

Economic Development and Job Creation from Broadband

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1 CHALLENGE

The impacts from investments in broadband infrastructure and broadband-enabled e-solutions¹ are measurable and significant. However, given the investment required for broadband deployment, it becomes increasingly important to understand how individual businesses and organizations use and can benefit from broadband – specifically the barriers and opportunities that can assist local economic development efforts at enhancing productivity, innovation, job retention and creation.

Investments in broadband infrastructure alone do not automatically produce benefits. There needs to be a concerted and focused effort to promote and support the utilization of e-solutions to increase productivity and transform businesses practices. Providing the capacity to support innovation is a particular challenge for communities and policymakers. Given limited resources and expertise, it is challenging for the average business or organization to be innovative in their use of broadband and e-solutions.

Businesses and organizations too often fail to achieve their full growth potential due to lack of knowledge and limited budgets to implement and use broadband and e-solutions. This is further compounded by an aging population of small business owners who are often less comfortable with the latest technologies. This experience is common across OECD countries where support for adoption and usage of broadband is a growing priority for public policy.

2 CREATING GREATER VALUE BY ACCELERATING APPLICATIONS

The immediate effects from an investment in broadband are twofold. The first comes from the construction of the broadband infrastructure. The affected residents, businesses and organizations then invest in the skills, know-how, tools and facilities to take advantage of the broadband network and e-business solutions so they can more effectively participate in the digital economy. These secondary economic effects take longer, but have far greater impact as they improve productivity, competitiveness and quality of service on an ongoing basis.

Broadband infrastructure is essential for the effective participation of businesses and organizations in today's economy. Research conducted by Strategic Networks Group (SNG), finds that the local economic growth and secondary investment enabled by broadband is 10 times the initial broadband investment and the contribution to Gross Domestic Product (GDP) is 15 times the initial investment. Broadband today is as vital as electrification was in the 1930's and increased participation in the digital economy results in economic and quality of life improvements. Investments in broadband infrastructure strengthen regional economies².

¹ e-Solutions are online tools and applications that increase revenues, reduce costs, or make day-to-day operations easier. They can include Websites, or online payroll tools for business or organizations.

² See <http://sngroup.centraldesktop.com/sngpublic/EconomicImpactsFromInvestmentsInBroadband>

2.1 Opportunity

Broadband access and its importance to organizations is directly related to how it is used by organizations, what organizations expect from broadband, and how they realize the benefits from its use. The goals of promoting the adoption and use of broadband are to:

- Increase the productivity and competitiveness of local businesses and organizations by:
 - promoting awareness of the benefits of broadband and e-Solutions
 - supporting the implementation of basic e-Solutions that benefit business operations and service delivery (e.g. supporting tourism operators in setting up an effective web presence that expands their revenue and profitability).
- Promote regional economic development that is built on competitive businesses and skilled human resources.
- Provide a path for local workers to develop entrepreneurial skills and to have a path to local high-wage employment opportunities
- Increase local capabilities to address the gaps in expertise and knowledge which businesses, organizations and individuals have in adopting e-solutions.

Broadband promotion initiatives need to be designed to help individual businesses and organizations become aware of opportunities enabled and take the necessary steps to more fully realize the benefits available from broadband and e-solutions. This can be done by identifying usage gaps in broadband and e-solutions and quantifying the potential new revenues or cost savings achievable by implementing appropriate e-solutions for individual businesses and organizations.

2.2 Current State of Broadband Adoption and Use

In September-October 2008 SNG conducted an international literature review, on behalf of the Government of Australia³, of a wide range of information sources covering digital economy processes, drivers and barriers. These included documents and surveys from numerous sources around the world as well as past studies conducted by the project team. The task was to select the most relevant and robust information. 87 international sources of information relating to adoption and usage of broadband were identified and an inventory of 437 digital economy benchmarking indicators across these sources was compiled.

Two key sources of benchmarking indicators were from e-Business Watch and Strategic Networks Group:

- The European e-Business Watch produces regular sector / industry reports which are among the best examples of e-business benchmarking at the international level. The sector reports include an analysis of the dynamics of and e-business issues facing the sector / industry, together with detailed international benchmarking of the barriers to, extent of use of, and benefits derived from a range of e-business applications.
- Strategic Networks Group is one of the few sources globally on the impacts of ICT and e-business usage at the individual business and organizational level. SNG collects data independently using proven survey tools and techniques with communities and regions

³ Digital Economy Benchmarking of Australia at the Sectoral Level (DCON0208) December 2008.

to quantify the usage and impacts of ICT and e-business solutions by businesses, organizations, and households. The direct economic impact data collected (new revenues, cost savings, new jobs, etc.) can be used to quantify what digital economy participation has enabled and the resulting return in economic benefits.

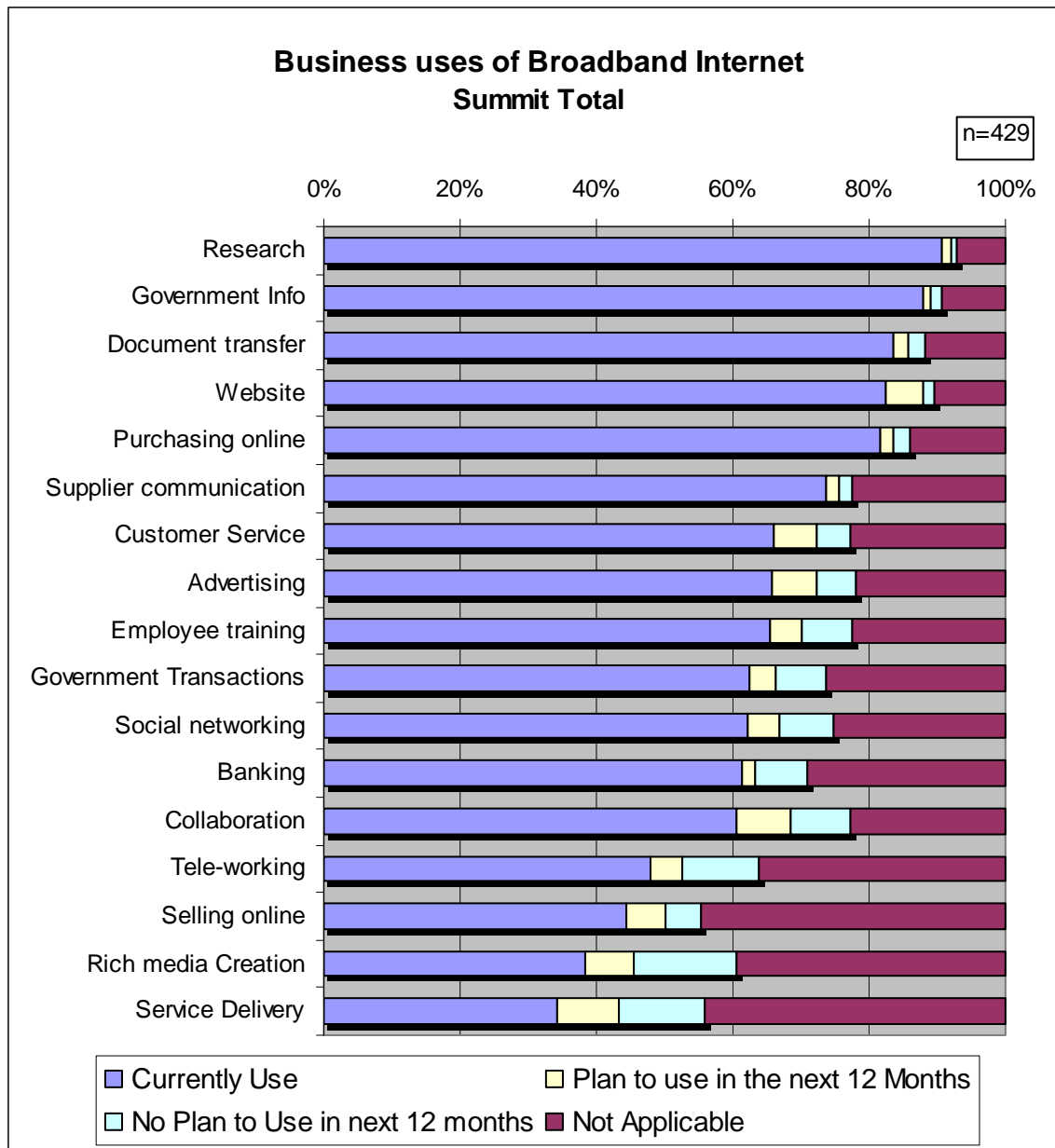
The Australian study concluded that there are significant gaps in the information on the operation of the digital economy across countries. The key gaps in information include engagement in the digital economy, particularly supplier and customer supply chains, the growth through online collaboration, tele-presence, and mobility services.

2.3 Recent Findings on Broadband Usage, Barriers and Drivers

Recent research conducted by Strategic Networks Group (www.sngroup.com) on behalf of the Knight Center of Digital Excellence (www.knightcenter.org) and OneCommunity (www.onecommunity.org), focused on e-solutions uses and benefits for organizations and businesses within Summit County, Ohio. All organizations within Summit County received direct invitations to participate in the study by providing information through an online questionnaire.

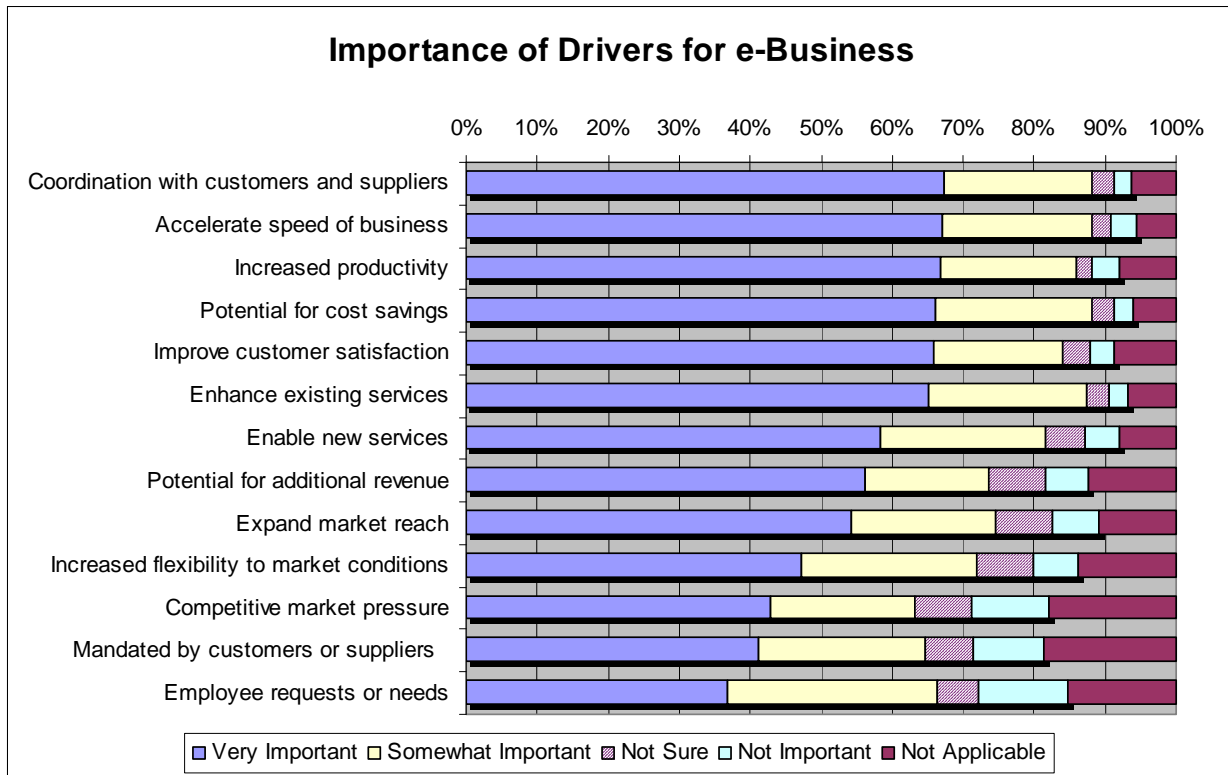
The intent of the Summit County study initiative was to assess the current and planned state of e-solutions usage by businesses and organizations in Summit County with the goal of identifying levels of usage, demand, benefits, and impacts of the use of broadband and e-solutions technologies for those organizations. The information gathered and analyzed contributes to understanding gaps and opportunities to guide local economic development strategies that enable and leverage broadband infrastructure and support capacity.

The Summit County e-Solutions Benchmarking Report provides statistics on data collected directly from businesses and organizations on their use of e-solutions, their drivers for and barriers to using e-solutions, and the benefits derived for these organizations. Below are some highlights of findings.

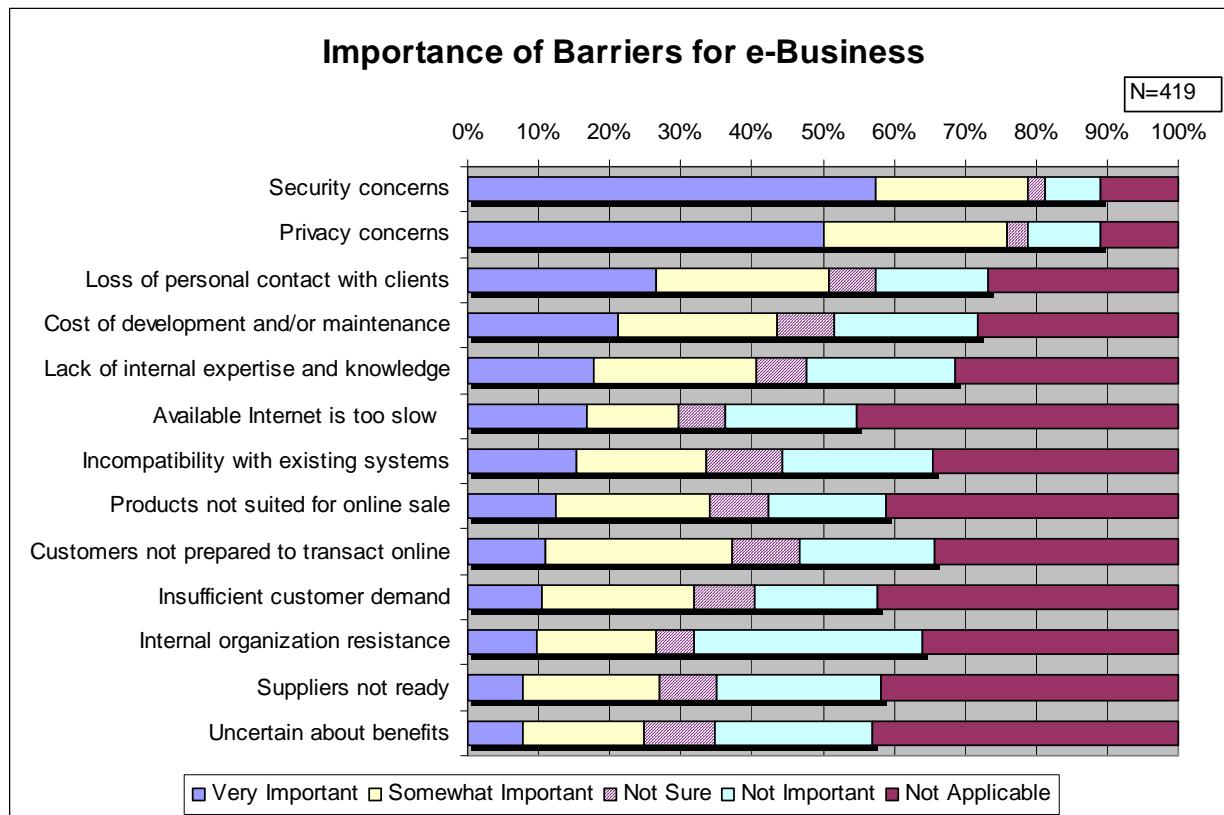


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The uses are shown in descending order of current use by all organizations in Summit County, Ohio. Generally, the uses that require less sophistication of use and implementation, or those that do not require major process changes (e.g. doing the same things faster), are more highly used. Those applications that involve more complexity in implementation or in adopting new processes are used less often. It must also be recognized that some uses are genuinely not applicable for some types of organizations.



The most prevalent drivers relate to productivity and customer related factors rather than market growth or competitive factors. However, there is no clear dominating driver for e-business solutions.



Unlike the e-solutions drivers, it is apparent that two factors dominate as issues of importance to organizations; security concerns and privacy concerns. Over half of the organizations identified these as factors that may limit their integration of broadband Internet with their business operations.

Organizations were also asked to rank the factors that they identified as very important. Security concerns ranked number one by 34% of organizations. Privacy concerns ranked number one by 17% of organizations. Both were ranked in the top 3 by 67% of those organizations.

Of the remaining barriers, the next most significant factors are loss of personal contact with customers, the cost of development and/or maintenance of e-business solutions, and the lack of internal expertise and knowledge. All of these factors, as well as privacy and security concerns, can be at least partly addressed through development of knowledge and expertise or providing support with appropriate expertise.

2.4 Recommendations to stimulate adoption and use

2.4.1 Mechanisms to Identify Broadband Usage Gaps

There is value in having a mechanism that enables individual businesses and organizations to identify their broadband usage gaps and to have access to the expertise and resources to address those gaps. By identifying those digital economy participation benefits that have the most immediate and most significant impacts, efforts can be targeted to where the critical mass of benefits is being realized. Examples of this include internal business processes that have been transformed and automated, B2B, M2M, etc. Where it becomes difficult to measure benefits and impacts in dollars, qualitative indicators can be incorporated into benchmarking. Such indicators would identify the critical elements that lead to successful business process transformation and engagement with the digital economy.

Appropriate metrics and online mechanisms are needed that take a holistic and broad approach to data collection on broadband adoption, usage and the digital economy. How such a tool will be implemented and used will depend on the stakeholders who have existing roles and responsibilities and who need to consider which gaps are of the most interest to them. Given that existing resources and capabilities are already in place, duplication should be avoided, while leveraging opportunities for collaboration. For example, statistical agencies and their use of time series econometrics can complement case study approaches conducted by industry associations that seek to act as intermediaries between business and governments. Such collaboration across governments and agencies will be needed to build capabilities that enable individual businesses and organizations to identify their digital economy usage gaps and to have access to the expertise and resources to address those gaps.

2.4.2 IT Literacy Initiatives in the Context of Local Economic Development

The focus of broadband adoption and usage should be on how a business or organization can become more productive and competitive by implementing e-solutions. This is critical because it is through this process of implementing those e-solutions that the needed skill sets will be identified – these become job descriptions for jobs that can be sustainable if the business or organization is generating new revenues, reducing costs, or making day to day operations easier. It's about teaching digital literacy based on identified needs.

Promoting broadband adoption and usage as well as digital literacy is important, but it cannot be in isolation otherwise the question becomes: "What are individuals going to do with that information and those new skill sets?" We want to avoid situations where people take training through colleges, training institutions, etc., and then finish the training to wonder where the jobs are.

Therefore it is fundamentally important to identify gaps in the usage of broadband and e-solutions at the individual business or organization level in order to define the training requirements for initiatives that promote broadband adoption and digital literacy.

2.4.3 Relationship between Employers and IT Job Seekers

Employers need to consider several factors if they are to take full advantage broadband and e-solutions. They must first recognize that potential staff will, for the most part, require additional training and education. Skills development and training will require flexibility on the part of the employer and may involve providing time off for employees to attend classes and conferences, self-study, learn online, and to network.

Job seekers have different learning needs and job expectations and employers need to be mindful of these differences when hiring. Training and IT skills development should be flexible to various learning formats such as courses, workshops, online learning, etc. as individuals have different availability and different learning styles.

With increased competition in the private sector and rising citizen expectations in the delivery of public services, current work environments require broad skill sets and knowledgeable staff. This is especially true with small- to medium-sized enterprises where individuals often hold a number of different responsibilities. Small businesses and organizations in particular require a well-rounded workforce to be flexible to changing business operation requirements. It is therefore essential that employers are aware of the need for staff training and IT skills development.

It should be noted that supply of IT skills is relative to the demand for such skills. Findings from research conducted by SNG show that the majority of businesses and organizations are not fully leveraging broadband and e-solutions. This implies that there is a large un-realized demand for IT services in a community or region. Furthermore, customers and citizens are increasingly demanding improved services through IT, putting further demand for IT skills.

The key human resource implication is that there needs to be an on-going focus on training and IT skills development in any community or region that wants to participate in today's economy. In an ever-changing economic climate, employers in a community or region need a ready pool of individuals with the necessary IT skills. Employers will also need to hire these job seekers before they opt to move elsewhere and take their knowledge and skills (and the region's competitive advantage) with them