DATAMONITOR

Enhancing Value for the Citizen: ICT Adoption in Regional & Local Government

Using technology to enhance government operations and constituent services

A Datamonitor whitepaper prepared for

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ABOUT DATAMONITOR

Datamonitor is a premium business information company specializing in industry analysis.

We help our clients, 5000 of the world's leading companies, to address complex strategic issues.

Through our proprietary databases and wealth of expertise, we provide clients with unbiased expert analysis and in-depth forecasts for six industry sectors: Automotive, Consumer Markets, Energy, Financial Services, Healthcare, Technology.

Datamonitor maintains its headquarters in London and has regional offices in New York, Frankfurt, Sydney and Hong Kong.

EXECUTIVE SUMMARY

- Today's state, regional and local government agencies face a pressing need to provide excellent citizen services in an effective and transparent manner, all the while working under constant resource constraints. In order to meet these challenges, public agencies are turning to information communications technologies (ICT) to enhance the services that they provide for residents, businesses and visitors, and improve internal efficiencies by lowering costs and increasing productivity. With a particular focus on regional and local government, the key take-out points of this whitepaper are:

- Faced with the need to do more with less, governments are increasingly taking a 'constituent-centric' approach to service delivery, and trying to distinguish themselves as attractive places to live and do business;

- ICT is enabling government agencies to implement multi-channel contact centers for constituent inquiries, support the need for security and privacy for a mobile workforce, enable information sharing and collaboration, promote economic development and bridge the digital divide, while reducing energy costs through 'green' solutions;

- Alcatel-Lucent provides mission critical communications infrastructure and network integrator expertise that provides governments with depth of understanding and a comprehensive portfolio of products;

- Governments should invest in network infrastructure to provide better services to constituents and realize operational efficiencies. When doing so, key considerations should focus on the need for choosing experienced vendors that have a solid track record working with public agencies.

REGIONAL & LOCAL GOVERNMENT (INDUSTRY VIEW)

Key user & market trends

Agencies are taking a 'constituent-centric' approach to service delivery

In the private sector, corporations have long put their customers at the center of operations, with customer demands driving product development and business processes. Government officials and elected leaders have increasingly come to realize that public agencies must do the same. Faced with tight budgets and a retiring workforce, today's government agencies are operating in an environment defined by the need to 'do more with less'. Public authorities are expected to provide excellent service to their constituents in an effective and transparent manner, all the while working under constant resource constraints. In a world that operates 24 hours a day, 7 days a week, the need for modernity in the delivery of public services has never been greater, and governments must increasingly be able to provide real-time assessment of the effectiveness of their services. As a result, governments are redefining the way they operate, by adopting 'constituent-centric' approaches which put transparency, responsiveness and the need for 24/7 availability at the heart of agency operations. This trend has manifested itself in a number of ways, including eGovernment and customer service-focused initiatives in a variety of countries, including the Implementing Electronic Government Initiative (IEG) in the UK and the Citizen Service Levels Interagency Committee (CSLIC) in the US, which legislate enhanced service delivery methods and minimum customer service levels that public agencies must achieve.

Public safety remains a priority for regional & local governments

Sharing the same concerns as governments at the national level, a particular focus of local government is ensuring public safety (Figure 2). In recent years, terrorist attacks and natural disasters have brought public safety response to the forefront in North America, Europe and Asia, and on a daily basis, governments are faced with the challenge of providing an effective and timely response in emergency situations. This requires reliable communications infrastructure between public safety agencies and affected constituents, as well as between critical first responders such as police and paramedics, who rely on state of the art mobile communications with broadband

capabilities. In addition, public fears around crime and terrorism are leading public safety agencies to implement video surveillance of public spaces and critical infrastructure. As such, high-speed connectivity and interoperable communication networks are imperative to government agencies for providing employees with the tools they need to perform their jobs effectively.

Figure 2: Local Government ICT Spending by Function, US & UK, 2008

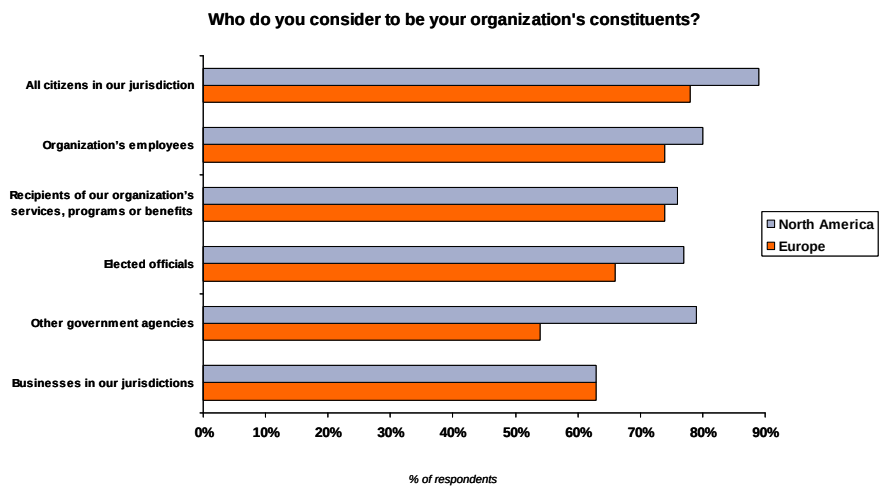
Government Function	US $	% of Spending
Public Safety & Justice	12,055	30%
Health & Human Services	7,766	19%
General Government	6,691	17%
Transportation	4,826	12%
Economic Development	3,312	8%
Agriculture & Natural Resources	2,704	7%
Education	2,015	5%
Labor & Labor Relations	1,094	3%

Source: Datamonitor DATAMONITOR

Agency priorities and constituent needs vary across regions

As decentralized levels of government, regional and local authorities have a very diverse set of needs. Each agency in each jurisdiction at each level of government is subject to differing legislation, regulations and procedures. As a result, a particular solution or partnership that works well in one jurisdiction might not work in another. At the same time, there are regional variances from an agency outlook perspective. As seen in Figure 3, North American agencies generally have a broader view of whom they consider their constituents. While both European and North American agencies see citizens as their main constituent, North American agencies place particularly more importance on 'other agencies' as constituents, demonstrative of a more integrated approach to government. Accordingly, when implementing technology solutions to meet their unique requirements, governments are looking to vendors who have industry expertise and a demonstrated understanding of the diverse needs that exist among agencies, geographies and levels of government.

Figure 3: North American agencies have a wider view of 'constituents'



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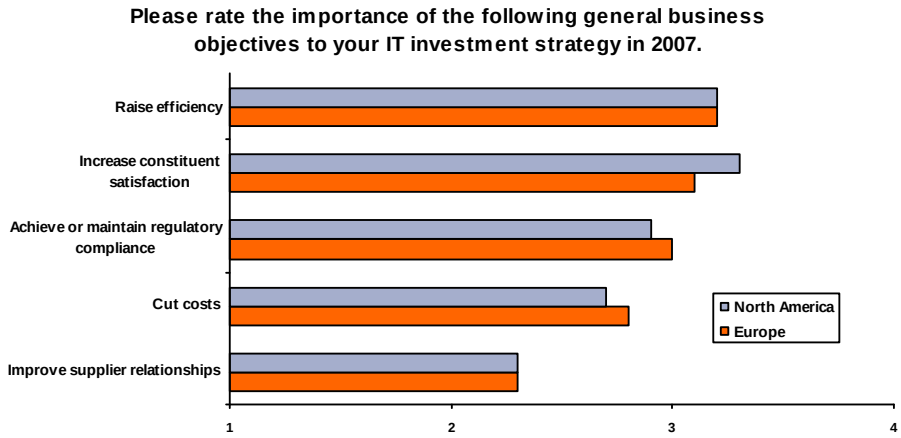
Source: Datamonitor, Government Business Trends Survey, 2008 DATAMONITOR

Key challenges

The looming human capital crisis and tight budgets are driving the need for efficiency

One of the most pressing challenges facing government agencies today is the global shift in demographics, as the baby boom generation is set to retire at an alarming rate in the coming decade. In Europe, a rapidly aging population is nearing retirement and there is widespread concern about the lack of new workers available to replace outgoing senior managers. The trend is similar in the US, where nearly 30% of the state government workforce in the US will retire by 2015. In addition to a declining workforce, regional and local governments face a resource challenge when it comes to their budgets. Public agency finances are characteristically tight, and there is constant pressure to optimize public spending for constituents. Due to declining revenues from property taxes, governments face significantly reduced tax bases, leading them to look for solutions that will lower costs and enhance efficiencies.

Figure 4: Increasing efficiency and stakeholder satisfaction are common concerns among regional and local government agencies



Source: Datamonitor, Government Business Trends Survey, 2008 DATAMONITOR

Citizens expect a high level of service from government

Despite a shrinking workforce and tight budgets, the expectations regarding quality and quantity of government services have increased. In a world in which consumers can access their bank accounts, read newspapers and shop online 24 hours a day, 7 days a week, there has been a drastic rise in the level of customer service that constituents expect from public agencies. In their day-to-day lives, constituents interact with their local and regional governments more than any other level; as such, it is imperative that these agencies provide top quality service on a consistent basis. In a survey of government agencies in Europe and North America, Datamonitor found that increasing efficiency and customer satisfaction were the two leading concerns of respondents (Figure 4). This points to the fact that governments realize the need to meet the resource challenge while maintaining high-quality services for its constituents.

Jurisdictions try to distinguish themselves as top places to live and do business

Forward-thinking jurisdictions strive to promote economic and social development by attracting and retaining businesses and encouraging new residents to relocate to their jurisdiction. As modern communication and transportation systems provide people with more freedom to choose where to live than in the past, governments must actively attract and retain citizens and businesses in order to maintain their tax base. By tailoring services to address constituent needs in a personalized and timely manner, governments use constituent-centric initiatives such as eGovernment to differentiate themselves from neighbors, attract media attention and even secure future grant or budget funding. A particular example is the implementation of public access wireless networks that have been implemented by governments around the globe, as they seek to facilitate web access for citizens and local businesses.

Key government needs

Governments are implementing multi-channel contact centers to handle constituent inquiries

In response to constituent demand for more convenient, 24/7 access to public services, a number of governments across Europe and North America, in particular at the local level, have implemented government contact centers to field non-emergency constituent inquiries. Largely popularized through their easy to remember phone numbers, such as '311' in North America, these contact centers serve as a central point of contact for constituents requiring non-emergency services, including reporting potholes or paying a traffic violation. The most innovative governments have enabled these contact centers to support multi-channel communications, allowing constituents to make requests by whatever form of communication is most convenient, including phone, email, and even text messages. These contact centers allow agencies to achieve significant cost-savings, reduce the amount of time that constituents spend trying to locate the appropriate contact for their request, and improve the resolution rate of constituent issues. In addition, they have significantly freed up government resources by reducing the number of non-emergency calls to emergency contact centers such as 112 and 911.

Security and privacy for a mobile workforce are paramount

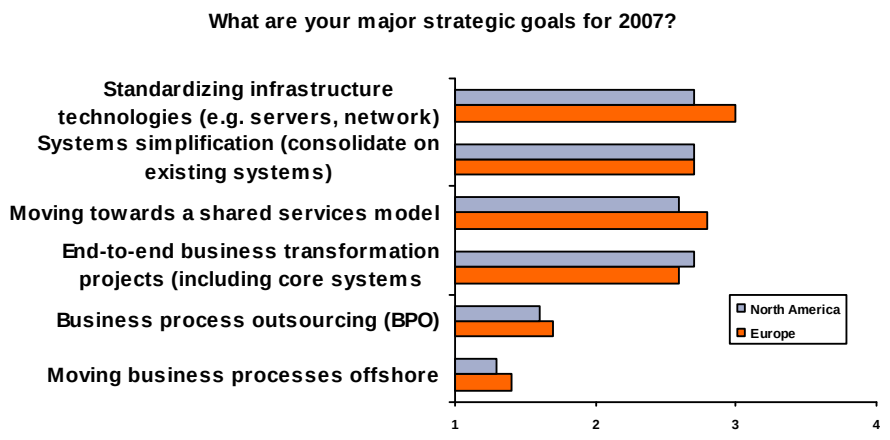
In order to perform their mandates, public agencies regularly collect mass amounts of personal information about their constituents, much of which is highly sensitive. As a result, governments look to ICT to help store and maintain this data, as well as protect it from those with malicious intent. Furthermore, today's operating environment is increasingly defined by its mobile workforce, driving agencies to implement secure connectivity and integration of both new and legacy applications. In particular, the work of mobile field staff is enhanced by the ability to collect and transmit data securely, and requires solutions that protect sensitive data in case of loss or theft of a laptop or other mobile device.

Information sharing and collaboration are key to efficiency

One of the key challenges facing government operations is that each individual agency operates largely in a silo; they have their own business processes, collect their own unique information, and are often reluctant to share information or

resources. Yet recent years have seen a trend towards increased interagency cooperation and information sharing, as governments look to enhance productivity and improve efficiencies. Agencies have essentially moved from a 'need-to-know' to a 'need-to-share' basis, in an effort to leverage information to improve both their business processes and analytical capabilities. In addition, governments need to provide interoperable communications between agencies, in particular with regard to first responders in emergency situations or healthcare workers in rural areas. As such, when operating a large-scale broadband network, governments must be confident that data exchange can take place seamlessly across a converged network, in a protected and highly secure manner. Accordingly, agencies' top strategic goals are focused on standardizing infrastructure and consolidating ICT systems (Figure 5).

Figure 5: Governments' top strategic priority in 2007 was standardizing ICT infrastructure



Source: Datamonitor, Government Business Trends Survey

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THE ROLE OF ICT IN GOVERNMENT

Key sector issues & ICT maturity

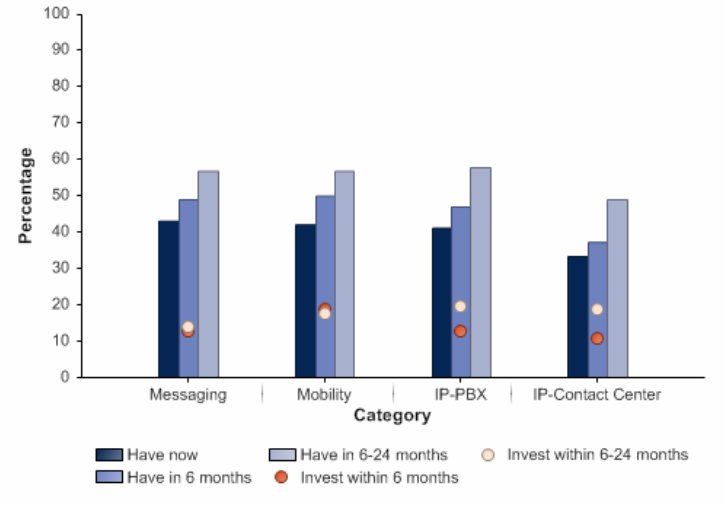
Faced with limited resources, agencies look to ICT to create operational efficiencies and enhance service delivery

In order to meet today's operating challenges, regional and local governments are turning to ICT to enhance the services for residents, businesses and visitors, and improve internal efficiencies by lowering costs and increasing productivity. Public authorities are implementing scalable communication infrastructures to promote economic development, attract new businesses and residents, and above all, provide excellent service to constituents. From a business perspective, implementing scalable communication infrastructures such as wide area networks (WANs) accommodates the various types of services government agencies require on a day-to-day basis, including provision of broadband internet access for online services and internal collaboration, handling administrative data, closed-circuit video surveillance and telephony. In addition, implementing broadband infrastructure also allows public authorities to provide convenient, one-stop portals for public services, thereby enhancing the quality of service delivery for constituents while reducing overall costs. According the Organization for Economic Cooperation and Development (OECD), over 400 local authorities across Europe and North America have implemented or are currently implementing converged broadband networks.

Network connectivity is key to information sharing and efficiency

Network connectivity helps facilitate knowledge management and significantly improves productivity and accountability within agencies, through online collaboration tools, video monitoring capabilities and VoIP services for government agencies. In particular, implementing a single, converged network as opposed to multiple overlay networks has significant advantages, in particular by minimizing complexity of building and operating the network, as well as reducing costs of ownership. From an operational perspective, Data VPNs, call centers and web service gateways provide secured platforms by which government employees can interact across agencies, collaborate with each other, and increase the efficiency of their communications with the constituents they serve (Figure 6).

Figure 6: Voice / data convergence technologies that government agencies currently have or use and are prioritizing for investment in the future



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Source: Datamonitor, Technology Trends Survey 2007

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Governments use ICT to promote economic development and bridge the digital divide

In terms of social development and equity issues, broadband connectivity also has significant potential to bridge the 'digital divide' that exists between constituents with access and those without. While implementing a broadband network in-house helps governments create efficiencies and enhance service delivery, such an initiative can also be the first step in building the backbone for a future network which provides 'broadband for all'. In particular, while urban areas are usually well-served, rural areas face numerous obstacles to connectivity. Indeed, nearly 30% of rural areas in Europe do not have broadband access. E-inclusion initiatives, which provide high-speed Fiber to the Premises (FTTP) connectivity, are aimed in particular at underserved populations, and are becoming part of the infrastructure that regional and local governments are expected to provide, in much the same way as basic utilities such as electricity. In an effort to promote development around ICT, the European Union's Riga Ministerial Declaration of 2007 has set targets for increasing digital literacy, broadband connectivity and the accessibility of public websites by 2010. As such, in areas where there is no telecom company to provide broadband services, governments are stepping in to implementing their own broadband

networks, in order to spur development and provide residents with access to the valuable global web of information. According to the European Fiber to the Home (FTTH) Council, 67% of FTTH projects are being carried out by local authorities or utilities, rather than the incumbent telecom company. In other regions, local authorities and regions are fostering competition by launching open access networks and projects often financed by public-private partnerships (PPPs).

Governments are increasingly implementing 'green' ICT policies

In recent years, there has been widespread attention paid to 'green' issues and the impact that businesses have on the surrounding natural environment. Accordingly, agencies seek to lessen their impact on the environment by adopting technologies with low rates of energy consumption. In many cases, governments have issued directives that mandate 'green' considerations as criteria when procuring ICT equipment and systems, while innovative technology vendors have focused on developing products that minimize energy consumption and environmental impact. While a key driver of this technology is that it reduces environmental impact, from a business perspective, investing in green technologies also has potential for significant cost-savings due to reduced energy costs and less strain on internal resources. According to The Economist, the share of powering and cooling servers is expected to increase from its current level of 50 cents per dollar to 70 cents per dollar over the next 3 years. With a backdrop of surging costs, government data center managers have identified the need to optimize their power consumption without hindering performance.

The role of Alcatel-Lucent

Alcatel-Lucent provides communication solutions and transformation management for a world that is 'always on'

In a world increasingly defined by it's 24/7 nature, governments are looking for vendors that can provide around-the-clock, reliable network solutions to enhance their critical communication infrastructure without regard for geographical barriers or long distances. In order to help meet this need, Alcatel-Lucent provides converged network solutions that support mission-critical communications, business processes, operations and constituent services (Figure 7).

Figure 7: Alcatel-Lucent provides a wide range of management and security solutions for local and regional governments

Source: Alcatel-Lucent

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As part of its service integration and transformation capabilities, Alcatel-Lucent provides an end-to-end offering, from analysis and planning to program management, execution and deployment of eGovernment applications such as ePassport, eHealth or eEducation. In these transformation programmes, Alcatel-Lucent acts as the interlocutor for the customer, providing the communication

platform, security systems, collaborative solutions and integrating eApplications provided by its partners.

In response to agencies increasingly taking a 'constituent-centric' approach to service delivery, Alcatel-Lucent also offers a set of Customer Interaction Management (CIM) solutions to handle inquiries from constituents. Alcatel-Lucent's and Genesys contact center solutions are among the industry leaders, providing a range of contact center solutions that support multi-channel interactions from constituents looking for government information or making service requests. Their end-to-end network service management solutions help support these contact centers, providing the network underlying the operation. These centers enhance a variety of relationships, including Government to Government (G2G), Government to Business (G2B) and above all, Government to Citizen (G2C), through programs such as eGovernment initiatives, social service delivery and one-stop service shops which can operate for a world that is 'always on'.

Meeting public sector needs through a focus on innovation

Alcatel-Lucent's portfolio of products and integrated solutions helps reduce the risk inherent with multi-vendor systems. It offers a number of services which meet regional and local government needs, from residential services (i.e., high-speed internet, VoIP, Triple/Quadruple Play) to business services (i.e., data VPN, IP telephony, building surveillance, payment) and public services (i.e., public safety, information services, healthcare, and municipal Wi-Fi, voting, payment). Alcatel-Lucent's network, service and control plane management can reduce cost of ownership through simplification of the network, increased efficiency of service provisioning and automation of the network operations center. Notably, its equipment consumes one-third of the power used by its competitor's systems, allowing for significant cost savings for agency budgets.

In the government arena, information addressed to the right people at the right time is critical. Accordingly, Alcatel-Lucent's 'user profiles' feature provides pre-packaged, tailored profiles for various workers in a government agency, from executives and mobile professionals to on-site roamers and office workers. In particular, its secured web services gateway offers governments a solution that brings together disparate systems and allows for secured interactions and transactions. This is particularly useful for multi-agency interoperability or groups transmitting sensitive data over a government network, such as police officers. Alcatel-Lucent also provides a solution that, in the case that a laptop is lost or stolen in the field, data can be remotely deleted via a central network server, thereby protecting against access by

unauthorized users or malicious behavior. Related to public safety, Alcatel-Lucent's IP Video Solution provides agencies with video surveillance capabilities that provide statistical analysis and suspicious behavior detection, such as unauthorized entries in security clearance zones.

Depth understanding matched against a comprehensive portfolio

When it comes to network integration, Alcatel-Lucent has demonstrated its global reach while also maintaining a local presence; the company currently has over 2,300 projects in more than 130 countries worldwide. In the public sector, it offers end-to-end, pre-integrated, multi-vendor solutions for all sizes of projects, from private networks for a local hospital to large implementations for an entire region or country. Where a government requires secure and private networks or eGovernment applications, Alcatel-Lucent provides IP transformation and connectivity and application integration. In response to the need for economic development and bridging the digital divide, Alcatel-Lucent provides cities and regions with fiber or wireless broadband networks. In addition, from an emergency communications perspective, Alcatel-Lucent provides the ability to support multi-agency interoperability and mobile voice and advanced data capability for first responders. One of the company's strengths is its ability to customize solutions to meet local requirements, due to its global network of partners in civil work, fiber, application platforms and network equipment.

Alcatel-Lucent's government network capabilities are focused on three key transformative areas: network transformation, focused on IPT centralization, convergence solutions, security and management; services transformation, which provides for user-based profiles and supports telephony services as well as mobility and collaboration; and business transformation, which provides contact center support and industry-specific and mission-critical applications. All of Alcatel-Lucent's next-generation IP-based unified communications solutions provide for interoperability capabilities with other vendors' solutions, which is particularly important for public safety and emergency response. In the services realm, Alcatel-Lucent also offers professional services to help public agencies implement and integrate new solutions into their existing ICT infrastructure.

ICT IN ACTION – CASE STUDIES

Province of Trento, Italy

Alcatel-Lucent is involved in two projects in the Province of Trento, in the Italian Alps, enabling broadband connectivity for the regional government and the population in remote areas to whom it would not otherwise be available. The first project entails the installation of some 700km of fiber optic backbone, connecting around 300 public buildings, including 11 hospitals. This project began in 2001 and is scheduled to be completed in 2010, at which point the backbone network, owned and operated by the provincial government, will replace capacity leased on optic fiber belonging to the national incumbent carrier, Telecom Italia. The second project, the idea for which dates from 2006, is for the installation of some 1,600 wireless access points operating in both the 2.4GHz and 5.4GHz frequency bands, in areas of the province where Telecom Italia will not deploy DSL *broadband* infrastructure.

Of the 223 municipalities in the province, 150 currently have no DSL access available. Many of these are municipalities up in the mountains, where wireless connectivity, delivering up to 2Mbps of bandwidth, and a guaranteed minimum of 1Gbps, is replacing ISDN lines. There are also a smaller number of cases where a Wireless connection is replaced by a DSL connection that is already saturated. This network, like the fiber backbone, is operated for the benefit of the public sector (i.e. government buildings, schools and medical centers), by a company owned by the provincial authority, Trentino Network. However, that agency also sells spare capacity on the network to three commercial telecom operators who then sell to retail customers in both the residential and business markets, thereby generating revenue to speed the return on the province's investment.

With regard to the public administration, internal communication applications such as email and interoffice collaboration benefit immediately by the move to broadband, but there are also eGovernment initiatives underway. One involves an eProcurement infrastructure, whereby the provincial authorities will publish the documents for all Requests for Proposals (RFPs) on the Web and enable prospective suppliers to access the information and submit bids. Other applications for which broadband connectivity is being used include enabling remote diagnosis in hospitals, where a doctor can examine a patient over an internet link. In schools, the network is enabling the province to implement a 'digital blackboard' project, whereby students in one part of Trento can receive tuition from a teacher in another, with the teacher able to draw

diagrams or make notes to share with the pupils as if he or she were in the same classroom.

For the private citizen, there are also plans to enable car tax to be paid on the internet, as well as to publish the provincial land registry's database, which should help people seeking to apply for planning permission. The Trento government also plans to invest in the development of home automation schemes for citizens who are housebound due to physical handicaps. In such cases, a broadband connection in the home has the potential to serve as an invaluable mode of communication, whether for outbound messages transmitting their medical or dietary needs or other aspects of their care regime, or for inbound monitoring. In such a scenario, the ability to carry out 24/7 monitoring of a heart rate, for instance, can supplement periodic visits by a district nurse during the course of the day.

Finspång, Sweden

Alcatel-Lucent is also engaged in providing broadband network service to the Municipality of Finspång, Sweden, a sparsely populated rural region of 21,000 residents spread across nearly 1 000 km^2 in the Swedish countryside. In 2000, the Swedish government deregulated the market in order to achieve the goal of providing 'broadband for all'. Yet because of Finspång's remote location and scattered population, large Internet Service Providers (ISPs) were not willing to invest in building a network there. As such, the local authorities took the initiative, in order to meet Finspång's IT infrastructure needs, encourage future growth and satisfy the local business market. Responsibility for overseeing the building of the network fell to Finet AB, a local ISP owned by the municipal government. As its partner, Finet chose Alcatel-Lucent, the only vendor who could provide a complete end-to-end solution that met the project's technical requirements.

Building of the fiber and radio core network, known as CityNet, began in 2002, and was built on MPLS and xDSL by Alcatel-Lucent. Having been completed in 2007, the network is one of the most modern and reliable in all of Sweden. Today, the network has 18 stations with 11 masts, and has achieved a coverage rate of 98% of the population. It has never failed and has not experienced any issues concerning reduced performance due to traffic overload. It offers 'triple play' services- Internet, IP telephony and IP television services- to the municipal government, as well as 2,400 households and 150 companies in the municipality. The provision of a secure, reliable network has resulted in a number of significant benefits for a variety of stakeholders in Finspång, from the public authorities to local business to private homes.

For the public authorities, the shift to an IP infrastructure has saved the municipality an estimated US$100,000 per year in telecom costs. In addition to the savings on a day-to-day basis, a notable benefit was realized when the municipality decided to rebuild their offices last year, which involved transferring 400 staff to new offices over a period of 18 months. At the time, the municipality had a copper infrastructure rented from Telia Telecom, and a fiber infrastructure owned by Finet; with the help of Alcatel-Lucent, Finet was able to change its analog PBX to an IP based PBX and migrate all its analog phones to Alcatel-Lucent IP phones, completing the process one month prior to the move.

The government has also realized a further US$50,000 cost-savings due to reduced labor and paper costs, and has seen significant improvements in day-to-day business processes. The establishment of a secure and reliable network has enabled the municipality to set up its own intranet, enhancing information sharing and collaboration between employees and across agencies. Functions that were formerly paper-based have been automated and put online; for example, government employees are now able to enter their timesheets online and invoices are now scanned and handled digitally, which avoids problems with misplaced invoices and reduces the occurrence of late payments.

A significant benefit was also realized in the municipality's schools and homes for the elderly, which have all been provided with broadband connectivity. The network enhances opportunities for students and seniors to exchange information over email and internet, and enables online learning for students and computer skills development for seniors.

In addition, the network has brought affordable broadband access into private homes and businesses that were formerly without a broadband connection. While in 2002, there were only 400 homes with connectivity, today there are 2,400. With such a steady rise in connectivity among residents, the municipality is leveraging the network to provide eGovernment initiatives that provide constituents with access to government information and online services such as permit applications. From an economic development standpoint, there have also been benefits for local businesses. In one instance, a local manufacturing company has leveraged the network to perform customer service and repair functions over a webcam, significantly reducing both its telecom and travel costs.

Going forward, Finet AB plans to shift from the lone service provider to become the operator of the network, allowing for broad competition and increased choice for residents. With the network being opened up, there will be eight internet and three television service providers by 2009.

LESSONS LEARNED

While the two case studies above are different in terms of both their context and culture, in Datamonitor's opinion, there are a number of clear lessons learned from the experiences from both Trento and Finspång.

Public-private partnerships are an effective strategy for network implementation

When implementing their network solution, both governments leveraged the expertise of a local ISP and Alcatel-Lucent to build an effective solution. Establishing a successful network relies on the combined expertise of both public and private sector organizations. In both instances, the public sector provided the strategic initiative and policy expertise to realize the benefits of providing broadband for its constituents; with ISPs unwilling to provide service to remote and potentially unprofitable regions, the government created an enabling environment in order to make the venture attractive from a business perspective. At the same time, Alcatel-Lucent brought its private sector expertise to the project, in the form of robust technology solutions, a reliable professional services team and significant thought leadership in the industry. The combination of these key players from both the private and public sector proved a very effective strategy to realize successful results.

A variety of stakeholders stand to benefit from ICT implementations

As was seen in both cases, providing network connectivity was a benefit not only to the local authorities, but to the wider community as well. Internally, the governments were able to improve operational efficiencies and reduce costs due to enhanced communication and collaboration. Yet the benefit of the network went well beyond the walls of public offices; a secure, reliable network enabled both governments to provide a number of eGovernment, eLearning and eHealth initiatives that improved the quality of life for their constituents. Furthermore, the network allowed private homes and businesses to access the triple play services offering of broadband internet, IP telephony and IP television at affordable rates, a privilege not available prior to the network's implementation. Such enhanced connectivity proved a key factor in making both jurisdictions attractive places to live and do business, which has in turn led to an increased tax base and spurred regional economic development.

Successful network implementations have a plan and a clear vision of their intended use

While there a myriad of benefits and stakeholders that stand to gain from a broadband network implementation, a successful project must have a clear, well-articulated vision for its intended use. In both Trento and Finspång, the governments, in partnership with Alcatel-Lucent and local vendors, came up with a business plan to build the network in a specified period of time, with clearly articulated services that would be realized by the variety of stakeholders who stood to benefit from the network. In particular, both regions incorporated plans for the government-owned company to open up the network to competition, thereby enhancing the degree of choices available to residents. Such benefits- both quantitative and qualitative- have been measured and documented, allowing both the government and Alcatel-Lucent to point to milestones that have been met and improvements the network has brought to both jurisdictions. Long-term planning- such as the well-thought out strategies employed by Trento and Finspång- is a key factor in project success. By clearly articulating the benefits that the network will bring to a region and outlining the responsibilities of all the stakeholders involved, governments and vendors will significantly increase the likelihood of realizing a successful, cost-effective implementation.

SUMMARY RECOMMENDATIONS

For players in the government sector looking to make technological developments and enhancements, Datamonitor has the following recommendations:

Investment in IP transformation results in increased efficiencies and ROI

As has been illustrated in this white paper, ICT brings a myriad of benefits to public sector agencies, from improved government effectiveness to digital inclusion to economic development. In particular, IP transformation leads to advanced applications and collaboration possibilities, adds operational efficiencies ad shows strong ROI. Governments that have invested in enhancing their ICT and network solutions have already begun to realize significant cost-savings, enhanced service delivery and ultimately increased constituent satisfaction. Accordingly, regional and local public agencies should seek to examine what processes within their organization can benefit from a modern, networked environment, and plan for investment and implementation in the future.

Choosing the right business model can ensure project success

When implementing a public sector ICT project, governments must understand that a key to success is determining what business model provides maximum value. With government agencies frequently facing tight budgets and a shrinking workforce, they are under constant pressure to keep costs low and deliver services in the most efficient manner possible. Accordingly, the involvement of private sector entities can provide significant benefits, often through the delivery of a service at a lower cost and with greater efficiency than could have been accomplished solely by the public agency. At the same time, innovative governments can play in a role by creating enabling environments that encourage private sector involvement. For example, by serving as an anchor tenant in a municipal wireless deployment, a government can provide a network provider with a guaranteed level of use, while achieving a cost savings and internal efficiencies for public agencies.

Governments must choose an experienced ICT provider

When implementing ICT projects, governments should consider experienced vendors offering robust solutions with a high degree of scalability and integration capabilities. In particular, project implementation in government is often much more complex than in the private sector; public sector technology implementations must consider a wider range of stakeholders, face increased regulatory considerations and are subject to strict bureaucratic business processes. As such, governments should look for experienced vendors who have deep expertise with public sector implementations, and who are able to plan for and navigate the unique business needs that are prevalent in regional and local government agencies.

APPENDIX

Abbreviations

CIM	Customer interaction management
CSLIC	Citizen Service Levels Interagency Committee
DSL	Digital subscriber line
EU	European Union
FTTH	Fiber to the Home
FTTP	Fiber to the Premises
IEG	Implementing Electronic Government (UK)
ICT	Information communications technology
IP	Internet protocol
ISDN	Integrated services digital network
ISP	Internet service provider
MPLS	Multiprotocol label switching
OECD	Organization for Economic Cooperation and Development
PBX	Private branch exchange
PPP	Public-private partnership
RFP	Request for proposal
ROI	Return on investment
VoIP	Voice Over Internet Protocol
VPN	Virtual Private Network
WAN	Wide Area Network

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