ships, but when it comes to information and communications technology (ICT), some of the ships need a bit of assistance. Governments cannot assume that falling computer and broadband prices will eventually lead to universal usage. They need to actively ensure that all of its citizens –including the elderly, the disabled and the poor– have an equal opportunity to join the "information society". The risks of not being part of that society are much greater today than they were ten years ago. People who do not have access to a computer or the Internet are much more likely to be socially and economically excluded.

   In 2006, the EU acknowledged the importance of electronic inclusion ("e-inclusion") and, under the auspices of the Riga ministerial declaration, committed to halving the digital divide by 2010. Today, there are several hundred government supported e-inclusion programmes across Europe. While progress in some quarters has been patchy, others have been more successful. The main question for government is how to design and implement programs to ensure they work effectively. Here are some of the lessons learned so far:

- **Know your audience.** Even the best technology will fail if the audience's needs and fears are not properly addressed.
- **Develop infrastructure.** There is no point teaching people to use the Internet if access is hard to come by.
- **Be imaginative with funding.** For example, the Portuguese government used the money they raised from auctioning "third generation" (3G) licences to telecommunications companies to fund a national e-inclusion project.
- **Raise awareness.** Not everyone is aware of the benefits that ICT can bring. To overcome resistance,

it is important to sell the benefits of technology.

- **Work with established groups.** Partner with local groups and make use of their knowledge of the target audience.
- **Co-ordinate.** E-inclusion projects often involve manifold companies and government departments and require careful co-ordination and frequent communication.
- **Train and support.** One-on-one training, in the person's home, is often the most effective form of training. On-going support is also crucial for maintaining momentum.
- **Measure.** Without a yardstick for success, it is hard to make the case for additional funds or future projects.
- **Look ahead.** Be aware of trends, such as the rapid uptake of the mobile Internet, and consider the impact on current projects.

Connect and engage

I n 2007, 40m people in the EU joined the Internet revolution, bringing the total number of regular Internet users in the region up to 250m[2]. However, in the same year, computer "illiteracy"[3] in the region was estimated to be around 40%. Although falling computer and broadband prices are playing a major role in closing the digital divide across the EU, within countries a number of sectors of society are at risk of remaining marginalised as groups such as the unemployed, the elderly and rural communities chase a moving digital target.

There is a risk that the divide between Europe's digital "haves"' and "have nots" will also deepen, with implications for social cohesion, living standards and economic prospects. "As everyday life and work get more and more entangled with ICT (information and communications technology), growth depends increasingly on ICT use," notes Viviane Reding, EU commissioner for information society and media. "Achieving broad-based growth depends on the number of digitally included and digitally empowered individuals."

[2] Source: http://www.e-inclusionawards.eu/

[3] Computer illiteracy being defined as people who lack basic computer skills, such as copying a file or launching a computer program using a mouse

Computer literacy in the EU

Computer user skill level	EU total	Low educated	Aged 55-64	Aged 65-74	Retired/ inactive	unemployed	Women
Never used	41	65	61	83	73	44	44
Have some degree of computer skills	59	35	39	17	27	56	56

Notes
1. Figures are the percentage of the population in the particular group
2. Low educational level applies to those with no formal education, primary or lower secondary education responding to UNESCO's ISCED classification levels 0, 1 or 2)

Source: Eurostat, Community Survey on ICT use in Households and by Individuals, 2006

There are often more immediate benefits to governments too, such as more cost-effective delivery of public services. For example, telemedicine –the use of ICT for medical diagnosis and remote patient care– enables the elderly to take care of themselves and remain in their own homes for longer. Bringing marginalised people online can thus improve their quality of life while relieving some of the burden from government services.

"It's something all political parties agree, that digital technology can bring huge benefit to disadvantaged people," says Paul Murphy, UK minister for digital inclusion. The European Commission now describes "e-inclusion" as a key political priority, with a remit to halve the digital divide by 2010. But progress has been slow. A recent European Commission paper admits that "…targets of halving digital disparities will not be reached by 2010 for any disadvantage group except people in the age group 54-64, even when accepting the very optimistic scenario of disparities disappearing over time with no major policy intervention."[4] As this paper shows, ensuring that the broader population is able to enjoy the benefits of ICT and make a greater contribution to society, presents considerable economic, organisational and social challenges.

Governments' mixed motives

There is no shortage of examples as to how governments are seeking to improve access to computers and the Internet. To give an idea of the breadth of e-inclusion projects in Europe, the EU will be staging the first European e-Inclusion Awards for the best 35 projects on December 1st 2008 in Vienna. When bids closed on September 12th, the number of submissions of eligible projects totaled 469.

E-inclusion programmes range from support for small populations, such as *Un computer in famiglia*, launched in Italy in February 2008 and targeted at families in the sparsely populated Valle d'Aosta region - to major national programmes, such as the UK's online centres, currently serving over 2m mainly low-income users (*see box, online centres in the UK*). Likewise, the types of groups that governments focus on vary widely: from programmes to get the older generation online, to funding for families to buy computers for their children, as in Romania (*see box, School children in Romania get computers at home*).

Governments' motives for initiating programmes also vary, although their rationale tends to fall broadly into four—often interlinked—areas:

- Increasing the competitiveness of the workforce and getting more people back to work.
- Improving social cohesion, allowing elderly people, immigrants and others to connect with the rest of society.
- Providing more efficient and cost-effective delivery of public services.
- Creating equal advantages for all marginalised people, including those with disabilities, low education or low incomes.

Ultimately, the choice of project depends on the government's broader policy goals. Although no government admits to concentrating on one group at the expense of another, when budgets are finite, hard choices have to be made.

4 European Commission, Measuring progress in e-Inclusion: Riga Dashboard, November 2007

The e-excluded

The digitally excluded are not just the financially excluded. Governments are attempting to bring many different groups into the digital fold.

The elderly

"The elderly are particularly important as they are the largest group of non-users," says Charlotte Alldritt, an analyst with FreshMinds, a London-based research group. EU statistics show that across Europe only around 10% of those over the age of 64 use the Internet (compared with 73% of young people aged 16-24).

Generation gap in the regular use of the internet
(Individuals who used internet at least once a week, by age and gender, EU27(a), 2007 (%))

■ Male ■ Females

16-24
79
77

25-54
61
55

55-74
31
19
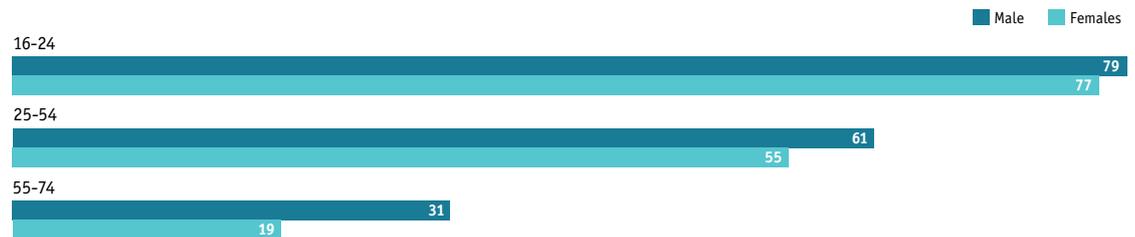
(a) Excluding Malta.
Source: *Eurostat, ICT statistics.*

Not only does ICT provide quality-of-life advantages, such as staying in more frequent contact with family members and the outside world, it also offers opportunities for part-time work or volunteering –which can boost self-esteem and provide greater economic independence.

One of the ways to ease the strain on public services is through the provision of "telecare" –that is, remote medical assistance using "smart" technology. Using this approach, local authorities in West Lothian, Scotland, say they have cut the average length of hospital visits for the elderly from 57 days to

School children in Romania get computers at home

Through its *EURO200* programme, the Romanian government has concentrated efforts on getting poorer school children equipped with computers at home. Under this programme, which started in 2004 based on a law passed by Parliament, vouchers for a new computer are issued by the government to pupils from families with low income. "Romania has started [its e-inclusion programme] with education of the younger generation," says Varujan Pambuccian, president of the Romanian parliament's ICT commission.

Regional school inspectorates verify the applications from different schools and send the requests for vouchers to the Ministry of Education, which in turn distributes them to the eligible families. A family may receive one voucher only and is required to pay costs in excess of €200. Computers can be bought from any outlet participating in the programme, and many come bundled with software that includes basic computer training and packages for school curriculum subjects including biology, chemistry and history.

So far more than 150,000 pupils have bought a computer under the programme. One valuable feature, according to Mr Pambuccian, is that e-learning can also be used by pupils who do not have access to good local education.

The government's motive is to ensure that the next generation can provide Romania with sufficient ICT skills. "We will face HR [human resource] limitations otherwise," says Mr Pambuccian. Since Romania acceded to the EU in January 2007, the government sees ICT as an essential component in helping to modernise the country's economy.

nine days and reduced costs by installing telecare systems in thousands of homes. These systems include a range of sensors to detect inactivity, intruders, falls, smoke, flooding or extremes in temperature.

The unemployed

Does a lack of ICT skills limit job prospects, or does the lack of employment and income prevent unemployed people from getting online? Whichever way cause and effect run, the figures speak for themselves: just 17%[5] of economically inactive people used the Internet last year, compared with an EU average of 60%, and the figure drops considerably among older generations and in poorer communities.

One way the French authorities have tried to deal with this problem is the "Village Digital 93", which has been set up in the north-east of Paris and covers four municipalities. Here, 40% of the population are immigrants and 30% are unemployed. The aim is to address youth at risk from turning to a life of crime by offering training and job opportunities. The same aims apply to the Irish "FIT initiative" for ICT training of marginalised young people. It is led by several companies and supported by the Irish government. FIT claims that more than 5,000 unemployed people have "changed their lives" by participating in its ICT training programmes, gaining skills and employment. Of those who completed courses during 2007, 77% progressed into employment or further education.

The disabled

For disabled people, ICT ability can mean the difference between being excluded and dependent on others' help, to competing on equal terms (*see box, Denmark: removing barriers for the disabled*). People with disabilities make up about 10-15% of the European population and Rodolfo Cattani, a member of the executive committee at the European Disability Forum, maintains that around one-

[5] Source: http://ec.europa.eu/information_society/activities/einclusion/docs/i2010_initiative/comm_native_com_2007_0694_f_en_acte.doc

The personal touch: France's *Internet accompagné* programme

Having first concentrated its e-inclusion efforts on students, the French government has moved on to two main targets: the elderly and people on low incomes. "Now we are faced with tougher [demographic] targets," says Bernard Benhamou, head of the Internet usage delegation at the French government. "We need more precisely tailored measures."

The French government believe that the biggest impediment to faster uptake of the Internet use is complexity. As a result, in March 2006, they launched *Internet accompagné* (Internet accompanied) –"accompanied" because people are given assistance in their homes to set the computer up and get connected to the Internet. The one-to-one training lasts about 4 to 8 hours and is run by accredited companies.

"Public-private partnerships are key," says Mr Benhamou. ICT companies provide packages for the programme, including computers, security, software, broadband connection and training, and the government provides tax breaks.

Apart from the quality-of-life improvements for the programme's target demographic, there have been wider benefits too. More than 140,000 new jobs have been created in France to support the programme –most of them as "Internet guides in residence". Twenty-six companies from different sectors are involved, and computers that are eligible for the programme are available in all the big retail chains. An *Internet accompagné* label does not guarantee that the computer is cheap or discounted, but, under the programme, the retailer is compelled to offer computers at different price points. The *Internet accompagné* label also guarantees that the training services are part of the product offering.

To the three fundamentals for a successful e-inclusion project—equipment, connection and training—Mr Benhamou adds financing. The government funds one-half of the training costs, and has cut the rate of value-added tax (VAT) from 18% to 5.5% on all the computers sold to the elderly as part of the programme.

half of disabled people could become actively employed with the help of ICT. He points out that with the skills shortages experienced by many countries, governments should do more to tap skills among disabled people.

However, Mr Cattani feels that government e-inclusion initiatives for disabled people have mainly fallen short. "Although the EU is a very positive driving force, improvement is slow at the national level," he says. "So far, there's been a big distance between words and deeds."

Changes in governments and policy objectives do not help either. "Even if the attention of the government is attracted, e-inclusion remains a priority for shorter and shorter time these days," says Mr Cattani. Furthermore, Mr Cattani believes that technology needs to be made with disabled people in mind, which would also reduce costs. In the case of mobile phones, additional software needed for blind people can cost as much as the device itself. "Every device must be accessible for all," he says. "If you have to retrofit, it's much more expensive."

Other marginalised groups

The groups targeted by inclusion programmes are by no means limited to those detailed above. Women are one such marginalised group. Fewer women than men use the Internet in Europe, especially those in low income groups. (In the US, the situation is reversed, with more women being online than men.)

Students are also the target of many e-inclusion programmes. For example, the Portuguese government is aiming to remove digital exclusion entirely from future generations by targeting school children and their teachers under its *e-oportunidades* programme. This programme allows 6 to 11-year-old children to buy a tailor-made educational laptop. Prices for the laptops range from €50 for better-off families to free for poor households. Children aged 12 and above can buy fully-equipped laptops under the scheme, although the price is slightly higher. The maximum price these older students --and school teachers-- pay for a laptop is €150. Wireless broadband is provided at a fee lower than market prices.

Through these incentives, being part of Plan Tecnologico which is the umbrella program for advancement of the knowledge-based society, the Portuguese government aims to cut the overall ratio

Denmark: removing barriers for the disabled

Ask Andersen is studying political science at the University of Copenhagen in Denmark. He attends lectures, types up his notes and essays, and conducts research using the Internet. In fact, despite being blind, he receives pretty much the same standard of education as any other fully sighted student.

The Danish Ministry of Education has a programme to cater for disability in higher education, which covers not only assistive devices but also elements to support the use of technology, such as providing extra time during examinations. Mr Andersen has been supplied with a laptop equipped with speech synthesis software, enabling him to "read" electronic course books on his computer, which are converted into audio. "I can study just the same as most students," he says. "It's possible to do a degree on equal terms."

Previously, without the technology, Mr Andersen says he would have required far more personal assistance for reading, navigating and writing. When books had to be recorded on tape, jumping around the text was laborious. "I can operate independently now," he says. "I've got the tools I need." Mr Anderson types up notes at lectures on the laptop, and can replay them in audio for essays or revision. He can even surf the Internet using voice-recognition software.

Tables and graphics that appear in course books remain tricky, however, and the growing amount of pictorial content on websites makes navigation less easy. In the future, since almost all books that are published today exist in electronic format, Mr Andersen believes a central database for storing books is needed. "It would be like taking a book off a shelf in a library," he says.

of computers to students from the current rate of one in nine, to one in two by 2010. An important part of the Portuguese – and other governments' – philosophy of providing children with IT skills and equipment across all income brackets is that they will pass on their IT knowledge to their parents.

Governments are also keen to get rural communities and thinly populated regions online. In the EU, there is also low broadband penetration in rural areas, with only one-quarter of households in the countryside benefiting from high-speed Internet access. And last, but not least, are employed people on low incomes, for whom computers are still prohibitively expensive, despite the drop in prices.

% of individuals who used the Internet in the last year

	2004	2005	2006	2007
Densely populated	53	60	60	65
Sparsely populated	38	46	44	51
All individuals	47	54	55	60

Share of people who used the Internet by type of location (Copyright © Eurostat. All Rights Reserved.)

Elements of success

Reaching and engaging the final sections of the population that remain digitally excluded is no easy matter. There is no single fix that can be applied, and in most countries it is a relatively new, unmeasured, phenomenon. Governments, national and supra-national, are still exploring best practice, but certain factors have been found to encourage success:

Know your audience. In more successful projects, governments have taken time to find out the requirements of different social groups, with the aid of representatives from the different groups and organisations that support them. Even the best technology will of course fail if wrongly targeted. As Ute Kempf of the German government's Technology Competence Centre says, "One the one hand, you have to know the special interests of the target groups and, on the other, the barriers which keep them from using the Internet." Mr Pambuccian of the Romanian ICT commission adds: "The best usage will take place where people feel best using IT." Investigation is required before foisting an e-inclusion project on a given section of society.

Develop infrastructure. Little progress will be made unless the country's technology infrastructure is ready to support the programmes. Figures[6] show that whereas Nordic countries have relatively high broadband penetration, of more than 30%, others, such as Poland (8.4%) and Bulgaria (7.6%), do not as yet have the right infrastructure for e-inclusion programmes. France is working to lower the price of broadband to less than €1 per day for underprivileged households, and is installing fibre-optic cables in new buildings for low-income families. But having broadband access is in itself no guarantee of usage. Portugal has almost 100% broadband coverage, yet only 43% of households are connected.

Be imaginative with funding. While the money for many e-inclusion programmes simply comes from government budgets, others have been more imaginative. The Portuguese government's *e-oportunidades* programme has been partly funded by the auction of "third generation" (3G) network

[6] European Commission, EU's 13th Progress Report on the Single Telecoms Market, March 2008.

licences, which has contributed some €500m to the project.

Raise awareness. Not everyone who is digitally excluded is keen to learn new ICT skills. As Ms Alldritt of FreshMinds puts it, "If they don't see the relevance of the Internet to their lives –as is often the case –they won't want to use it." Mr Murphy of the UK government agrees: "The benefits of the technology need to be sold. It's essential first to raise awareness, for example, by letting pensioners know how their lives could be made better." For the elderly, it is especially important to stress the security of the computer systems they will use.

Work with established local groups. Successful e-inclusion projects tend to rely on local networks and partners for support. "For the success of a widespread campaign, you need arrangements with local partners and to use existing networks that can make use of their knowledge [of the target audience]," says Ms Kempf. The better the understanding of the target group, the more likely the project is to succeed. When members of a trusted intermediary organisation are promoting e-inclusion, reluctance decreases and word-of-mouth recommendations spread. Mr Murphy of the UK government suggests that meeting places such as the local church hall could serve well as a centre in which to promote digital inclusion. "The programme has to be related to the local psychology," says Mr Pambuccian of the Romanian government.

Co-ordinate. Lack of co-ordination is a big stumbling block—both the lack between government departments and between the myriad of public sector and private enterprise partners needed to make e-inclusion projects succeed. For example, France's Village Digital 93 project involved a local intergovernmental association for youth, several local humanitarian associations, a public-private enterprise and a non-profit organisation seeking to provide local people with employment, technology institutes associated with the University of Paris XIII, and a range of IT companies.

Online centres in the UK

E-inclusion efforts in the UK are currently focused on some 6,000 federated "UK online centres". Limited in fact to England, they aim to provide free or low-cost access to computers and the Internet, combined with help and advice on how to use them. UK online centres claims to have 2m users learning each year, 73% of whom have one or more disadvantage, such as a low level of education or low income.

The way UK online centres operates is unusual for a European e-inclusion programme. "We're publicly funded, but not a government agency per se," explains Helen Milner, the managing director. "We don't manage the centres directly but supply membership services."

About one-half of the 6,000 centres are attached to public library services and many are run by voluntary sector organisations. Typically there are around ten computers per centre, with two full-time salaried staff, backed by volunteers. Membership services include a simplified Internet interface called "myguide", staff training and support in attracting people to the centres. These are either focused on the local community or on a target group such as people who are blind or deaf, thereby immediately creating a link. "It's quite cheap to fund –we're piggy-backing on organisations dedicated to helping people," says Ms Milner.

Ms Milner believes that UK online centres' position—which avoids being a government agency but receives public funding—is a major advantage: "We have our own way of doing things, but have very close links with the government." However, Ms Milner concedes that the operation, with its 6,000 centres scattered around the country, is difficult to manage. An online portal for centres is crucial; it can be used for a range of services down to distribution of leaflets for printing. There are ten full-time regional managers. "It's a very large and disparate network," she says. "Success lies in the way we communicate."

Joining all these dots can be hard. "The most difficult part of all is to get co-operation across government departments," says Romania's Mr Pambuccian, who believes that more co-ordination across different European countries could be highly beneficial. Unfortunately, there is no silver bullet for this problem. It requires a lot of hard work to ensure that the right people are talking to each other, and a seasoned project manager who can co-ordinate all of the disparate organisations.

Train and support. As Helen Milner, head of UK online centres, explains, many of the marginalised individuals targeted by e-inclusion programmes are in need of a confidence boost. "Support is a very important part of the programme," she says. "People are often scared and have come to think they're stupid." Projects regularly fail because there has not been sufficient back-up once people have been equipped with the technology. Sometimes they are sent off with an e-learning course, which is usually far less effective than personal tuition. IT training usually brings best results when carried out at the user's home.

Measure. Measuring the success or failure of e-inclusion projects can be difficult, creating a potential block for funding. "If you can't quantify tangible benefits, it's hard to put a case to the Treasury [for further funding]," says Ms Alldritt of FreshMinds.

Authorities face the challenge of quantifying how people's lives will be improved, the cost savings that could made from e-government, or the likelihood of improving employment opportunities. While measuring these factors can be difficult, independent studies of e-inclusion projects and their results can act as the basis for a more convincing business case.

A recent survey[7] commissioned by UK online centres, for example, includes data from a centre in Aberfeldy, a deprived area in the east of London. It shows that after an eight-week course—including the provision of a recycled PC and Internet connections at home—two-thirds of the centre-based participants and 87% of the home-supported participants progressed onto further training or employment. An overwhelming majority said the Internet had made a difference to their lives.

Look ahead. There is great potential for more creative use of technology. For example, some organisations are using social networks to bring isolated individuals with shared problems together online. Governments should not get stuck on the PC as the only means to connect disadvantaged people to the Internet. Bernard Benhamou, head of the Internet usage delegation at the French government, believes there is a big future for mobile Internet in digital inclusion projects, with a simple interface to support the people who can not use the Web because of illiteracy.

It takes more than one of these ingredients to make a successful e-inclusion programme. As EU commissioner Ms Reding says: "Countries that are mixing the infrastructural elements—investment in physical infrastructure, service re-engineering, programmes for digital literacy, mobilisation of business stakeholders and social intermediaries—are getting the best rewards from the information and knowledge society."

[7] Ipsos MORI, Digital inclusion, social impact: a research study, September 2008

From e-inclusion to 'we'-inclusion

European governments are contending with growing shortfalls in the workforce, rising crime and unemployment among disaffected and socially excluded youths. In addition, there is increased demand for government services from Europe's growing ranks of pensioners. As a result, digital inclusion has never been more important.

Successfully engaging the different digitally excluded groups will never be easy, but now governments are armed with the experience of the e-inclusion pioneers and have a better basis for forging ahead. Future projects should have clear targets and measurable benefits, and successful projects should publicise best practice.

According to EU statistics, 41% of the total population has never used a computer, so the scope for increasing the wealth and welfare of Europeans is immense. But sustaining effort in e-inclusion within governments is a major challenge. Programmes have a habit of running out of steam, replaced by other priorities when there is a change of government. But the more the benefits of e-inclusion are publicised, the less likely governments are to drop these programmes in the future. If member states can keep the momentum going, greater digital inclusion will lead to greater access to public services (at a lower cost), fuller employment and better social cohesion.