

Strategies for Networked Innovation

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1. Introduction

The KNETWORKS project is focused on the creation of a strong knowledge sharing and dissemination network to promote the exchange of good practices and implementation strategies in the Atlantic Area for building a 21st Century Knowledge and Information Society.

In support of the KNETWORKS project, this paper is contributed by the Oxford Internet Institute and considers how online platforms can best stimulate regional innovation via knowledge networks. It looks in particular at three domains: eGovernment, tourism and knowledge transfer. Case studies are drawn primarily from these areas.

The paper is not intended to be a definitive or comprehensive review of the issues in question. Rather, it is intended to develop credible, considered hypotheses as to potential valuable strategies, drawing on a discussion of a range of sample projects as an evidence base.

Note that 'knowledge network' is a somewhat flexible term. In this paper it is used to mean a human network that shares information (either one-way or mutually) that may improve organisational performance. We consider how online platforms might support or enable such human networks.

2. Internet infrastructure and usage in the Atlantic region

In this section we consider internet capabilities and usage in the Atlantic region and the impact they may have on online knowledge networks.

Broadband speeds

The Atlantic region likely has somewhat lower speeds than the European average, since it is relatively rural.¹ Lower population densities tend to lead to longer links between the telephone exchange and the consumer, which reduces achieved broadband speeds via ADSL,² the most widely used technology for internet access. Higher speed fibre and cable based broadband are generally simply unavailable in rural areas.

In the UK the result is that the average broadband speed in rural areas is approximately one-third that in urban areas. That said even these rural areas (which will comprise much of the UK portion of the Atlantic region) have average speeds of 3.5 Mbps, according to Ofcom.³ According to a more conservative methodology used by Akamai, Portugal and Ireland have nationwide average speeds of 5.4 Mbps and 7.3 Mbps respectively.⁴

Such speeds represent only a moderate constraint on knowledge networks – they are ample for standard web pages and pdfs, and adequate for standard definition video. In setting its universal service commitment to 2 Mbps broadband,⁵ the UK government noted that this would be sufficient for ‘videoconferencing via TV’, ‘long-form video (MPEG 4)’ and ‘download[ing] a music album in 5 mins’, in addition to supporting a wide range of less demanding services such as eHealth, email and so on.⁶

However, high definition video and higher quality video conferencing may be problematic for connections that have speeds below the averages set out above and applications which depend on higher speeds may therefore be less appropriate for widespread use in the Atlantic region. (We note that the EU has a target for universal availability of 30 Mbps broadband,⁷ and progress towards this will ease bandwidth problems, particularly in rural areas).

¹ See “A revised urban-rural typology” in Eurostat, [Eurostat regional yearbook 2010](#), March 2010. Portugal, Ireland, Wales, Scotland and the French Atlantic coast are all highly rural, though of course urban and mixed areas exist within each

² ‘Asymmetric digital subscriber line’ – a technology that makes use of existing copper telephone lines to provide internet access. Approximately 68% of household access in the EU27 is via DSL, and the figure is likely higher in rural areas. See Eurobarometer, [E-Communications Household Survey](#), June 2012

³ Ofcom, [UK fixed-line broadband performance, May 2012](#), 15 August 2012

⁴ Akamai, [State of the Internet](#), 1st Quarter 2012. This reports a 5.6 Mbps average connection speed for the UK, compared to Ofcom’s figure of 9.1 Mbps

⁵ BIS/DCMS, [Digital Britain](#), June 2009

⁶ BIS/DCMS, [Digital Britain – The interim report](#), January 2009

⁷ EC, [European Broadband: investing in digitally driven growth](#), 2010

Mobile coverage

In the Atlantic region countries, 3G coverage is at least 92% of population in all cases (at end 2010). However, the uncovered population is likely to be in more rural areas, and territorial coverage is much lower – 52% in France and 60% in the UK.⁸ It therefore is likely that there are significant numbers of people in the Atlantic region without access to mobile broadband. This may impact on the use of knowledge networks and the competitiveness of the region more generally, since mobile data is increasingly seen as an important business tool. In a US survey, 25% of companies said smartphones and tablets had provided a significant increase in productivity, with a further 49% reporting some increase.⁹

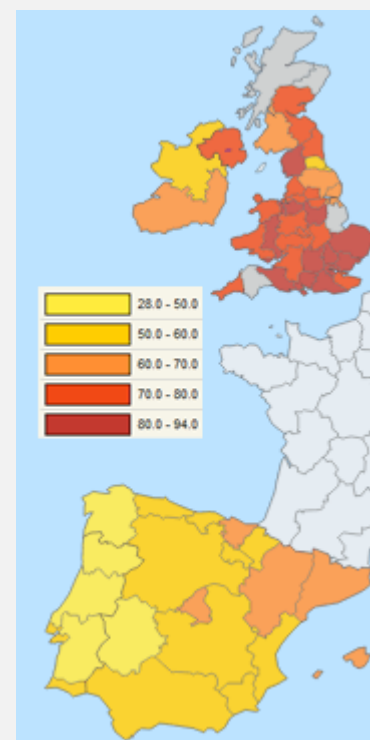
Internet usage

As Figure 1 shows, internet usage does vary materially by region, and within countries is generally somewhat lower in the Atlantic region provinces than elsewhere (with a number of important exceptions). However, variations within countries are less important than variations between countries. For instance, while several Welsh regions have usage levels below the UK average, they all have higher levels than any Portuguese region.

Further, even in some of the regions with the lowest penetration, usage is nonetheless substantial (45% or 46% in the Norte, Centro and Alentejo regions of Portugal, for example), and levels of professional usage may be higher, suggesting that there are worthwhile ‘addressable markets’ for online knowledge networks. Adoption is also likely to rise, with adoption rates in different regions likely to converge over time.

However, levels of adoption will ‘scale’ the benefits of online knowledge networks, and clearly it is and will continue to be premature to assume ubiquity of consumer internet access (even allowing for mobile). Thus, while the UK government now requires online filing of certain corporate pay roll taxes (for example), it does not do so for personal tax filings.

Figure 1: Individuals regularly using the internet, (Percent, 2010)¹⁰



Note: 2010 NUTS2 data unavailable for France, some UK regions

⁸ iDATE, [Broadband coverage in Europe](#), December 2011

⁹ CDW [National Monitor](#), May 2012

¹⁰ [Eurostat](#)

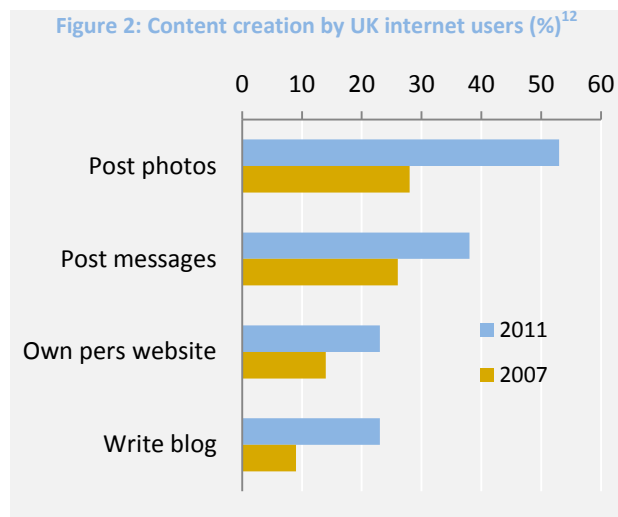
ICT skills

Parts of the Atlantic region may have relatively low workplace ICT skills – certainly France, Spain and Portugal are all below the EU average for the portion of the workforce with ICT skills, and their Atlantic provinces may in turn be below national averages. However both the UK and Ireland are well above the EU average.¹¹

Regardless, this need not be a general barrier to the use of online techniques to support innovation. As the web matures, ease of use improves and services move to the cloud, it is requiring less technical skill to accomplish tasks online. For instance, establishing a website previously required having (or hiring) HTML coding skills, securing a hosting provider and so on. Today Google Sites and other providers offer web-based, WYSIWYG interfaces to build sites. These are often free (in their basic version) and require little more than word-processing skills to use. Retailing online was even more complex – now it is as simple as setting up an eBay or Amazon merchant account.

Likely in part because it is becoming simpler, users are increasingly likely to be creating their own online content. Activities such as uploading photos, posting messages and writing a blog or maintaining a blog are increasingly common, suggesting the potential for substantial knowledge sharing (see Figure 2).

However the flip side of the simplification of the technology and rising skill levels is that barriers to entry are much lower than they once were. This has led to a far more competitive market (be that competition for revenue or attention). As we discuss in more detail below, the web has become very crowded, and thus being discovered and retaining an audience has become more challenging.¹³ Thus while ICT skills may be less important, community building and marketing may be more critical now.



¹¹ European Commission, [Monitoring digital competencies](#), 2011. Note that the threshold competency to qualify as 'ICT skilled' for the purposes of the survey quoted in this report is "competent users of generic tools (e.g. Word, Excel, Outlook, PowerPoint) needed for the information society, eGovernment and working life". See footnote nine of the report

¹² Dutton, W. & Blank G. [Next Generation Users: The Internet in Britain](#), OII, 2011

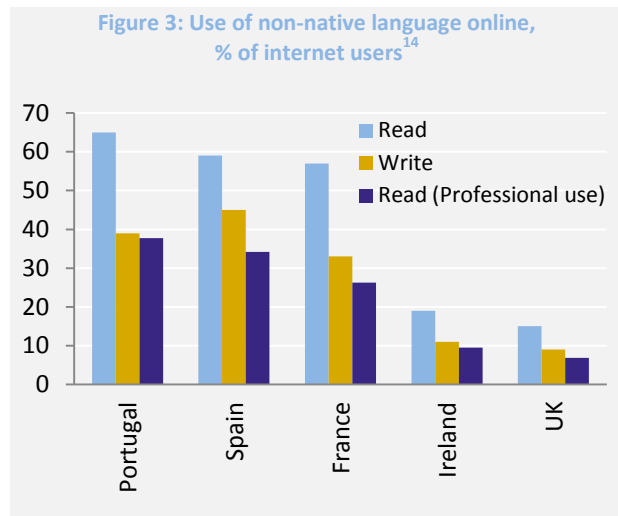
¹³ See page 22 onwards for a more detailed discussion

Linguistic Diversity

The Atlantic region contains four major languages (Portuguese, Spanish, French and English) and a number of minor languages, including Welsh, Irish, Britton, Basque and Galician. Unsurprisingly, internet usage tends to follow linguistic lines, and from this perspective the Atlantic region is a fragmented market for knowledge networks.

Of the Atlantic region countries, only in Spain do more than 50% of internet users use a second language to write online – see Figure 3. Moreover, the portion of those using a

language online who are willing to do so for professional purposes is considerably lower – none of the countries in question has more than 40% even reading foreign language sites for professional reasons (with the number writing likely to be appreciably smaller).



Note that sites with committed users can ask them to do translation work – Facebook’s site language (as opposed to user generated content) was virtually entirely translated into French in 24 hours by volunteers.¹⁵ On a smaller scale, the Europeana European heritage site is also being translated into various languages in part by volunteers.¹⁶ However, while this approach is plausible for static content it is not workable for dynamic content such as dialogue between community members.

In time, Google Translate and similar tools may develop to the point that they materially reduce linguistic barriers. However, at the moment they are primarily useful to the determined researcher working on familiar ground. It would simply not occur to most knowledge seekers to use such tools to find relevant information in languages they did not know, and even if it did, the process is (for the time being) laborious.

¹⁴ Eurobarometer, [User language preferences online](#), May 2012

¹⁵ *Forbes*, [“Did MySpace's Demise Have Anything To Do With Bad Growth Hacking?”](#), 13 September 2012

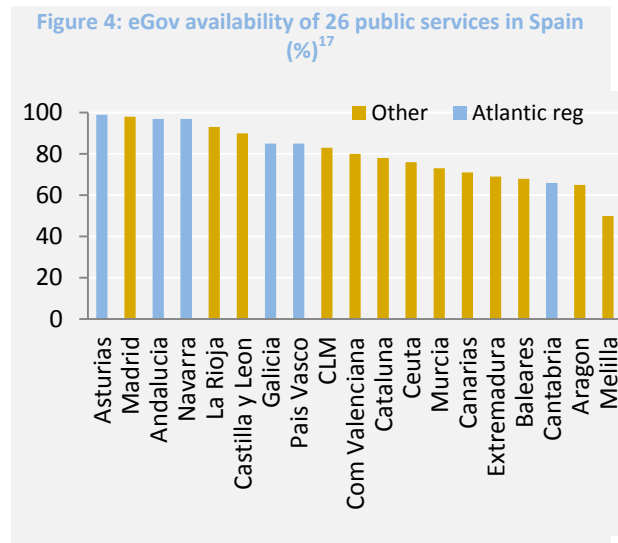
¹⁶ Europeana website, [‘about exhibitions’](#)

Conclusion

Available infrastructure places some constraints on the potential for knowledge networks in the Atlantic region, particularly those that may depend on mobile data services.

However, the more significant constraints are likely the human factors – whether individuals have chosen to use the internet at all, or (for cross-border offers) whether they have the language and relevant digital skills to use the service in question.

That said, while the potential user base in the Atlantic region may be somewhat smaller than elsewhere in Europe, that is very different from saying that online applications aren't worthwhile, or that services in the region lag those available elsewhere. Consider for example Spanish eGovernment deployment, which is generally higher in Atlantic region provinces than elsewhere (see Figure 4).



¹⁷ CapGeminin / Fundación Orange, [Estudio Comparativo 2012 de los Servicios Públicos online en las Comunidades Autónomas](#), 2012

3. Social & economic distinctiveness of the Atlantic region and its significance for knowledge networks

The Atlantic region has a range of characteristics that, in aggregate, make it distinct from the rest of Europe. These include its long coastline and associated tourism and maritime industries, its comparative remoteness, its largely rural interior and so on.

One consequence of the region's relatively low number of major cities and comparative inaccessibility is that it does not contain a large number of corporate headquarters – see Figure 5. There are only five (arguably four) Fortune 500 headquarters in the Atlantic region.¹⁹ While larger companies certainly do not only transfer knowledge via their headquarters, it seems likely that knowledge networks in the Atlantic region will provide greater benefit if they are designed to serve SMEs well (though certainly not exclusively).

'Horizontal' solutions to address the Atlantic region's needs

However, while the Atlantic has a distinct set of characteristics, it shares individual characteristics with many other areas of Europe, and this commonality may be more important for many potential instances of knowledge sharing. For example, for the SME seeking to offer a hill walking tours in the Pyrenees, the fact that there is nearby coastline is largely irrelevant. Useful expertise is perhaps more likely to come from other operators in mountainous regions (in Europe or elsewhere) rather than from the wider Atlantic region. A Galician fisherman is unlikely to spurn advice on marine diesel maintenance or fish finding techniques because it comes from the Adriatic.

Given the importance of critical mass to many types of knowledge network (discussed in more detail below), this suggests that the best solution for local needs within the Atlantic region may in fact be a national, Europe-wide or global one.

Figure 5: Fortune 500 headquarters in and around the Atlantic region¹⁸



¹⁸ Adapted from [Fortune Global 500 2011](#)

¹⁹ Banco Bilbao Vizcaya Argentaria (Bilbao), Imperial Tobacco (Bristol), Co-Operative Group (Manchester), CRH and Accenture (both Dublin). Note that while legally headquartered in Dublin, Accenture retains substantial administrative operations in the US

4. Existing Commission activities in the area of knowledge networks

A view that many industries and needs can be well served with a ‘horizontal’ approach is implicit in other Commission funded programmes, which exist in each of the areas of focus for this report.

Tourism

One in the area of tourism is the ‘Digital Agenda for a New Tourism Approach in European Rural and Mountain Areas’. DANTE is seeking “to improve the effectiveness of regional policies in the area of innovation by enhancing the role of ICT in tourism industry in rural and mountain areas.”²⁰ While it does not have participants in the Atlantic region, there is no reason to expect its outputs will not be relevant to those involved in rural and mountain areas therein.

A second relevant Commission project is ‘I-SPEED’ looking at the information society and tourism, and funded by INTERREG IV.²¹ According to a Powys (Wales) county councilor who participated in the project “Through working with our European partners [from Italy, Norway, Greece and elsewhere], we have discovered that although we may face different challenges, in most cases the solutions to these are the same”.

A third pan-European Commission project in this area is the ICT & Tourism Business Initiative,²² though its scope is wider than knowledge networks. It aims to develop a “practical support portal” that will “assist businesses (mainly SMEs) in each step of their decision-making and business processes ... providing them with all kind[s] of valuable and practical information that could be of interest to a company of the tourism industry in the EU.”

Knowledge transfer

In the area of knowledge transfer, ‘KTForce’ is an INTERREG IV/ERDF funded program to develop a ‘set of strategic recommendations for future design of innovation policies and implementation of KT practices’. This has a pan-European scope, and includes several partners in the Atlantic region.²³ There is also the longstanding CORDIS website²⁴, publishing the results of EU funded research. One of its objectives is to “promote the dissemination of knowledge in order to reinforce the innovation capacity of enterprises”.^{25 26}

²⁰ DANTE [website](#)

²¹ I-SPEED [website](#)

²² European Commission website, “[Tourism / ICT & Tourism Business Initiative](#)”

²³ KTForce [website](#)

²⁴ Cordis [website](#)

²⁵ EU Publications office website, “[What is CORDIS](#)”

²⁶ See also adjacent EU activities, such as the completed [eResearch2020](#) project

eGovernment

For eGovernment the Commission offers the ePractice.eu portal²⁷, covering eGov, eInclusion and eHealth. It is designed to enable “its users to discuss and influence open government, policy-making and the way in which public administrations operate and deliver services.” In addition to a substantial online set of case studies, a library of relevant documents and national profiles and online fora, the organisation also runs a number of real-world events.

Clearly there is a substantial existing base of Commission activity in the areas of focus that can be built on to create networked innovation platforms. In the remainder of this report we consider the different types of such platforms and how to make them successful.

²⁷ ePractice [website](#)

5. A taxonomy of online knowledge sharing?

Online knowledge sharing covers a very wide range of activities, from the simplest static website to substantial databases of academic research. At a high level we can categorise such knowledge sharing both on the basis of the complexity of the knowledge being shared, and on the level of interactivity in the sharing:

Figure 6: Categories of online knowledge sharing

		Knowledge to be shared	
		Simple	Complex
Mode of response	Static	EG: Numerous content driven websites KSF ²⁸ : Quality content SEO ²⁹ /Promotion	EG: 'PDF' content, such as academic papers, commercial white papers, government publications etc KSF: Open access; language that is accessible to target audience; discoverability
	Bespoke	EG: Message board respondents answering queries KSF: Critical mass for online community; Qualified/identifiable experts within the community	EG: Acad/commercial partnerships, consultancy, internships, industry associations etc <i>[Online aspect usually minor, eg for discovery only, and may be of limited importance to overall success]</i>

Note that knowledge need not be complex to be valuable – a hotel operator might hear about TripAdvisor on a message board, and thereby discover highly useful feedback from consumers about his property.

More complex and bespoke information is somewhat more likely to be primarily delivered off-line (through a placement with the client, consultancy or the like). Both the gathering of relevant contextual information and the delivery of solutions are likely to be face-to-face.³⁰ However, even in such scenarios, the more unusual the problem being solved, and the more specialised the expert required, the more important discovery and matching the right expert becomes – in this aspect of complex and customised knowledge sharing, the internet can have a vital role to play.

There are of course exceptions to the idea that complex and customised information is likely to be delivered off-line. Databases and search engines can deliver results that are both specific and complex. There are also many cases of online communities working together to generate rich information and complex products of a less bespoke type – Wikipedia and open source software development being two examples.

²⁸ Key success factors

²⁹ Search engine optimisation, to ensure high ranking in Google or other search results

³⁰ Of course almost any professional interaction is likely to involve at least incidental use of email, but we set aside this use of the internet for the purposes of this paper

6. Knowledge networks in eGovernment

We now turn to examples services in our areas of focus: eGovernment, tourism and knowledge transfer, considering both sites that are successful and some that may be less so.³¹ We finish each section with some conclusions from the examples considered. (Given the relatively limited number of examples, these conclusions should be taken as tentative rather than categoric).

Within the domain of eGovernment there are two levels of knowledge network. There are knowledge networks about the best practices of eGovernment, and of course eGovernment itself can involve substantial knowledge transfer. We take these in turn.

eGovernment best practices

Introduction

There are numerous online knowledge networks in the area of eGovernment, and they are primarily 'top-down'.³² A number have been established by international bodies such as the OECD and the European Commission³³, or by national governments (as in the examples below).

There are some clear practical reasons for this. Governments have a very direct interest, and it is natural for them to be active in knowledge sharing in this area. Further if they are to learn from their peers, national governments will by definition need to look internationally. Finally, whether at a local or national level, governments are not direct competitors, making them more likely to participate in knowledge sharing.

We have selected our sample sites from within the Atlantic region.

³¹ In addition to the examples offered within this report, we note that the KNETWORKS project offers other examples via its [website](#)

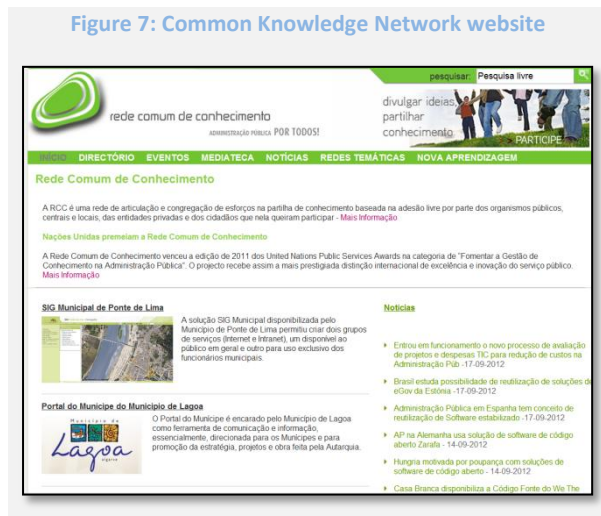
³² There are certainly exceptions. See for instance [PloneGov.org](#), an association of regional governments focused on knowledge sharing and development in the area of open-source regional and local eGov platforms

³³ See the OECD's developing [Observatory of Public Sector Innovation](#) and the EC's [ePractice](#) site. For a more generalist set of case studies of EC projects, see also the Inforegio [Policy Learning Database](#) and [Projects Database](#)

Common Knowledge Network (CKN)

Portugal's Common Knowledge Network³⁴ (Rede Comum de Conhecimento) was set up in 2008 by the country's Agency for Public Services Reform (Agência para a Modernização Administrativa). The Network serves central, regional and local government bodies in Portugal and other Portuguese-speaking countries, and provides them with a wide range of case studies of successful government projects such as administrative modernisation and simplification, interoperability, the distribution of public services and so on.

Figure 7: Common Knowledge Network website



The site has over 300 case studies from over 160 entities. (Compare these 300 studies for Portugal to the 1600 in the EC ePractice database, covering a population approximately fifty times larger). Many but by no means all of these case studies relate to eGovernment. Members (of which there are over 550) can upload case studies of their projects, which are then reviewed by the Network team prior to publication.³⁵ The site also offers a document library, a news feed, members' for a, wikis and so on.

The website receives 8,000 visitors per month.³⁶ Its traffic has not grown purely on a grass-roots basis – a large number of municipalities made a strategic commitment to support use of the site.³⁷ In 2011 CKN received a UN Public Service Award for advancing knowledge management in government.

³⁴ CKN [website](#)

³⁵ Government of Portugal, [Exportable Portuguese Projects of Administrative Simplification](#), January 2012

³⁶ Google Ad Planner

³⁷ Simplex website, ["Medidas do Simplex Autárquico"](#)

KnowledgeHub

The UK's Local Government Association launched KnowledgeHub³⁸ in December 2011, a professional social network for those in local government. It offers groups, direct messaging, email updates, blogs and various other features. It includes groups focused on eGovernment, such as 'Local DirectGov', aimed at providing practical assistance on integration with DirectGov, BusinessLink and other central government eGovernment services.

Figure 8: KnowledgeHub website



KnowledgeHub is a successor to an earlier LGA offer, the Communities of Practice. According to the LGA

“[t]he CoPs were very good for the time, but they predated the social media explosion. The problem we found was that communities were quite siloed - if you went into a CoP you wouldn't know what was happening in another community. The Knowledge Hub is open source and interacts with social media, public blogs and instant messaging.”³⁹

The site is widely promoted in internal government literature. It features for instance in the guide given to new local councilors.⁴⁰ It receives 47,000 visits per month, and has 130,000 registered users (a ratio that highlights the challenges of converting an initial visit to a recurring habit).⁴¹

Other sites

The sites above are just two examples of specialist sites offering eGov community features and/or repositories of eGovernment case studies.⁴²

In addition to specialist sites there are also eGov communities on generalist websites such as LinkedIn.⁴³

³⁸ KnowledgeHub [website](#)

³⁹ Sarah Jennings, head of digital communications and knowledge at the LGA, quoted in *UK Authority IT in Use*, “[Knowledge hub architects defend community switchover](#)”, May/June 2012

⁴⁰ LGA, [Councillor's Guide](#), 2012/13

⁴¹ *KnowledgeHub Blog*, “[Please do not adjust your set - what's next for KHub?](#)”, 31 August 2012

⁴² See for example the Government of Victoria's [eGov](#) site, the commercial [GovLoop](#) and the OECD and EU sites mentioned above

⁴³ See for instance the [Administración Electrónica y Función Pública 2.0](#) and [eGov Community](#) groups, each with approximately 4,000 members

eGovernment sites

Governments' websites have been on a steep trajectory of increasing sophistication. As with many corporate sites, they began as static, information sites anchored in the existing organisational structure of government (for instance, one site per department). Over the last decade a wide range of transactional capabilities have been added, for everything from income tax to applications for hunting licences. This has been spurred both by a desire to cut costs and to improve convenience for citizens.



While work continues to encourage uptake of these services⁴⁴, attention is now shifting to:

- A *'whole of government'* approach to the web, offering citizens a single point of entry to a wide range of services from different departments and levels of government. Examples include France's service-public.fr and the UK's gov.uk (currently in beta, but due to be launched in October 2012)
- *Open government*, providing greater transparency about government operations and publishing for reuse government data sets (such as Ireland's planned GovStat service)
- *Enabling direct participation* by citizens, allowing them to make comments and suggestions on potential and existing regulations. The Pais Vasco's 'Irekia' service is an example

Irekia

Irekia is the open government platform for the government of Pais Vasco (Basque Country), launched in January 2010. It is built on the principles of: (i) transparency, the real-time provision of information on the government's plans and activities; (ii) participation, giving citizens the chance to debate, evaluate and critique issues under consideration by the government, and to present their own ideas; and (iii) collaboration, the idea that government, citizens and companies can work together to create a better society.⁴⁵

The site includes both government and citizen proposals (with the ability to discuss and vote on each), citizen questions and government responses, blogs, news feeds and so on. It also has extensive links to social networks including Twitter, Facebook and YouTube. While not an element of the site, the government also has a policy of 'active listening', monitoring discussions of legislative issues on social networks.

⁴⁴ See discussion in UN, [E-Government Survey 2012](#), March 2012

⁴⁵ Irekia [website](#)

The platform has now also been adopted by the Brazilian government and is being rolled out in the city of Berisso.⁴⁶ The platform is built on open source software, and is itself to be released under a European Union Public Licence (an open source licence).⁴⁷

Conclusions

- While it is important for a knowledge sharing site to feel ‘up to date’ and have contemporary features, [success does not require unique technical capabilities](#) – both the CKN and the KnowledgeHub sites have a very standard set of features
- [Setting the right scope for the offer is important](#) –too broad will feel unfocussed, but too narrow risks being sub-scale. CKN, KnowledgeHub and many other such sites cover general government good-practice, not just eGovernment, and CKN consciously reaches out to international Portuguese speakers. Such breadth helps build a community with critical mass, even if the focus of the site sponsor is narrower.
- [Driving traffic is key](#). Both KnowledgeHub and CKN have benefited from active promotion by their countries’ local government bodies.
- [The site is only one part of the offer](#). Both KnowledgeHub and Irekia make active use of social media
- Given the range of knowledge sharing networks for eGovernment that already exist in the EU, [it may be better to encourage greater use of existing platforms rather than build new ones](#). That said, it may be appropriate to replicate existing platforms in additional languages, if there is not already a vernacular equivalent

⁴⁶ Irekia website, [“Argentina employs Irekia software for its Open Government”](#), 25 November 2011

⁴⁷ Neowin.net, [“Spain: Basque Country embraces exclusively open source software”](#), 30 May 2012

7. Knowledge networks in tourism

Introduction

Tourism is a highly fragmented and heterogeneous industry. Participants include everyone from small local attractions to global hotel chains.

Knowledge networks for tourism, by contrast to those for eGovernment or knowledge transfer, are complicated by the fact that at a local level participants may be in direct competition. This is not to say they have no interest in working together. On the contrary, destination marketing organisations (in which those involved in tourism in a particular location join forces to encourage visits to that location) are common.

However, hotels (for example) are likely to be more reluctant to share knowledge about their own operations with their local competitors, for obvious reasons. Perhaps because of this, much networking appears to take place at a national or international level. It may be that higher than average language skills in the industry facilitate international networking.

Because the industry is so fragmented and heterogeneous, it can be hard to market to, making promotion of specialist sites more challenging (unlike the audience for eGov sites, where as we have seen national governments are well placed to promote usage). This may be one reason why knowledge networks in tourism seem to make heavier use of existing well-known generic platforms, in particular LinkedIn.

Tourism networks on LinkedIn

LinkedIn, with its diverse and international community, is heavily used by tourism professionals. There are 3,506 tourism related groups set up on LinkedIn.⁴⁸ These range from the broad to the highly focused (see Figure 10).

⁴⁸ LinkedIn Groups search for [‘Tourism’](#), 12 September 2012

Figure 10: Sample tourism related groups on LinkedIn⁴⁹

Members	Group
127,638	Hotel Industry Professionals Worldwide
94,064	Travel & Tourism Industry Professionals Worldwide
41,698	Travel, Tourism & Hospitality Group
23,919	World Tourism Network
13,245	Travel, Hosp'ity, Aviation & Tourism Ser's prof'nals
10,260	Adventure Tourism and Travel Professionals
5,416	Tourism 2.0
3,757	Tourism Professionals
3,222	Turismo Portugal
3,169	Medical Tourism & Medical Travel
1,729	EVENTOS & FREELANCE ESPAÑA
1,486	Bed & Breakfast Owner
1,133	Profissionais de Turismo em Portugal
865	Irish Travel Industry

Members	Group
809	Cercle numérique d'ATOUT FRANCE
745	Tourism Intelligence Scotland
712	Hosp'ity Sales and Marketing Assoc intl – Ireland
683	Fáilte Ireland's Business Tourism Industry Group
642	Social Media for Travel & Tourism, Ireland
577	Great Wine Capitals Global Network
480	Hoteliers & Chefs – France
473	Turismo para Portugal
463	Web-Checkers Tourism SME's
400	Profesionales del Turismo y la Hostelería en España
136	French Travel & Tourism Industry Professionals
127	Leader in Tourism management in Portugal
124	South West England Tourism Forum
121	Digital Tourism Wales

There are also specialist sites:

Accommodation Know-How

Accommodation Know-How⁵⁰ is a site developed by Visit England, the national tourist board. It provides information on regulations affecting bed & breakfast and self-catering businesses, marketing tips, advice on dealing with common problems, a news feed, email updates and so on.

It also has a forum where members discuss a wide range of issues from the merits of different online booking systems to “guests who behave like filthy beasts”.

Figure 11: Accommodation Know-How website



⁴⁹ LinkedIn. Member numbers as of 12 September 2012. Groups shown are an arbitrarily selected and small subset of all tourism related groups

⁵⁰ Accommodation Know-How [website](#)

Cruise Baltic

Cruise Baltic, established in 2004, is a network of 24 major cruise destinations in the Baltic Sea, with the aim to “to integrate the region’s international cruise tourism industry by exchange of knowledge and information”.⁵¹

It is in part a destination marketing organisation, but an unusual one in that it is international. It seeks to promote Baltic cruising, both by marketing to consumers but also by providing port and destination information to cruise lines.



Figure 12: Cruise Baltic website

The website includes information for both these constituencies, a market review and industry statistics, results of joint consumer surveys and a members’ area including business intelligence, activity plans and material from various working groups. Members also attend regular conferences.

Destinet

Destinet⁵² is a portal designed to enable “professional sustainable tourism stakeholders to collectively manage the knowledge needed for businesses and destinations to be more competitive and responsible.” It was initially set up in 2002 by the EEA, UNWTO, UNEP and Ecotrans. More recently it has received EU funds via the FASTLAIN project.

The site has directories of members of different types, a curated collection of relevant literature and links, the ability to create hubs for different destinations and so on.

While the site contains a substantial amount of information, navigation is not intuitive and community features are not readily accessible. Traffic levels appear to be low⁵³ - it may be that potential users are choosing instead to seek information via general search engines, rather than coming through an intermediary portal.



Figure 13: Destinet website

⁵¹ Cruise Baltic [website](#)

⁵² Destinet [website](#)

⁵³ Based on [Alexa](#), though note that this is at best an indicative guide to traffic levels

Conclusions

- The appropriate platform (specialist or general) depends in part on the audience being targeted. For harder to reach audiences such as the diffuse community of organisations operating in tourism, the promotional power of an existing platform such as LinkedIn may be particularly valuable
- Again, success does not require unique technical capabilities. Indeed, the more complex features of Destinet may have been a disadvantage, if they came at the expense of usability
- Given the effectiveness and widespread adoption of general search today, specialist directories may struggle to find an audience

8. Knowledge networks for knowledge transfer

Introduction

There are a number of practical limits on the utility of online platforms for knowledge transfer. The knowledge to be transferred is often highly complex. Much of it is behind a paywall unless published on an open-access model.

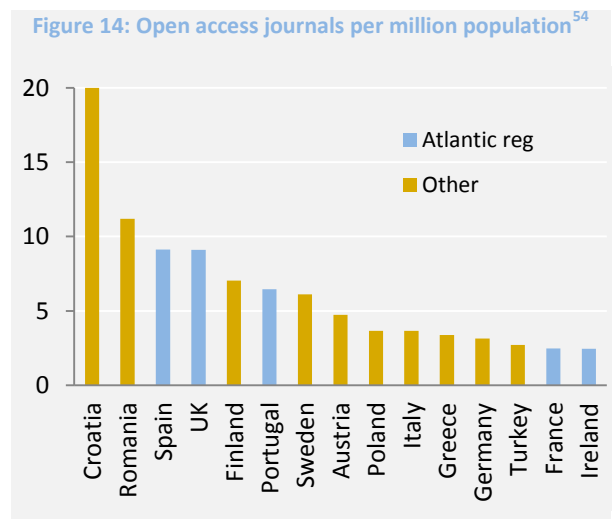
While the open access model is growing, open access journals are still unevenly available in different countries (see Figure 14). Moreover, even if the journal in question is open access, it may be written in academic language (appropriately enough for its prime audience) which may make it inaccessible for some of those who might commercialise that knowledge.⁵⁵

Both these factors can make searching online for relevant academic knowledge unproductive, and of course it may be that the company best placed to capitalise on new research never knows to search for it in the first place – their need for that knowledge may be latent.

There is evidence that SMEs do not, by default, look to universities for assistance, and even when they do, they may struggle to convert that assistance into business success,⁵⁶ (though of course there are many exceptions to these generalities).

A particular challenge for online networks to support knowledge transfer is that knowledge transfer is a 'two-sided market' – as is well understood, it involves two constituencies with different motives, practices and vocabularies. Any site seeking to facilitate knowledge transfer must meet the needs of not just one group but two (unlike, say, peer-to-peer networking amongst government officers or hoteliers).

Finally, for knowledge that is complex and bespoke, as we have noted above the knowledge transfer may be more likely to take place offline – the role of online platforms in such cases is primarily to match expert and problem. One such site is ISIN.⁵⁷



⁵⁴ Author's analysis of [Eurostat](#) and [DOAJ](#) data

⁵⁵ See [Research Media](#) as an example of a commercial organisation seeking to support research institutions in the wider dissemination of their work

⁵⁶ Hughes, T., O'Regan, N. & Sims M., "[The effectiveness of knowledge networks: An investigation of manufacturing SMEs](#)", *Education + Training*, Vol. 51 Iss: 8 pp. 665 – 681, 2009

ISIN

In 2009 Ireland established an ‘Innovation Taskforce’. In its 2010 report this Taskforce made a wide range of recommendations, amongst which was a proposal for an ‘Innovation Portal’, “a national one stop shop website providing information on all research expertise, innovation, enterprise and other relevant supports available to business.”⁵⁸ IBEC, the main Irish business association, has supported the creation of such a service⁵⁹, though it has yet to be developed.

However, more narrowly focused services do exist, such as the Irish Software Innovation Network, “a free matchmaking and knowledge-brokering service to help software companies to identify and engage with relevant third-level research institutes”.⁶⁰ ISIN is funded by Enterprise Ireland, and meets with companies to assess their needs. It then matches the company with potential academic partners, and provides advice on fundraising and other issues.

ISIN’s site includes a searchable database of research institutions, research projects and companies, to enable those providing or requiring IP to seek a match. It also provides information on available EU and Irish research funding and tax credits, plus a range of case studies of university/industry joint projects.



⁵⁷ See also [Erasmus for Young Entrepreneurs](#), matching young entrepreneurs with their more experienced counterparts for placements

⁵⁸ Innovation Taskforce, [Report of the Innovation Taskforce](#), March 2010

⁵⁹ IBEC website, [“Knowledge transfer networks”](#), 13 November 2011

⁶⁰ ISIN [website](#)

Global Innovation Network

GInnN⁶¹ was set up by the UK's Institute of Knowledge Transfer, and was supported by AURIL (the Association for University Research and Industry Links).⁶² GInnN is “a professional social network and community of practice dedicated to facilitating innovation and business development by bringing together businesses, entrepreneurs, academics, researchers and investors in one place”. It offers tools to find members with like interests and skills, groups, discussions and so on.

While it has a useful range of features, GInnN appears to have plateaued. Its membership is showing little growth⁶³, and the message boards appear to be getting limited use.

It could be that one challenge for sites such as GInnN is that while knowledge transfer may be a persistent interest for academics, for those on the commercial side it is likely to be more periodic – sparked by having a particular problem to solve. This makes it harder to persuade those on the commercial side to habitually participate in fora such as GInnN, and this in turn may discourage academic participation.

Figure 16: GInnN website



⁶¹ GInnN [website](#)

⁶² Hensmann, J. & Haine, P., *Developing Innovation Networks and Communities of Practice - Project Report*, June 2007

⁶³ Membership was “about 4000” in February 2011 (McCaul, B, *“Web 2.0 meets KT”* [Transcript], 17 February 2011) and is 4,427 as of 24 September 2012

Knowledge transfer in France

Knowledge transfer programmes can operate at a national or regional level. For instance, France's CIFRE programme⁶⁴ seeks to place doctoral students with companies to undertake research projects. A website is used to promote opportunities to students and vice versa. However, it operates on a pan-France basis, and does not have the facility to search geographically.⁶⁵

By contrast, France has established numerous 'pôles de compétitivité' (competitiveness clusters). These are anchored in particular cities or areas, and seek to bring together research labs, training institutions and companies with a focus on a given sector. Examples in Atlantic region provinces include 'Xylofutur' (biomaterials), Route des Lasers (optics/photonics), Images et Réseaux (ICT) and several others. Note however that the online aspects of these clusters are not central - Images et Réseaux, for example, primarily offers a standard institutional site, though with some group collaboration tools.⁶⁶

More recently France has also established regional knowledge transfer organisations, known as sociétés d'accélération du transfert de technologies (SATTs). Both Aquitaine and Bretagne have set up SATTs, though they are still in their early days, appointing key staff. Thus it is too soon to assess their impact.

Conclusions

- For any network, but particularly for those addressing knowledge transfer, [it is key to understand the needs of the user](#). Why will they come to the site, and what will they seek to do there? For sites that depend on an active community, are these needs recurrent enough to drive sufficient repeat visits?
- [The dynamics of knowledge transfer may mean the internet is better placed to play a supporting rather than central role](#) in this area. That said, the potential of open access to academic research, particularly for those without access to university subscriptions to journals, is evident

⁶⁴ Run by the Association Nationale de la Recherche et de la Technologie

⁶⁵ See the [relevant section](#) of the ANRT website

⁶⁶ Images et Réseaux [website](#)

9. Requirements for success of online network offers

As we have seen, success for online knowledge networks is not guaranteed, and can be particularly challenging for those which depend on a vibrant community. Online services based on such networks need:

- Functionality
- Awareness
- Sustained and broad usage
- Participants with identifiable expertise

We consider these success factors in turn. We then consider some of the particular tools that governments and government-funded sites have available to them to meet these needs.

Functionality

Clearly a service must meet a user need (actual or latent) in order to be successful. Clarity on the need to be met is a critical component of proposition design.

However, addressing an unmet user need does not necessarily imply building a new platform. An increasing range of platforms exist, on top of which a particular knowledge network could be built. For instance, for sharing of experience and ideas amongst a group of professionals, it may simpler to set up a new LinkedIn group rather than developing a new platform. Indeed, LinkedIn is already being used extensively in this way, as we have seen in tourism, for example.

Clearly the use of existing platforms has cost and speed advantages, albeit at the cost of a measure of flexibility and control. It seems plausible that for many new knowledge networks it would be a useful early step to consider whether they require a proprietary platform.

To take one example, Prof Sir Tim Wilson, in his recent review of knowledge transfer in the UK, wrote:

“[The Technology Strategy Board] has created a platform for networking in *_connect* and there is evidence that it is being used successfully. However, it is not clear how it can be distinguished from other readily available social networking tools. In the context of its investment priorities, TSB may wish to re-assess whether *_connect* provides a value for money solution to its networking activities.”⁶⁷

⁶⁷ Prof Sir Tim Wilson, [A Review of Business–University Collaboration](#), 2012

A contrasting example is CarbonInspired, a knowledge transfer network aimed at SMEs involved in nanomaterials in Spain, Portugal and Southern France. It has its own website but nonetheless operates its own group on LinkedIn, facilitating discussion amongst members.⁶⁸

Awareness

An enormous challenge for any online offering is being discovered and building awareness. There are currently 620m active websites globally, and many more webpages.⁶⁹ Search is how users navigate this plethora of choice – in the UK, those using search as their main way to look for information online has risen from 20% to 61% since 2005.⁷⁰

However, the large number of results for even relatively focused searches means that being discovered is still a significant challenge. Consider the number of results for the following searches:

Figure 17: Number of Google results from sample searches⁷¹

Search	Number of results
egov expert Ireland	1,710,000
dématérialisation des marchés publics guide pratique [public e-procurement practical guide]	3,350,000
Knowledge transfer	22,200,000
bearing materials university research	377,000
buenas practicas higiene restaurant [best practices restaurant hygiene]	217,000
Hotel marketing	541,000,000

Given that 70% of European internet users will abandon a particular search after reviewing just the first 20 results, this suggests that even for relatively narrow searches, vast numbers of sites are going unseen.⁷²

Even the above search metrics understate the problem, since they implicitly assume that the user is looking for relevant information in the first place. In practice, business operators have numerous demands on their time, and may not seek out information with the potential to improve their business.⁷³ Clearly in such a case even a high search engine ranking for a knowledge network will not help.

⁶⁸ CarbonInspired [website](#)

⁶⁹ Netcraft, [September 2012 Web Server Survey](#), 10 September 2012

⁷⁰ Oxford Internet Institute, [Next Generation Users: The Internet in Britain](#), October 2011. In the US, Pew has found a significant increase in frequency of search use – those using it daily has risen from 35% to 54% between 2004 and 2012. Pew Internet, [Search Engine Use 2012](#), 9 March 2012

⁷¹ Google searches, 12 September 2012

⁷² *MediaWeek*, [“European web users stop searching after first 10 results, report reveals”](#), 15 December 2009

⁷³ Marcella R. & Illingworth L., [“The impact of information behaviour on small business failure”](#), *Information Research*, Vol 17 No 3, September 2012

Thus, while any online knowledge network must be functional and meet a need, this by itself is far from sufficient. There must also be a strategy or mechanism to ensure it is discovered.

To take a practical example, the OECD's 2010 eGovernment review of Denmark praised it for being "at the forefront of eGovernment development and implementation", but one of the review's three main recommendations was that the country should "[e]nhance the public awareness of already implemented eGovernment solutions through a massive promotion and marketing effort".⁷⁴

Even Google, with its massive brand presence online and ability to cross promote, spends heavily to promote its products, buying \$213m of advertising in the US alone in 2011.⁷⁵ This is not to suggest that any knowledge network for the Atlantic region must be supported by ad spend – rather it is to highlight that adoption cannot be taken for granted, even for a quality offering, and therefore a strategy for promotion is essential.

One route to awareness can be piggy-back off existing networks. To extend the LinkedIn example, a new knowledge sharing group on that site could be promoted via 'seed' members' existing professional networks, LinkedIn would by default promote it to other site participants who might be interested and so on. Obviously the worth of such an approach depends on the nature of the knowledge being shared – while well suited for unstructured, text based exchange, LinkedIn is not an appropriate venue for third party databases.

Sustained and broad usage

Awareness can provide the first visit, but of course it cannot guarantee the second visit. If the purpose of the site has been delivered by that first visit – for instance, the user has found the critical information they need from a 'static' website – then that may not matter.

However, for network dependent applications, delivering value through a sustained dialogue between participants, repeat visitors are critical. This requires building and sustaining new habits on the part of users. The application may be so compelling this happens naturally, regular email updates may encourage visits and so on. However, it is axiomatic in VC funding that a need to build new behaviours brings risk. As Vinod Khosla⁷⁶ puts it: "Anything that requires people to change their habits has a low probability of success".⁷⁷

The level of usage of online networks is evident to other users – they can see the pace at which questions are asked or answered, they can gauge membership levels and so on. This creates the potential for both vicious and virtuous circles, as Bebo and Facebook demonstrate respectively. It is possible that the GInnN site is on the wrong side of this dynamic.

⁷⁴ OECD, [Denmark: Efficient E-Government For Smarter Public Service Delivery](#), June 2010

⁷⁵ Wall Street Journal, [Once Shunning Ad Promos, Google Now Flaunts Itself](#), 27 March 2012

⁷⁶ Co-founder of Sun Microsystems, partner of Kleiner Perkins Caufield & Byers and founder of Khosla ventures

⁷⁷ San Francisco Chronicle, ["On the record: Vinod Khosla"](#), 11 May 2008

A further challenge to sustaining usage is that users' expectations are constantly rising. They operate in an internet world where global companies with large development budgets are constantly improving their offers. This means that a feature set on a site that might have seemed sophisticated two years ago can appear rudimentary today. Thus independent community sites need to commit to steady updates of both content *and* platform. As we saw, the UK's Local Government Association created the KnowledgeHub website as a successor to the earlier Communities of Practice, since the latter's capabilities were becoming dated.

Once again, all this suggests 'piggy-backing' off existing networks or behaviours of the user where practical – it may be easier to append a new community to an existing social network habit, rather than seeking to build the habit of visiting an additional site. (Of course this depends on their being an existing platform that delivers the necessary functionality).

Participants with identifiable, relevant expertise

While a site with an active community has a better chance of having expert participants and of providing answers to any given question, this leaves the challenge of assessing the quality of the answers received. Even within expert communities, assessing quality can be a challenge.⁷⁸ These challenges are even greater if the consumer of the information is not an expert in the relevant field.

⁷⁹

A variety of tools can assist with this problem. On sites such as Reddit the community up-votes or down-votes particular responses. On LinkedIn a respondent's professional background is available to indicate their expertise on the matter in hand. On the EU's ePractice site, members can earn 'kudos' points, which appear alongside their profile (though they appear to be awarded for quantity rather than quality of participation).⁸⁰

For academic papers, the prestige of the journal or the authors' institutions may provide a proxy for quality, though even these weak indicators may not be meaningful for those outside academe.

For information published by an organisation (rather than community responses), the credibility of the organisation itself is naturally key, or even its domain – '.gov' URLs are generally given higher credence for instance.

⁷⁸ See for instance: Gill, A., Xenitidou, M., & Gilbert, N., [Quality in Online Science: Concepts and Recommendations for the Future](#), 12 September 2011

⁷⁹ For a discussion of small businesses wrestling with conflicting advice, see Marcella R. & Illingworth L., *ibid*

⁸⁰ ePractice website, ["Kudos & Complete profile"](#)

Government tools

In building awareness and usage, governments have some tools available that commercial sites do not. Most bluntly, they can simply mandate usage. This has in some cases been a politically charged issue, but as internet adoption increases the number of people and organisations that might be disadvantaged is diminishing. Consequently governments are increasingly requiring that citizens and companies engage with them online. For example Ireland has already mandated online filing of tax returns for all companies and a wide range of individual tax payers.⁸¹

Governments also have 'softer' tools at their disposal. For instance, the Accommodation Know-How website placed community features alongside the key repository of information on regulation relevant to their audience. Visitors may have come seeking that regulatory information (which they were obliged to know), but could then be introduced to the members' forum. In the context of eGovernment they can directly encourage their own constituent bodies to participate, as did Portugal with the Common Knowledge Network.

A further advantage governments have is that they are (or should be) interested in the result, not the means – in our current context they wish knowledge to be transferred, but are indifferent to which service enables that transfer. This is in sharp contrast to (say) Amazon, to whom it matters very much not just that a customer buys a book, but that they do so via amazon.com.

This is an advantage to governments since it enables (indeed strongly argues for) cross-referral and linkage between their sites. A user may arrive at ePractice.eu, but perhaps the Common Knowledge Network would better meet their needs – there is no reason for the former not to link to the latter (and vice versa).

The same logic extends to site searches (which could usefully give results from all relevant government sites), logins, message boards and so on. The more these are integrated, the greater the 'virtual' scale of the set of sites; each would have a far larger apparent user base than they would have alone, supporting critical mass.

Conclusion

More sites are useful than are used. Attracting and sustaining an audience is usually much more difficult than building site functionality. Therefore the marketing plan should be seen as an absolute fundamental of a proposed online offer.

Moreover, it is important to recall in this context that what is being marketed in this context is a solution not a site – the objective is to have the user discover relevant knowledge, not to have him visit a particular site. The knowledge should be presented where it has the best prospect of being found, which may or may not be a new site.

⁸¹ Irish Revenue [website](#)

10. Recommendations

We can make a number of general recommendations about the use of the internet for knowledge networks. Note that these are in addition to the various sector-specific conclusions included at the end of the relevant sections above.

Those looking at internet infrastructure should:

- *Support the roll-out of at least basic level broadband in rural areas, both fixed and mobile.* The current Commission target of ubiquitous 30 Mbps broadband by 2020 is, at least for knowledge networks, overkill. Universal access to 2 Mbps would enable virtually all online knowledge network applications, and would be quicker and cheaper to achieve. (In remote regions, it will likely be better delivered wirelessly)

Those considering funding platforms for knowledge networks should:

- *Start from the user need and work backwards.* Is the need confirmed or is it a hypothesis? Is it conscious or latent? Given the nature of the need, and the mode of working of the user, is an online solution optimal?
- *Not take success for granted.* Be cautious of investing heavily in platforms too quickly, since the usage may never come to justify that investment. Consider ‘off-ramps’ – points at which a decision to exit could be made if a service is not getting traction
- *Consider using existing platforms if at all possible.* They will be faster, cheaper, and come with an existing user base. There are numerous platforms, both generic and specific, operating in these areas. Additional platforms may themselves be sub-scale, but may also draw vital traffic away from the incumbents
- *Make existing knowledge as widely available as possible.* As the Commission has already identified,⁸² open access to academic research is clearly beneficial⁸³

⁸² See for example EC website, [“Scientific data: open access to research results will boost Europe's innovation capacity”](#), 17 July 2012

⁸³ See UNESCO, Accessing [and Disseminating Scientific Information in South Eastern Europe](#), 2006 for a detailed discussion of approaches to using open access to make academic research more widely available

Those constructing online knowledge networks should:

- *Give at least as much thought to building usage as to building functionality.* It is likely to be the bigger challenge. Targeted advertising, SEO, partnerships, government mandates or cheer-leading and many other tools may be relevant. For two-sided markets (for instance, knowledge transfer linking academics and entrepreneurs), there needs to be a distinct value proposition and marketing strategy for both constituencies
- *Seek to address the largest relevant community.* Even if you are attempting to address a problem that is acute in the Atlantic region, it may be better to take a pan-European or global approach if that problem also exists elsewhere – this will give a larger pool of potential participants to support critical mass. (This is particularly true since the Atlantic region is itself linguistically fragmented)
- *Be prepared for the long haul.* Communities require sustaining and sites require refreshing. Consider how a site will be funded after its initial build
- *Take an open approach.* Publicly funded offers should ultimately be focused on the success of the user, not the success of a given site. Where practical, code should be made available to third parties, sites should have onward links to other sites addressing similar user needs and so on
- *Be realistic about what's possible online.* Much knowledge is too complex to be most appropriately delivered via the internet, and thus in many cases it will make sense to have a substantial 'real-world' programme of events to complement the web service
- *Report traffic levels.* If they are to spur innovation and create value, online knowledge networks need to be used. This does not imply a need for millions of visitors – the relevant audience may be quite small. However, if knowledge networks are to learn from each other, it will be valuable to know which sites are growing and sustaining usage. This can also support funding decisions.

11. About the Project and Project Partners

The KNetworks Project is focused on the creation of a permanent network of excellence, based on Information Technologies that enable the participating entities to collaborate, share and profit from a range of bottom-up innovations.

The KNetworks Project is fully complementary and articulated with other initiatives implemented at several levels, as well as compatible with national and community policies.

The project studies the conditions and requirements for the creation of the European Knowledge Centre (EKC) in the Atlantic Area. This initiative is an open network based in the Atlantic area with a main interest in the fields of: e-government, innovation, knowledge transfer, technology, the Internet, collective intelligence, future and the creation of knowledge.

KNETWORKS project foster the creation of a strong knowledge sharing and dissemination Network in the Atlantic Area to promote the exchange of Good Practices and implementation strategies for building and exploiting a 21st Century Knowledge and Information Society (KIS).

Partners

This project is a partnership between the following institutions:

- Management Center for the Electronic Government Network (CEGER), Portuguese Government.
- The Oxford Internet Institute at University of Oxford,
- The University of Cardiff,
- The University of Toulouse II - Le Mirail,
- Fundación Universidad da Coruña - FUAC, and
- The Universidad de Cantabria.
- This initiative is under the strategy of the "Atlantic Area Operational Program" (AAOP) and is supported by the European Territorial Cooperation "Atlantic Area Programme".

12. About the author and the Project Participants

This report was produced by Rob Kenny as a working paper for the Knetworks project with the assistance of Cristobal Cobo, Ralph Schroeder, Eric Meyer and William Dutton at the Oxford Internet Institute.

Robert Kenny is a founder of Communications Chambers, a telecoms, media and technology advisory firm specializing in strategy and policy. His recent clients include the BBC, Google, Vodafone, News Corp and the governments of Australia and Ireland.

He is the author of numerous papers (commercial and academic) on topics such as superfast broadband, net neutrality, news plurality, telecoms regulation, performance measurement in public service broadcasting and many others.

He previously headed strategy and/or M&A for Hongkong Telecom, Level 3 and Reach (all major telcos), and was a founder of IncubASIA, a Hong Kong venture capital firm investing in internet start-ups.

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Ralph Schroeder, Professor at the Oxford Internet Institute. Investigator on the KNetworks Project.

William Dutton, Professor at the Oxford Internet Institute. Scientific Committee of the KNetworks project.

Eric Meyer, Research fellow at Oxford Internet Institute. Investigator on the KNetworks Project.