



"TOWARDS CREATING AN INTELLIGENT TAIWAN - THE GLOBAL ICF EXPERIENCE".



INTELLIGENT COMMUNITY FORUM
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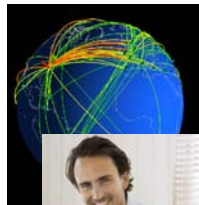
Presented by
John G. Jung
Chairman
Intelligent Community Forum
&
President & COO
GTMA

International DIGITAL CITIES
CONFERENCE

Taoyuan, Taiwan August 11-14, 2008



Welcome to the Broadband Economy



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Creating the Broadband Economy



■ Global Broadband

- Deployed beginning in 1970s
- Connecting economic centers worldwide, enabling...
 - Collaboration and trade across time zones and borders with low or no transaction cost
 - Melding financial markets and making investment portable
 - Making intellectual property and knowledge work dominant economic factors



■ Local Broadband

- Deployed beginning in 1990s
- Providing individuals, local institutions and government with enterprise-level and high-speed access to...
 - A global and local community
 - Worldwide information resources
 - A global marketplace



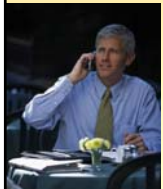
Characteristics of the Broadband Economy



- For economic purposes, the hardworking people of Mumbai, Shenzhen and Jakarta live next door to the hardworking people of New York, Melbourne and Vancouver– but have much lower costs and living standards



- It's a FLAT WORLD: impacts and opportunities of Global Sourcing, Administrative and Labour Arbitrage



- Supercharged competition between global cities leads to...
 - Falling prices of hard and soft goods, which challenges established producers while benefiting consumers
 - Accelerated product lifecycles as competitors vie for advantage in the market
 - Efforts to move “up the value chain” in response to price competition for commoditized products and services





Broadband Economy Community Impacts

- Every worker is exposed to wage and skill **competition** from workers in similar industries worldwide
- **Decline** of manufacturing as job generator, with corresponding decline in wages for unskilled and low-skilled labor
- **Every community** has opportunities to use broadband for economic, political and social development
- **Small and midsize companies** (primary producers of job growth) have global trade opportunities once reserved for multinational firms
- **But..** taking advantage of broadband opportunities requires prolonged, conscious effort to **adapt**

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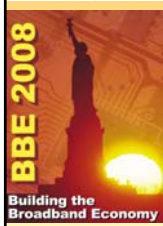
Intelligent Communities

- Using broadband and IT to adapt and prosper in the Broadband Economy *
 - Ensuring **broadband deployment** as the next essential utility
 - Developing a workforce capable of doing **knowledge work**
 - Promoting **digital inclusion** to increase economic participation, ensure political participation and prevent social exclusion
 - Spurring government and business **innovation**
 - Becoming an **effective marketer** of Broadband Economy strengths



* *Benchmarking the Intelligent Community*, ICF, 2001

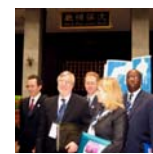
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Intelligent Community Forum

Since the year 2000...

- High Profile Annual **Awards** Program gathering detailed information on dozens of communities per year
- **Publish** white papers: *Top Seven Intelligent Communities of the Year, E-Government and Economic Development* and related media
- Annual **Summit** of community and business leaders from countries around the world
- Immersion Lab **Study Tours** of Intelligent Communities
- Global **speaking** engagements
- Working towards the development of an ICF **Institute**
- Developing an ICF **Alumni**
- Workshops, seminars and **educational curriculum** on Intelligent Communities



- **Twelve prioritized public construction projects to regenerate Taiwan**
- Investment of NT\$3.99 trillion within eight years
- Creating job opportunities for 120,000 people each year

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. A Fast and Convenient Island-wide Transportation Network 2. Kaohsiung Free Trade Zone and Eco-Port 3. Taichung Asia-Pacific Sea and Air Logistics Hub 4. Taoyuan International Air City 5. Intelligent Taiwan 6. Industrial Innovation Corridors | <ol style="list-style-type: none"> 7. Urban and Industrial Zone Renewal 8. Farm Village Regeneration 9. Coastal Regeneration 10. Green Forestation 11. Flood Prevention and Water Management 12. Sewer Construction |
|--|---|






**Intelligent Taiwan:
Project #5**

Intelligent infrastructure:

- extending wireless broadband
- building intelligent transportation systems

Cultivating opportunities for training and sustaining skilled workers throughout Taiwan


- digital inclusion reducing rural-urban divide

Intelligent living environments

- quality of life throughout the island

Fostering a climate and culture of innovation and creativity.




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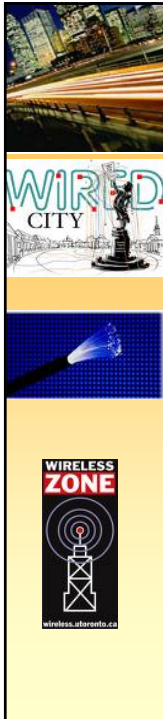
What is an Intelligent Community?

■ Intelligent Communities –

- Recognize the **impact of broadband** and its role as an essential utility for job creation and economic growth in the new Broadband Economy
- Work to create a **culture of use** among citizens, businesses and government to stimulate economic development and political participation
- Ensure that low-income and at-risk populations can **all participate** in the broadband economy
- **Transformation** occurs at every level - live, work and play

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What is an Intelligent Community?

■ Intelligent Communities know that being “wired” or “wireless” isn’t enough

- Without non-technology efforts, the broadband revolution risks –
 - Worsening social inequality
 - Reducing economic opportunity
 - Constricting cultural and political participation



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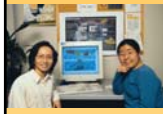
What is an Intelligent Community?

- Intelligent Communities **respond to the challenge** of local economic development in the broadband economy
- Intelligent Communities work to **maintain a high quality of life** - as places where the next generation can find a good job, make a home and raise their children
- Intelligent Communities **leverage** their unique qualities and traditional **strengths** in a new economic environment

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Intelligent Communities “Future-Proof” themselves.....



“... it’s my destiny, and I won’t wait for others to create it for me...”

Being part of broadband economy means:

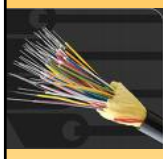


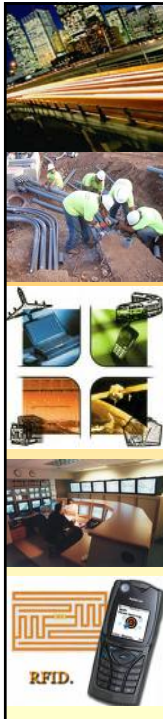
- **Being connected** to the global economy: anywhere, anytime!
- **Everyone is adapting** (individuals, businesses and institutions) to take advantage of changing economic opportunities
- **Producing and sustaining economic growth** through transforming and leveraging local strengths for global use
- Recognizing **geographic location** is no longer an obstacle
- **Marketing** yourselves and taking action!



Intelligent Community Indicators:

- **Broadband infrastructure**
- **Knowledge-based workforce**
- **Innovation**
- **Digital Inclusion**
- **Marketing and Advocacy**





Intelligent Community Indicators

Broadband Infrastructure

- Developing a clear vision of all hard and soft infrastructure requirements
- Developing realistic policies for deployment
- Identifying and striving to fill “broadband gaps”
- Collaborating with the private sector (public, private, PPP)
- Tying into all other forms of Infrastructure and related processes
 - Intelligent Transportation
 - Smart Cards
 - Just-in-time Delivery
 - Security and Efficiency: example- RFID Tags



Intelligent Community Indicators

Creating A Knowledge Workforce

- **Create, attract and retain knowledge-based workforce**
 - That can perform “knowledge work” (in universities; primary schools; factories & R&D labs)
 - Creates opportunities for Convergence of Technologies
- **Ubiquitous broadband suggests universal deployment and use.**
 - Requires complete overhaul in our society to take advantage of broadband applications and services.
 - Requires that we educate and make available to everyone the tools to utilize these services to achieve prosperity.
- **Building ubiquitous broadband requires building ubiquitous demand.**





Intelligent Community Indicators

Innovation and Creativity



- Changing people's lives; efficient services; e-government; community culture of use



- Innovation occurs when the environment is created for creativity and ideas to flourish and the resources and technologies are accessible (and affordable) to enable them to happen.



Intelligent Community Indicators

Digital Inclusion

Ensure that the benefits of the new economy reach all rungs of the economic ladder



- Digital and Broadband Economy is fundamentally transforming societies, their economies and their cultures around the world.
- But populations are becoming increasingly divided:



- Between those with access to technologies, education and the jobs and lifestyle that they offer and those without.
- Often hidden within the economy and culture of countries and within communities, both urban and rural.



- Reflection of the inequalities apparent in the social structure of each country.





Intelligent Community Indicators

Digital Inclusion

■ Brookings Institute & Gartner Dataquest study:

- “Example of impact of ubiquitous broadband at 10 mbps, in the U.S. alone, could total as much as \$500 billion worth of goods and services produced over the next decade”.
- “The largest single opportunity is to capture demand from those previously denied access”.
- “The figures for North America pale in comparison when compared to the **global opportunity to bridge the digital divide: a 10 Trillion dollar opportunity**”!

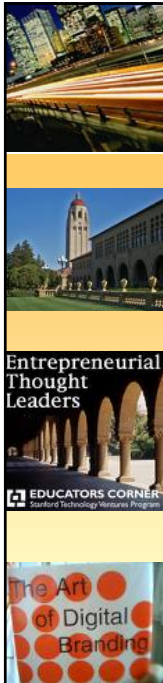


Intelligent Community Indicators

Digital Inclusion

- **Bridging the digital divide is clearly an opportunity to cultivate, harness and benefit from the creativity and talents of all people in a society, including all ages, races, creeds and religions as well as from all social and economic levels.**
- **We could argue that our collective ability to deal with the issue of the Digital Divide could become one of the principal measures of success in our communities around the world... our litmus test.**





Intelligent Community Indicators

Marketing and Advocacy

- Globalization of markets, capital and business operations puts a premium on ability of communities to market their “intelligence”
- Intelligent Communities market themselves effectively, based on needs of growth industries and competitive offerings of other communities
- Opportunity for “Communications and Advocacy” as well as “BRANDING”



Framework for action

Other Considerations:

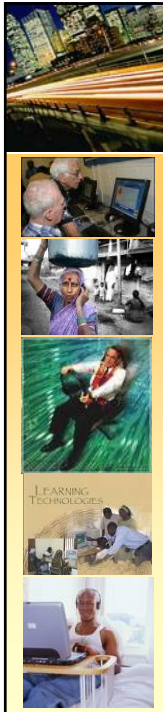
- Leadership
- Public Policy
- Content Development & Applications
- Investment and Risk
- Sustainability
- Collaboration
- Culture of Use

Indicators are key areas of focus in effort to build prosperous communities in the broadband economy

Foundation-building approach: each layer depends on strength of supporting layers

Gap analysis can reveal opportunities for action





Building a Culture of Use - ICF Theme for 2009

How does your community help your citizens and organizations to make broadband applications a part of their daily lives?

- By building a "culture of use" communities create the **digital experiences and digital engagement** that make them unique Intelligent Communities.
- Becoming "**instinctive users**" of broadband helps citizens and organizations increase their efficiency, expand their knowledge and improve living standards.

Examples of how communities create a local culture of use:

- Developing or expanding **accessible and affordable broadband networks**
- **Educating citizens of all ages** on the use of computers, the Web and Web-based applications
- Putting government functions and civic life **online**
- **Celebrating digital experiences** and engagement through local events, conferences, promotion through special events and local media campaigns
- **Other strategies that demonstrate** the value of broadband in economic, social and cultural life and
- **Provide opportunities for use and practice**



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Examples from around the world



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LaGrange, Georgia



- Rural city of 26,000 - 60 miles southwest of Atlanta
- Lost much of its industrial base in late 1980s as Raytheon and other manufacturers closed plants
- Bypassed by carriers for deployment of advanced telecom services. A city in crisis that bootstrapped itself for success.
- **By 1998, through leadership and innovation, the city operated +200-mile fiber in alliance with cable TV provider; by 2000, launched first free Internet & email service on TV, VOIP for voice service**
- Generating +\$1m annually from service delivery
- Gained 5,000 new jobs due to telecom infrastructure



Population
4,100,000
Labor Force
1,800,000

Cleveland, Ohio, USA

TOP 7 INTELLIGENT COMMUNITY (2006-2008)



- Former steel and oil processing centre; **Industrial decline, rising unemployment**
- **Through Crisis and Collaboration formed "OneCleveland"**
- **Mission:** deployment of community-based ultra-broadband network in metro area; and to build a new knowledge economy on its foundation (switched on in 2003)
- **Today institutional subscribers range** from the city and the regional MetroHealth System to the Cleveland Institute of Art and the Cleveland Orchestra, among others.





Cleveland, Ohio, USA



Applications Focus on Human Factors:

- **High-definition videoconferencing** connecting Clinic doctors to city schools for the delivery of healthcare.
- **Technology training** and network expansion.
- **Computer Learning in My Backyard (CLIMB)** tech and financial literacy training for low-income
- **Subsidized PC** and Internet access purchases.
- **Collaboration** among 66 regional foundations, engaging 50,000 area leaders in Internet-enabled "town meetings"
- **IBM selected Cleveland** as the Economic Development Grid, allowing government, institutions and businesses to leverage computing power.
- **Home to Cisco's** wireless technology operations and research center



Sunderland, United Kingdom (Top 7 – 2001-2005)



City of 280,000 in the shadow of Newcastle in northeastern UK

- Former shipbuilding and coal-mining center hard-hit by industrial decline
 - 1980s: unemployment rate exceeds 30%, higher than in the Great Depression
 - In top 10% of UK "distressed districts"
 - Low-skilled workforce, heavy concentration of elderly, disabled workers
- Created and publicized a "Telematics Strategy" to ensure that all citizens benefited from new economy
- **E-Government Team implementing "peoplefirst"**
 - Aim - to adopt technology-based approaches to delivering efficient government services.
 - Equipping front-line staff with wireless PDAs to check records and order services while engaged with citizens
 - Identifying and training "Community e-Champions"





Sunderland, United Kingdom

- By 2003, unrelenting commitment to control over Sunderland's economic and social destiny led to –
 - Over 12,000 new jobs in technology-driven businesses
 - Reduction of unemployment rate from 30% to 4%
 - +50% reduction of long-term unemployed since 2000
 - “Beacon Status for Social Inclusion” award from UK's Local Government Association
 - Ranked one of top five most competitive business locations in UK by KPMG



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Sunderland, UK

- Sunderland won the *Digital Challenge to Bridge Social and Digital Divide*

*“Digital Inclusion is about more than new technologies...
....It is an opportunity to solve problems and improve the lives of people in our communities.”*
- Sunderland recognized as an example of best practice in the use of ICT technologies to tackle social exclusion.
- Sunderland saw its community benefiting from
 - community e-champions working in their local area to help vulnerable people access computer and internet services,
 - helping children at risk of underachieving and
 - an e-mentoring scheme working for children and young people.

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Tallinn, Estonia (Top 7, 2007 and 2008)



- Regaining its independence in 1991, Tallinn emerged as a **hotbed of IT culture**.
- First PAP (Public Access Point) – National Library
- By 2000 with the Public Information Act, required all Libraries to provide PAPs (730 PAPs emerged but now **widespread through free WIFI**)
- **Open Estonia Foundation (Soros)** opened access points throughout Estonia with training
- **Banks initiated “Tiger Leap” initiatives** with 16,000 teachers and 200,000 students
- **Significant cultural change** with technology and broadband related IT startups at its base: Skype, Hotmail, KaZaa, etc.



Tallinn, Estonia



- **E-Estonia:** e-government services over internet and extensive, ubiquitous mobile-based services over sms – nearly every person has access to mobile communications (102% public coverage)
 - Most **transactions possible over mobile phones:** parking, beer, coke, taxis, taxes and bank charges
 - Teachers, Students and Parents **collaborate** over teaching and examination marks
 - **E-democracy portal**
- **1 million ID cards** issued (digital signatures)





Gangnam District, Seoul, South Korea

Intelligent Community of the Year, 2008



Leads world in broadband penetration:

- 12 million broadband subscribers (25% of entire population)
- Speeds of 10 Mbps a standard offering in all urban areas.



Policy Leads:

“Secret behind South Korea's explosive growth has been **strong government-business cooperation**, with government setting objectives, determining policy and directing credit and investment.”



(Mayor Jung-Ju)



Gangnam District, Seoul, South Korea

Ubiquitous technology is being used to make government more accessible to the people it serves.



- Government-supported applications serve citizens from cradle to grave.
- **Computer and IT literacy training** for its citizens, etc. **Gangnam Portal** has trained 350,000.
- U-SMART initiatives aims to increase demand for "**ubiquitous computing**" technologies anywhere.
- **TV Government** – all services available to every citizen, including all official documents, access to sample school entrance exams and other educational services.
- Since 1997, 40 **internet based home school sites** became available to the infirm, disenfranchised, elderly.
- **Incentives** promote continued education for workers; **Assistance** for disenfranchised.





What is an Intelligent Community?

Taipei, of course!



Intelligent Community of the Year, 2006

- 2,200 companies employing 85,000 knowledge workers established their global headquarters in the Neihu and Nangang parks (Total revenues exceeding US\$53 billion in 2005)
- The Taipei Technology Corridor is helping to nurture a globally competitive environment for both local and international companies.



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Taipei INTELLIGENT COMMUNITY of the Year (2006)



In 2006, ICF recognized Taipei for taking its CyberCity program to the next level by:

- *Making broadband connectivity and its use and application an essential component of life for its citizens and businesses, and*
- *Using it to transform their economy, culture and social aspects of the city.*

It is also a role model for communities around the world.

ICF believes Taipei is one of the few perfect examples of the intelligent community.



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**Leadership: -
in 1998 Mayor
Ma
challenged
Taipei to
become a
CyberCity**

Taipei – Model Intelligent Community

Taipei is a major global technology leader.

- Taipei is among the world's top three cities for broadband infrastructure and sophisticated IT applications;
- World's largest producer of laptop, notebook computers and computer motherboards.
- PCs in 88% of homes and 77% of households connected to ADSL service.
- Ubiquitous wireless broadband – largest in world to 90% of city with over 4200 access points

Taipei - Innovative and Creative

Taipei's Challenge is to run faster in a fast world to maintain/increase its competitive edge

- Taipei is unique –new paradigms; new approaches; new values;
- Thousands of "smart" internet-linked convenience stores;
 - Taipei Technology Corridor;
 - Electronic Document Interchange system (e-government);
 - Intelligent Transportation System (e-buses; e-parking; e-taxis)
 - Revolutionized training conditions in government agencies Taipei e-campus)



Taipei - develops, attracts and maintains its knowledge workforce

Taipei is home to 27 universities and colleges, 10 research institutes, and largest number of MBA-qualified managers in Asia;

- Over 46% residents hold a university degree;
- **Microsoft** selected Taipei as the world's first location for its Future School Program;
- **Cisco Systems Network Academy** attracted 79 Taiwan companies, training 16,000 students.
- The city invested in building broadband infrastructure and using the Internet to improve public services:
- **e-schools** - PCs with broadband connectivity in every classroom & computer labs
- **e-communities** -free PC / Internet training to 240,000 people & 800 public Internet kiosks





Taipei - Intelligent Community seeks to address the Digital Divide:

- Equality through e-Government services for healthcare, disaster support systems, and public safety monitoring (Disaster Prevention Network)
- Integrated broadband and online services into citizens' lives
- IT-based platform for innovation
- Smart Cards: 5.7 million easy cards issued (communications, transportation, security, transactions)
- Digital equality: 220,000 people trained
- 300 medical facilities linked in e-healthcare initiative, etc..

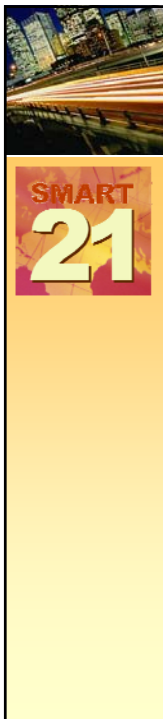


Taipei - Intelligent Community Markets itself:

- Local and International Promotion and Branding
- Earned media through viral, web and ICF award
- E-Government project, participation in demonstration shows and seminars, provides opportunities for other cities to learn.
- Through sharing Taipei and Taiwan's overall IT capacity has thus been enhanced.



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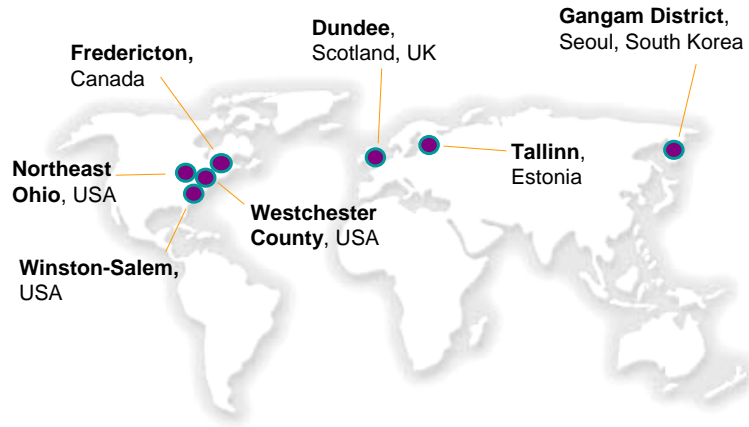
Smart 21 Communities of 2008



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The Top Seven of 2008



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Is the broadband economy scalable?



- **Communities in regions and nations are competitive**, but examples of **collaboration** exist such as the Ontario Tech Corridor – Ottawa, Waterloo and Toronto Region
- **The broadband revolution is transformative** and is reflected in intelligent communities worldwide,**small or large**,**cities, regionsand now nations**.

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Size doesn't matter!

■ Nevada, Missouri (2003 Top Seven)



- Nevada Telecommunity project aiming to create new economic opportunities in **city of 8,600**, stop population decline and reduce '91 unemployment rate of 10%.
- Telecenter for skills training and technology consulting, Televillage providing broadband for home-based and small businesses
- By 2000, unemployment rate fell to 2%.

■ Pirai, Brazil (2005 Top Seven)



- **City of 23,000** - 44 miles from Rio de Janeiro completely lacking Internet access
- Locally-funded public-private wireless network switched on Feb. 2004. Public universities providing training to build broadband culture of use.



4.5 Million population;
Area: 700 Sq.Km



Size doesn't matter!

Singapore



- Intelligent Nation 2015 (iN2015) 10-year masterplan to realise the potential of infocomm over the next decade.
 - Led by the Infocomm Development Authority of Singapore (IDA), iN2015 is a multi-agency effort that is the result of private, public and people sector co-creation.
- **iN2015 is the blueprint** to navigate Singapore's exhilarating transition into a global city, universally recognized as an enviable synthesis of technology, infrastructure, enterprise and manpower.
- **Singapore's Strategy (iN2015)**
 - to spearhead the transformation of key economic sectors, government and society through more sophisticated and innovative use of infocomm
 - to establish an ultra-high speed, pervasive, intelligent and trusted infocomm infrastructure
 - to develop a globally competitive infocomm industry
 - to develop an infocomm-savvy workforce and globally competitive infocomm manpower






Population
11,000,000

Area:
12,000 Sq.Km



Size doesn't matter!

Strategies matter!

Tianjin China






Tianjin recognized the importance of building powerful information technology and service industries

- Eagerly embraced broadband and IT for efficiency and responsiveness

Northern China - late to the IT revolution; Tianjin has a sense of urgency to catch up.

- focused on broadband deployment for citizens, business and government;
- e-government applications to make government more responsive and efficient;
- development of new high-tech industrial zones.
- goal to provide broadband access to 100% of the 12 km² (4.6 sq. mile) city,
- to have 80% of households own a PC and 55% of residents become Internet users,
- total broadband penetration to reach 60%.



Collaborating with telecom businesses, the city deployed **20,000 km (12,500 miles) of optical fiber**

2002: only 20,000 people used the Internet; 2004: 2.7 million Internet subscribers

Online government services; healthcare, education


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Population:
3.0 Million



Area:
662,000 sq.km.



Size doesn't matter!

Strategies matter!

Province of Alberta:






Province of Alberta:

- SuperNet, a super-sized state-of-the-art broadband network, now links the whole province with fibre optic cable – (\$193 million investment for 13,000 kilometres of affordable connectivity is operational in 4200 facilities in 429 communities across Alberta
- Goal is to create "an ubiquitous, affordable, high-speed communications infrastructure" –
 - Make broadband available within three years to 100 percent of the schools, 95 percent of businesses and 80 percent of residences, to reach a total of 90 percent of Albertans.
 - The base network is supplied and owned by the private sector (Prime contractor: Bell). Delays or cost overruns are responsibility of private sector.

Alberta SuperNet is shifting its focus to developing applications that bring to life the capabilities of this world-class network.

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Size doesn't matter! Strategies matter!



- **Australia** is embarking on a bold strategy to build a new national broadband network.
 - Australia's Government has committed AU\$4.7 billion to subsidize the rollout of a fiber network accessible to at least 98% of the population.
- Australia recognized that the network should be fast and ubiquitous but also open, promoting consumer choice, competition, and innovation.
 - National broadband policy isn't a one-size-fits-all matter, and different choices will be more appropriate for different contexts.
 - Australia's proactive approach is a model that builds open, non-discriminatory broadband access into next generation networks from day one.

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Size doesn't matter! But it is relevant in benchmarking...



Singapore 700 sq. km.;
Pop: 4.5 Million

Greater Toronto Area 7000Sq Km;
Pop: 5.6 Million

Taiwan 35,600 sq. km
Pop: 23 Million

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Common factors of Intelligent Communities



- Big or small – most have a “sense of urgency”
- Decision to actively adapt to new market and technology forces
- Leadership defined clear vision of the challenge and how it could be met
- Built public understanding of the challenge and communicated urgent need for action
- Spirit of collaboration manifested in forums and programs involving government, business, nonprofits and educators
- Embraced Intelligent Communities approach and not shy to globally market their successes

Named one of the Smart 21 or
Top 7 Intelligent Communities
of the Year by ICF



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**"TOWARDS CREATING AN
INTELLIGENT TAIWAN - THE
GLOBAL ICF EXPERIENCE".**

Thank you!



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John G. Jung
Chairman
Intelligent Community Forum

**The deadline for submissions of the 2009 Intelligent
Community Awards is September 30, 2008. Forms are
available at: www.intelligentcommunity.org**

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