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The Top Seven Intelligent Communities of 2005

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Selected by the Intelligent Community Forum
www.intelligentcommunity.org

About the Top Seven

The Intelligent Community Forum's annual list of the world's Top Seven Intelligent Communities sounds like a competitive ranking. But that is not its intent. ICF has developed a list of five Intelligent Community Indicators that provide the first global framework for understanding how communities and regions can gain a competitive edge today. The Indicators demonstrate that being an Intelligent Community takes more than "being wired." It takes a combination of —

- Significant deployment **of broadband communications** to businesses, government facilities and residences, with government providing a catalyst through regulation, incentives and even network construction when necessary.

- Effective education, training and workforce development that builds a labor force able to perform "**knowledge work**."

- Government and private-sector programs that promote **digital democracy** by bridging the Digital Divide to ensure that all sectors of society benefit from the broadband revolution and by expanding citizen participation in government decision-making.

- **Innovation** in the public and private sectors, ranging from e-government initiatives and efforts to create economic "clusters" to the formation of risk capital to fund the development of new businesses, which are the engine of economic growth.

- Effective economic development **marketing** that leverages the community's broadband, labor and other assets to attract new employers.

The Top Seven have been chosen, not because they excel in all of these areas, but because each demonstrates excellence in at least one. ICF salutes them as pioneers and role models for the development of vibrant Digital Age communities in the 21st Century.

Some of this year's Top Seven also appeared on last year's list. Others from last year have been replaced by new communities. Just as appearing one year does not mean that a community surpasses all others, so being replaced on the list does not signify failure. ICF purposely introduces new examples each year in order to continually expand the scope of the Top Seven list, and the selection process must inevitably exclude some worthy and exciting examples.

The 2005 Top Seven

Issy-les-Moulineaux, France

In 1997, the government of Issy-les-Moulineaux, a suburb of Paris, made a revolutionary decision: to outsource its entire information technology (IT) infrastructure to Euriware, a 10-year-old Paris company that was one of France's first outsourcing firms. If this had been simply an e-government project, however, it would not have attracted attention throughout France and around the world. What made it notable was its role in transforming Issy-le-Moulineaux into what Mayor Andre Santini, a former French Minister of Communications, calls a "digital city." In the mid-1990s, Mr. Santini had already launched a campaign to lure technology companies into the area and make high-tech the backbone of the economy. The decision to outsource the city's IT was consciously made in order to speed up the pace of technology innovation. It proved to be a smart move. The outsourcing contract specified the development of 10 new projects over four years, compared with the 1-2 that had been accomplished

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beforehand, but by the end of that period, 45 new projects had been completed. Innovations include a multimedia-equipped City Council room that permits citizens to participate in Council meetings through cable TV and the Internet and to directly question their representatives; a broadband multimedia network serving the schools; a "CommeVous" search engine on the city's Web site that allows citizens to discover people who share their interests; even the ability to vote online. Increased efficiency produced approximately US$500,000 in annual savings that helped fund these and other projects.

Perhaps because city government did not have to spend time on IT infrastructure, it could focus on ensuring that the new services were widely deployed and involved citizens in the new economy and society of the Digital Age. The city attracted multiple carriers to provide high-speed Internet service via ADSL-2 or cable modem at speeds of up to 20 Mbps. Today, about 70% of residents have Internet access from their homes and over 50% are on broadband, twice the French national average. New services included a string of "Cyber Tea-Shops" to lure senior citizens onto the Internet, "Cyber-Nurseries" where parents can check on their children via the Web, and a centralized Helpdesk Center that citizens can contact with questions or requests concerning the city or any of its organizations. The city created a Web-enabled Citizen Panel that consults the population on local issues by Internet every three months. Today, the city hosts an annual Worldwide Forum on E-Democracy and presides over a network of 180 mayors called the "Global Cities Dialogue."

Since 1990, the population of Issy-les-Moulineaux has increased by 35% without any increase in government employment. Nearly 60% of the companies in the city are in the IT field, ranging from France Telecom's R&D center to Cisco, Hewlett Packard and Wanadoo Group. This city of 63,000 has an employment base of 70,000, making it one of a very select club of cities with more jobs than inhabitants. This economic success has also swelled the coffers of government, allowing a doubling of the city's budget from 1995 to 2001 and supporting the many projects that Issy-les-Moulineaux has introduced.

Mitaka, Japan

Mitaka is a suburb of Tokyo, home to 173,000 people in its 16.5 sq km (6.8 sq miles) of space. Before the Second World War, it was home to Japan's aeronautical industry and many small and medium-size manufacturers, giving it an early reputation as a high-tech center. But in the 1950s, high-tech manufacturing moved to lower-cost sites, threatening Mitaka's economic viability. Fortunately, the city also began to attract a different kind of organization: universities, corporate research centers and data centers. They were drawn by Mitaka's proximity to Tokyo, its location in a low-risk area for earthquakes (important to data center operations), and by the remaining base of manufacturers, including JRC, a well-known and highly-regarded technology company. As a result, over the next decades, the city developed a social and political culture that prized technology and considered R&D of high importance.

This culture stood Mitaka in good stead as the digital revolution began re-making the economy of Japan and of the world. In 1984, Mitaka became the first city in Japan to host a field test of fiber-to-the-home networking. In 1988, it served as a test bed for Japan's first ISDN service and, in 1996, Musashin-Mitaka Cable Television became the first ISP in Japan to offer broadband at 10 Mbps. Today, Japan is a world leader in both broadband deployment (third in the world after South Korea and Canada) and broadband pricing, with some of the world's lowest subscription costs. Even more important was a tradition of strong citizen participation, because it equipped Mitaka to respond flexibly and energetically to the challenges of a global economy. The current mayor, Keiko Kiyohara, came to her office after decades as a technology educator and leader of citizen groups. As the city has created development strategies, citizens have collaborated in planning, from transportation and public services to land use and communications.

In the late Nineties, Mitaka launched a "SOHO City Mitaka" program to promote further development of the small office/home office businesses

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that were an important part of its economy. An organization called the Mitaka Town Management Organization (MTMO) was founded to create a SOHO incubator. Its seven facilities today are home to 100 technology businesses. MTMO also provides business-matching programs and venture investment and other financial services to encourage business start-up and growth. In 2003, Mitaka launched a new public-private project called "Mitaka City of Tomorrow," with a core team of 83 citizens and representatives from business, universities and government. The project is now engaged in national field testing of information home appliances and citizen e-projects. As early as 1989, Mitaka had introduced computer literacy classes for teachers and students. By the late Nineties, the city had connected its schools to broadband and the cable TV system and begun introducing digital materials and computers as learning tools. One example was a 2003 school project involving 1,400 students that experimented with a wireless network running at 52 Mbps. And the city has not neglected its post-school population. It has created a series of classes and activity groups to introduce senior citizens and parents to life on the Internet.

Today, Mitaka is home to research and data centers for Dentsu, IBM Japan, SECOM and a variety of Japanese government agencies. There are a total of 61 educational institutions in the city employing 3,000 academics and researchers, and a group of universities lead by HOSEI is creating a new Mitaka Network University set to open in 2005. Mitaka has continued its traditional role as a cluster for the design and manufacturing of precision and optical instruments, and has become the worldwide hub for production of "anime" cartoons, producing an estimated 75% of all anime seen around the globe.

Pirai, Brazil

In 2004, fewer than 6% of Brazilians, or 11 million people, were users of the Internet. Of these, about 6% had access to broadband connections, and 90% of them lived in Brazil's biggest cities. Yet, in February of that year, the little city of Pirai, located about 70 kilometers (44 miles) outside Rio de Janeiro and with a population of 23,000, switched on a wireless broadband network provid-

ing 14 Mbps of connectivity to every public facility, from the town hall to public schools and street kiosks. It was an impressive feat of technology implementation. Yet it was not technology that earned Pirai a place among the Top Seven, but the broad objectives and collaborative process that made the technology possible. In 1996, Pirai elected a new mayor, Luiz Fernando de Souza, who felt strongly that communications and information technology should be part of the city's future. The Brasilia University was invited in 1997 to develop an IT master plan for Pirai and, beginning in 2001, the city won a series of grants and loans to plan a "Pirai Digital City" project. Its primary focus was on developing an educational network linking schools, laboratories and libraries, but with the

input of donors, it expanded to include efforts to bridge the digital divide with broader coverage. Mayor Souza's government formed an advisory board made up of representatives from government, residential associations, academic and nonprofit organizations, business and labor unions to oversee the continued evolution of the plan.

For several years, funding continued to be both a challenge and opportunity. It was a challenge because the city found it impossible to obtain either grants or loans from the central government to fund deployment of the network. But it was an opportunity because lack of direct funding forced Pirai to innovate. The city formed alliances with local businesses that could provide expertise, and with a competitive telecommunications company that could help connect nodes in the wireless network. The Pirai branch of CEDERJ, a consortium of public universities offering online courses, agreed to create an Educational Technology Center on its premises to oversee implementation. These moves, plus a re-thinking of the network requirements, allowed Pirai to drive down the cost by a factor of eight, and made it possible to finance the project within the city's budget, with only modest assistance from the national government.

The network was turned on in February 2004. Whereupon Mayor Souza's government turned its attention to the issue of sustainability – specifically, to developing Digital Age skills among citizens and organizations in Pirai, in order to

sustain the network itself and use it as a means to transform life and work. Though the network has been operating for less than a year, it seems clear that the collaborative approach that led to its creation will continue to support the growth of an intelligent community in Pirai.

Singapore
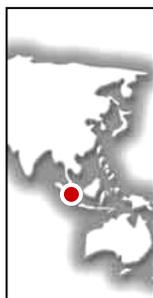
Singapore is a city-state of 685 sq km (264 sq miles) at the southern tip of the Malay Peninsula with a population of 4 million. ICF named Singapore as its first Intelligent Community of the Year in 1999 for its ambitious plan for – and then to its 2002 Top seven list for its successful deployment of – the Singapore One project beginning in 1998. The aim was to provide every citizen and business with a high-speed Internet connection, and to foster the development of an online economy benefiting all of its citizens. In April 2002, the Infocomm Development Authority (IDA) of Singapore's government announced that broadband was available via ADSL or cable modem to 98% of homes, and that one in three residents was a subscriber. An annual survey of Internet activities revealed that Singapore's B2B e-commerce revenues grew from US$23 billion in 1998 to US$51 billion in 2000. Online procurement by business alone rose from US$3 billion in 1998 to US$10 billion in 2000. Not content with this level of growth, Singapore's government began announcing a series of programs and incentives starting in January 2002 to promote applications development and greater usage, including a "Connected Homes" test bed for home networking and community services and a MySingapore Web site giving citizens access to a broad array of services.

Singapore rejoins the Top Seven in 2005 because of the outstanding progress it has continued to achieve and for its ambitious new vision for creating a Digital Age trading hub for the Asia-Pacific region. Progress has come in many areas, thanks to IDA's unrelenting focus, strong funding and a emphasis on collaboration with private-sector partners. In 2003, PC ownership had risen to 74%, Internet connectivity to 65% and broad-

band subscribers to 40% of the total population. About 600 wireless hotspots have been deployed across the island (125 at McDonald's restaurants), providing one wireless hub per square kilometer, and a standards-based integrated roaming and billing service gives users access to the entire wireless network. An alliance between IDA and Microsoft has made Singapore's schools a test bed for digital textbooks, Tablet PCs and other innovative technology, as well as for in-depth technology training for both teachers and students. The World Economic Forum has ranked Singapore as one of the world's most network-ready nations, and a 2004 report by Accenture ranked the country as second in the world for e-government leadership.

Becoming an "Intelligent Island," as Singapore calls itself, is only one step in a process. IDA's latest vision, Connected Singapore, positions the nation as a Digital Age trading hub, echoing its leadership role as a trade port for physical goods. IDA's plans call for Singapore to become a center for the secure creation, management and distribution of digital content, from TV programs to images, movies to online games. Piracy of intellectual property is a major problem in much of Asia. It stunts the market by reducing incentives for content owners to create or distribute content in the region. IDA will work with local and global companies to develop technological and other means to ensure security in all forms of digital commerce, with the potential of unlocking high growth. As one example, IDA recently facilitated a pilot project for the distribution of new Indian films via satellite to secure servers in Indian movie theaters. The theaters reported a sharp increase in attendance, because local pirates were prevented from stealing the 35mm film reels, digitizing them and selling DVDs on the street. If Singapore can fulfill this vision, it will indeed become one of the world's great digital commerce centers.
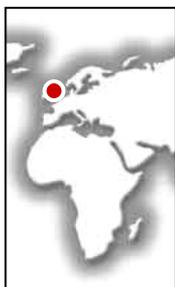
Sunderland, United Kingdom

The city of Sunderland (280,000 pop, 137 sq km or 53 sq miles) is among the Top Seven Intelligent Communities for an unprecedented fourth year in a row. This is a tribute to how far the city has come in the past 20 years, and to a truly unrelenting

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commitment to gaining and maintaining control of its economic and social destiny.

In the 1980s, this former shipbuilding and mining city in the north of England had a peak unemployment rate of 30%, higher than in the Great Depression, and was ranked in the bottom 10% of "depressed districts" by the British government. Then in 1991, Sunderland's government launched a multi-pronged initiative to create, on the shattered foundation of its old industries, a new knowledge-based economy. The city persuaded a real estate developer to build the first, speculative building of what is now Doxford International, an award-winning office park that is the European headquarters of Nike and home to such companies as Barclays, One 2 One, London Electric and Verisign Europe. In 1999, Teleport House opened at Doxford as a multi-partner venture undertaken by the city and local colleges, universities and businesses. By 2003, Sunderland was providing a private peering point on the BT backbone network, and interconnected with such regional networks as the E-foundations Business Network and the Northern Metropolitan Area Network.

From the start, the city committed itself to shaping a knowledge-based and broadband-based economy from which all citizens would benefit. Sunderland used funding from the European Community and the national government to rebuild its waterfront and create a new home for Sunderland University. The city created a Telematics Strategy in order to ensure that citizens benefited from the new economy. The Strategy included training programs in Digital Age skills for the unemployed, public-access Internet terminals and a government-funded high-speed network, and a business incubation program. By 2000, the total of new jobs created passed the 8,500 mark and Sunderland achieved a new milestone by attracting an EDS data center to open its first facility in the north in June 2002. A second Telematics strategy, covering the 1999-2003 period, set new goals, including development of a publicly-owned ISP and e-government hub called the Sunderland Host, expansion of the high-speed network to businesses and community centers, and creation of a one-stop Sunderland Portal for citizens, business and government users.

In 2004, a new business park, Rainton Bridge, began development and is expected to generate more than 4,000 jobs when completed. PSInet UK (a unit of Telstra) is deploying high-speed connectivity, managed hosting and other mission-critical business services to the park via its European IP network and data centers. PSInet will use its Sunderland hub to serve businesses across northeastern England. A new accredited science park is also in development at the North East Business & Innovation Center, an incubator established in 1995 that is already home to 165 businesses employing 1,100 people. A dedicated E-Government team is implementing a strategic change program called "peoplefirst" that aims to adopt technology-based approaches to delivering government services. These include equipping front-line staff with wireless PDAs to enable them to check or update records and order services while engaging with citizens, and identifying and training volunteer Community e-Champions to help reach across the Digital Divide. Sunderland's efforts have reduced its unemployment rate to a 25-year low of 4% and more than halved the number of long-term unemployed since 2000. Sunderland recently won the coveted "Beacon Status for Social Inclusion" from the UK's Local Government Association, while a 2004 study by KPMG ranked Sunderland as one of the top five most competitive business locations in the UK. That is a balance of digital democracy and digital growth that any community could envy.

Tianjin, China
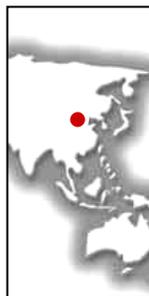
Tianjin is an industrial and port city of 11 million people in northern China near the capital of Beijing, far from the booming coastal provinces of southern China. To increase its growth rate, the municipal government set out a strategy for broadband deployment in its 10th five-year plan. Collaborating with telecom carriers, cable TV companies and equipment manufacturers, the city has deployed 19,000 km (11,800 miles) of optical fiber providing the backbone for a broadband wireless network that blankets the entire city. Today, there

are 2 million Internet users in Tianjin, and broadband subscriptions have jumped from 20,000 at the end of 2002 to 200,000 today, a 450% growth rate.

Like other members of this year's Top Seven, Tianjin views the network as the enabler of applications that make government more efficient, improve citizens' lives, and provides a platform for global business. The city has launched an e-government training program to provide its officials and employees, as well as corporate CIOs, with digital skills. Over 100,000 trainees have passed through at least one of the new courses so far. The city has also developed an e-government platform providing online access to 320 departments, including public finance, taxation, city planning, housing, commerce, education and justice. Proposed government policies are posted to the Web so that citizens can offer comments before the policy is implemented. Nearly 250 departments use the network for internal management, and over 400 e-forms make it possible for 20% of all administrative approvals to take place completely online. The broadband network also links the city's 101 hospitals, and an online payment system now settles 80% of all healthcare charges. When the SARS epidemic exploded in China, the network played a central role in transmitting information, instructions and supervision.

Rural areas of the vast Tianjin municipality have not been forgotten. A "village to village" program has, with help from satellites, connected 95% of the villages in the region to the network, with content covering agricultural production, management, marketing and sales that helps farmers increase their incomes. The city's focus on IT has also paid off in terms of economic development. The annual sales revenue of Tianjin's information industries was US$14.1 bn in 2003, a 23% increase from the prior year. In that year, IT exports were worth US$6.6 bn, 46% of the city's total exports. Software exports alone reached $80 million, a record 33% year-on-year increase. The total industrial value-added from the city's information industries was US$3.6 bn or 12.6% of the city's GDP.

Toronto, Canada

Toronto has long been one of the urban success stories of North America. The Greater Toronto Area (GTA) is home to a multicultural population of 5.2 million people who enjoy a high qualify of life, access to culture and education, superb infrastructure, and a robust and diverse economy. A highly-educated, technically-proficient and creative workforce (nearly 60% have some post-secondary education) has made Toronto a hub for finance, corporate headquarters, filmmaking, call centers, manufacturing and R&D. It ranks third among major North American metropolitan areas for the size of its information and communications technology labor force. Multiple carriers have wired the Toronto area and made access to broadband and advanced services nearly ubiquitous.

Beginning in the late Nineties, the City of Toronto launched a number of projects to broaden and deepen the local impact of the broadband revolution. Some focused on ensuring that the benefits of the Digital Age reached more citizens. An intergovernmental committee from the city, Ontario Province and the national government established an array of training, research, technology internship and funding programs. A Kids@Computers program focused on the children of disadvantaged families and succeeded in providing a home computer and basic training to 3,000 families in the GTA. Government has also collaborated with the private sector to build a number of industry clusters focusing on wireless networks, e-learning, e-health, and digital media, as well as software for the region's traditional core industries such as banking, insurance and manufacturing.

Then, in 2002, Toronto introduced its eCity program to improve both the internal workings of government and the delivery of services to citizens. Some initiatives focused on making the City Council more efficient through better access to information, and more transparent through better communication with citizens. Others targeted service-delivery with online permit applications and fee payments, a non-emergency call center for

inquiries and service requests, and an effort to expand public-access terminals.

Through eCity, Toronto also seeks to streamline procurement and such functions as public health inspection, social services and infrastructure management, while also making the city a smarter buyer of technology products and services. As the eCity program continues to evolve, it promises to make Toronto not just an urban success story but a truly digital city ready and willing to compete with any urban area in the world.

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THE INTELLIGENT COMMUNITY FORUM (ICF) is a special interest group within the World Teleport Association" that focuses on the uses of broadband technology for economic development by communities large and small in both the developed and developing world. ICF conducts research, creates conference content, publishes newsletters and presents annual Awards for Intelligent Community and Intelligent Building developers. More information is available at www.intelligentcommunity.org.

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