

Accelerating Your Community

Dakota County



Robert Bell

Co-Founder

www.intelligentcommunity.com





Intelligent Community Forum

Think tank in operation since 2000

- Study the economic and social development of the 21st Century community
- Provide the information and tools communities need to make economic and social progress using information and communications technology:
 - Stagnant and declining post-industrial communities
 - Rural communities losing population to urban centers
 - Communities with successful high-tech economies striving to maintain their lead against energetic competitors

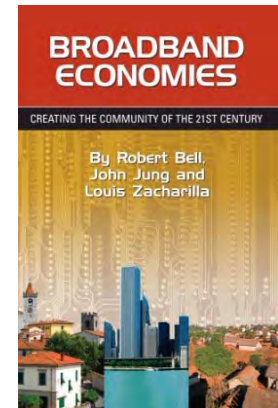




Intelligent Community Forum

Since 2000...

- Annual Awards program gathering detailed information communities around the world
- Publishing: *Broadband Economies*, *Top Seven Intelligent Communities of the Year*, *E-Government and Economic Development*
- Annual summit of community and business leaders from countries around the world
- Immersion Lab study tours of Intelligent Communities
- Community Accelerator program
- Intelligent Community Association and Intelligent Community Institutes





Community Accelerator

Development tools to improve competitiveness, deepen social inclusion and enhance ability to adapt to change

■ Community Metrics

- Benchmark Dakota County against the average of ICF's award-winning Intelligent Communities around the globe

■ Community Engagement

- Working in the community to present and explain the findings and offer recommendations based on ICF research

Creating the Intelligent Community



Dakota County



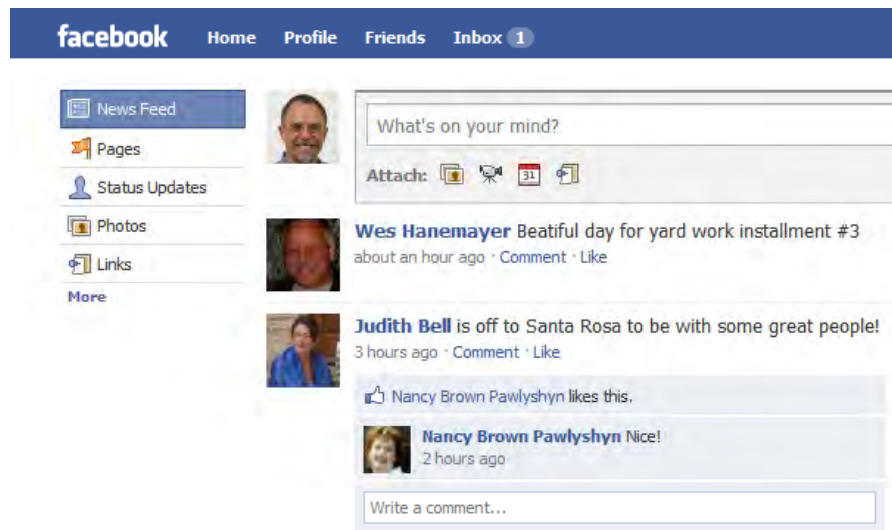
The rise of **facebook**

- Launched at Harvard in February 2004 by Mark Zuckerberg
- By end of 2004, had spread to most major universities and colleges in US and Canada
- 2006: opened to anyone with an email address
- March 2009: More than 300m active users
 - 91 million unique visitors per month
 - More than 6 billion minutes of use per day
 - More than 40 million status updates per day
- August 2008 private share sale valued company at US\$3.75-\$5bn



The rise of **facebook**

- What did students have that the rest of us didn't have?
 - Time on their hands...
 - The drama of being 18 to 22...



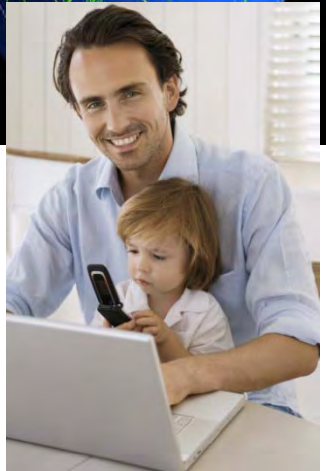


Broadband in the headlines

- October VC investment values Facebook at US\$8bn
- Death spiral of newspaper publishing blamed on switch to online news consumption
- Recording Industry Association of America wins US\$1.9m judgment against teenager who downloaded music without paying for it
- US Postal Service will deliver 43 billion fewer pieces of mail in 2010 than in 2006
- Twitter feeds kept the world informed about the 2009 protests against the Iranian government



Welcome to the Broadband Economy





Creating the Broadband Economy

■ Global broadband

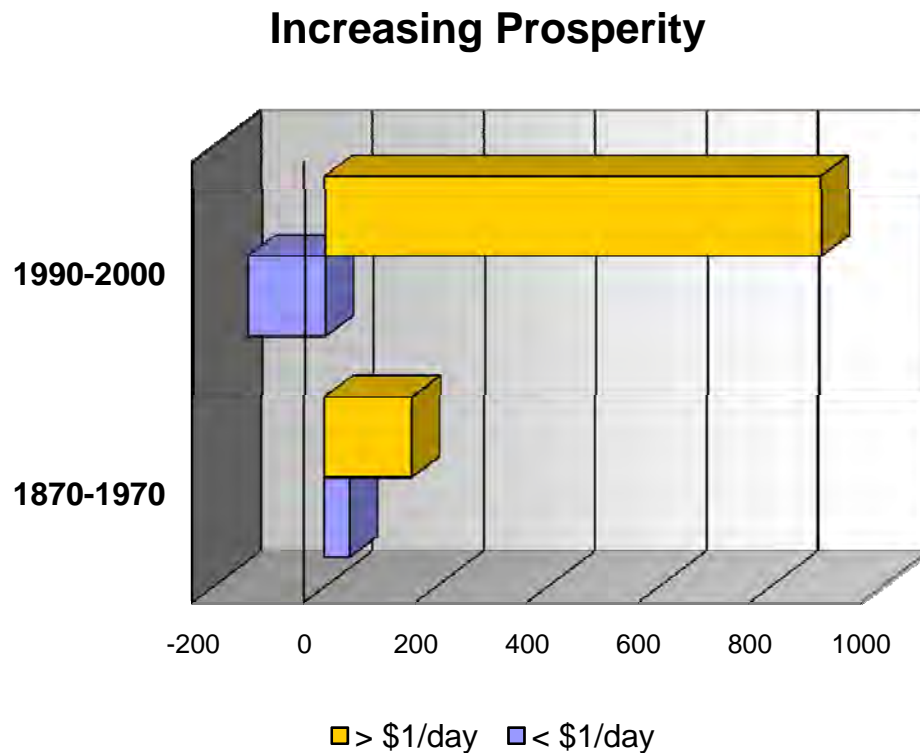
- Deployed beginning in 1970s
- Connecting economic centers worldwide
 - Enabling collaboration and trade across time zones and borders with low or no transaction cost
 - Melding financial markets and making investment portable
 - Making intellectual property and knowledge work into major economic factors





Creating the Broadband Economy

■ Global broadband



A net **one billion people** moved out of abject poverty in the telecom-powered **decade** of 1990-2000

A net 112 million people moved out of abject poverty in century from 1870 to 1970



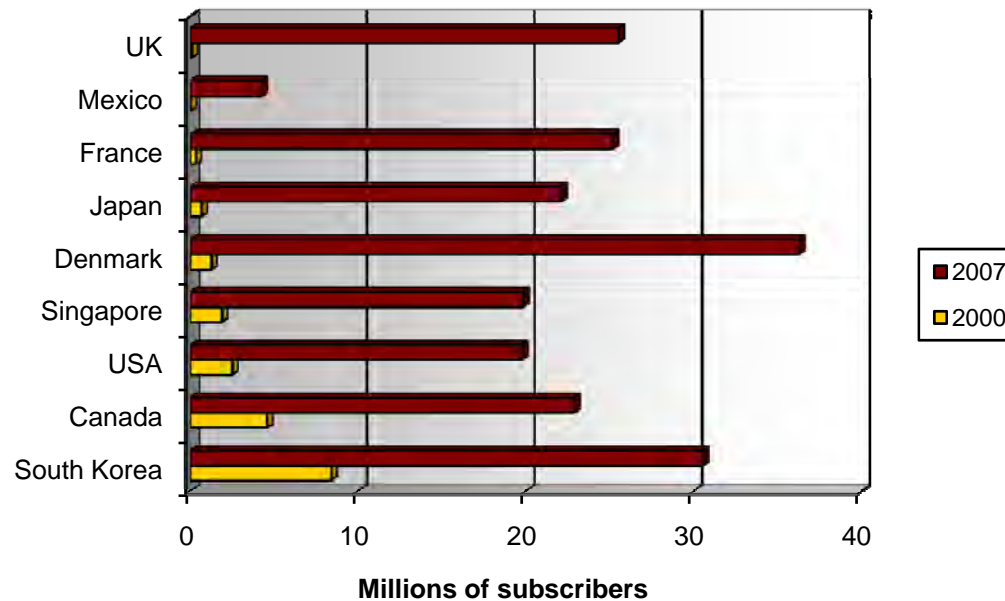
Creating the Broadband Economy

■ Local broadband

- Deployed beginning in 1990s
- Providing individuals, local institutions and government with enterprise-level access to local community and global information resources



Broadband Penetration: 2000 / 2007





Broadband impacts

■ Create wealth in the community

- European Union study
 - When broadband penetration reached 70%, yielded 1% increase in GDP; rising to 1.6% at 90% penetration
- Brookings Institute 2009 study
 - Every 1% increase in broadband penetration in a US state produced 0.2% to 0.3% increase in employment; applied nationwide, 1% increase in penetration = 300,000 more jobs
- Organization for Economic Development & Cooperation
 - Automating business process using broadband yielded 22% increase in productivity in the businesses studied
- Scottish Executive Institute of Directors
 - 64% of senior executives cited a link between broadband and increased profits





Broadband impacts

■ Save energy, reducing costs and carbon

- State of Missouri
 - 1,000 buildings, 28m s/f of space
 - Saved US\$20m in energy by connecting and managing buildings through the network
- Cisco Connected Workplace – flexible work environment
 - Reduced space needs 40%, per-employee electricity use 58% while increasing employee satisfaction, and productivity
 - Save US\$12m/year on real estate plus \$0.7m/year on energy from \$15m investment
- Washington State Smart Electricity study
 - 100 homeowners received digital tools for monitoring and managing electricity consumption at home
 - Internet portal to preset thermostats, dishwashers, etc.
 - Average 10% reduction in energy bills





Broadband impacts

■ Making employees more effective

- Anywhere, anytime collaboration
 - Teleconferencing
 - Desktop & room video
 - Email, calendaring and file sharing
 - Instant messaging
- Metropolitan Police, London
 - Wireless PDAs allow police officers to take control of CCTV cameras and view street scene while on the move
 - Westminster City issues 20.000 tickets per week, out of which 6.000 are contested
 - Parking attendants now take a photo, send it by Wi-Fi for upload on a web site. Car owner can access the web site to see his fine, the photo and perform online payment.





Broadband impacts

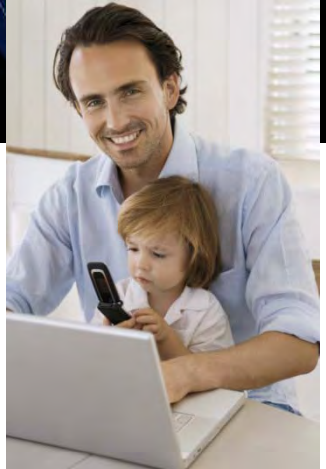
■ Increase quality of life

- Location-based services to the mobile device for residents and tourists – Luxembourg example
 - Find a restaurant or shop, get directions
 - Pay parking, public transportation and retailers
 - Guided city tours, location attractions
 - Find a friend, child protection
- Connected public transportation
 - Real-time schedule information
 - E-Ticketing
 - News clip distribution
 - Video surveillance





Surviving and thriving in the **Broadband Economy**





Broadband Economy Community Challenges



- For economic purposes, the people of Mumbai, Shenzhen and Jakarta live next door to the people of New York, Athens and Moncton, leading to -
 - **Flight of jobs and investment** to locations offering best mix of cost, appropriately-skilled labor and access to markets
 - **Supercharged competition** that shortens product lifecycles and puts a premium on innovation
 - **Rise in minimum skill level** needed to earn a living wage
 - **Local economic success** increasingly dependent on the global economy
 - **Social stresses** from eroding economic opportunities, pressure on social welfare, increased economic inequality



It's about the children

- Every community's first priority is to be a place where families can raise children and those children can build a future if they choose
- Economic opportunity makes possible everything else we value
- The Broadband Economy has changed the rules – for worse *and* for better





Broadband Economy Community Opportunities



- Every community has opportunities to use broadband for economic, political and social development
 - SMEs (primary producers of job growth) have **global trade opportunities** once reserved for multinational firms
 - Business, governments and institutions can **reduce operating costs** through online services and collaboration tools
 - **Innovation becomes as important as location, resources or capital** in creating opportunity for success
 - Individuals and businesses connect to a **global community of vendors competing for their business**, saving money and improving quality
 - Children and adults can **go global in search for education and culture**, knowledge and collaboration
 - Web-based tools can **increase community involvement**

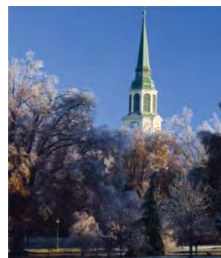


Broadband Economy Community Choice

- Taking advantage of broadband opportunity requires **prolonged, conscious efforts to adapt:**
 - Intensive collaboration between public, private and nonprofit sectors
 - Identification of challenges and development of strategies
 - Educating and consulting with the public to define the challenges and build a consensus for change
 - Identification and recruiting of community leaders from government, business and nonprofit sectors
 - Knowledge and capacity-building about digital technologies and applications
 - Mix of creative public and private investment



What is an Intelligent Community?



A town, city or metro region that understands the **challenges** of the global Broadband Economy, and is creating a local economy capable of seizing its **opportunities**.



2009

Intelligent Community Examples Bristol, Virginia

- Rural Virginia community of 17,000 developed fiber network for municipal electric substations in 1999
 - Connected government offices and schools in 2000; announced plan in 2001 to offer commercial FTTP
 - Three-year, \$2.5 million legal and legislative battle with telco and cable incumbents ended in victory for Bristol
- Impacts
 - Operates networks for local govt. in surrounding counties; \$16 million annual revenue has made network self-sufficient
 - Saved customers estimated \$10m since 2003
 - Attracted tech facilities for knowledge-based companies CGI and Northrup Grumman; two new industrial parks
 - Attracted an estimated \$50m in new private investment and additional \$37m in annual payrolls

INTELLIGENT
COMMUNITY
FORUM





Intelligent Community Examples

Issy-les-Moulineaux, France

- Paris suburb survived 1980-1990 de-industrialization thanks to government and military facilities
- 1996 Local Information Plan launched wave of change
 - Local government IT outsourced to Euriware
 - Pre-negotiated deals with alternative carriers provided fiber capacity after 1998 France Telecom liberalization
- By 2006...
 - Government facilities and schools online (1 PC per 11 students in primary school); robust e-government platform
 - 90% of citizens use Internet daily, 75% via broadband
 - Cyber-kindergartens and cyber-tea rooms spread digital literacy
 - 60% of employers are in ICT
 - 35% population growth since 1990 with no increase in government payroll
 - Issy ranked in top 13% of French cities for low operating costs
 - Issy has more jobs than residents



2006

INTELLIGENT
COMMUNITY
FORUM





Intelligent Community Examples

Waterloo, Ontario



- High-tech center (pop. 115,000) based on university-business collaboration, home to 70% of high-tech firms in Canada's Tech Triangle
- Importance of intellectual property policies of local universities, technical schools and research centers
- Public-sector strategic and tactical support
 - Center for Community Service Learning engages 1,000 students per year in community service tied to classroom learning
 - Waterloo Region Immigrant Network matches new immigrants to settlement, labor and job information
 - Intelligent Waterloo Steering Committee envisions community future and and raises public awareness



**Intelligent
Community
of the Year**

2007

INTELLIGENT
COMMUNITY
FORUM





Intelligent Community Examples

Fredericton, New Brunswick



- Municipal coop built fiber network for government and institutions in rural city of 50,000
 - Reduce costs, increased speed and capacity compared to carrier contract
 - Created competition that spurred private investment: 70% of households now connected to broadband
- Added 8 km² wireless overlay blanketing downtown “Fred-E-Zone,” receiving major publicity
 - “We don’t charge you to walk on our sidewalks; why would we charge you for broadband?”
- Innovation-driven knowledge economy
 - Knowledge Park public-private venture
 - University-business-government collaboration



2008

INTELLIGENT
COMMUNITY
FORUM





Intelligent Community Example LaGrange, Georgia



- Rural city of 26,000 spurred by 1990s plant closing to build communications infrastructure
- Unable to persuade telcos or cablecos to invest, created CLEC and built fiber networks
 - Backbone for government use, replacing telco systems
 - Muni bond issue funded state-of-the-art business and residential network leased to cable company, with bandwidth reserved for city
 - Introduced free Internet access service via TVs in 2000, which gained nationwide attention and was a hit “starter service” for the young and elderly
 - Attracted call centers, became IT service provider to entire county
 - Contributed \$1m+ to city treasury annually



**Intelligent
Community
of the Year**

2000

INTELLIGENT
COMMUNITY
FORUM





East Manchester, United Kingdom

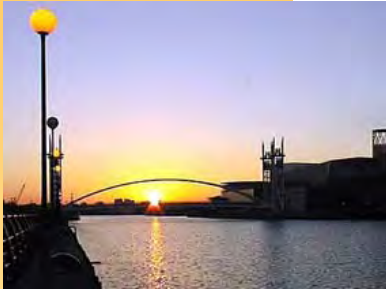
- Economically depressed district in vibrant Greater Manchester urban area of 2.6 million
 - Suffered 60% employment loss from 1975 to 1985
 - 1986: 52% of households received state benefits
 - 1998: 2 of East Manchester's electoral districts were among Top 20 on UK's National Index of Deprivation
- New East Manchester Ltd.
 - Partnership among city, UK government agencies and local community groups
 - Created multiple strategies to revitalize East Manchester's economy, increase employment, improve education and create high-quality housing
 - **Eastserve** project starting life in 2001 as a Web portal to strengthen social bonds



East Manchester, United Kingdom

■ Evolution of Eastserve

- Wired Up Communities program
 - Distributed 3,500 refurbished PCs
 - New PCs available at subsidized cost
 - Partnership with local credit union for low-cost loans
 - 3 hours of required computer training for participants
 - Free installation, 3 free months of dial-up access
- Set up 9 local ICT centers with free Internet access
- Investment in local schools: hardware, software and teacher training
- Eastserve portal providing online services and local content
- Eastserve wireless network linking homes, schools & ICT centers at affordable prices with no contract





East Manchester, United Kingdom



“The true impact of Eastserve is not about now but about in 20 years time.”
– East Manchester resident

■ Social impacts, 2001-2005

- PC ownership increased from 19% to 52% in 2005
- 70% of East Manchester residents have Internet access, compared with 55% national rate
- 55% of residents identified access to Eastserve online service as beneficial to improved communication with family and community
- Public Voice Media training program with BBC

■ Economic impact

- Credit union funding PC purchases became fastest-growing community credit union in the UK; for most customers, their first entry into banking services
- Creation of demand for PCs, online services and broadband

Community Metrics



Dakota County



Top Seven Intelligent Communities, 2006-2009

■ Bristol, Virginia

■ Northeast Ohio



France

■ Manchester, UK

■ Moncton, NB, Canada

■ Westchester County, New York

■ Winston-Salem, North Carolina

INTELLIGENT
COMMUNITY
FORUM





Intelligent Community Indicators

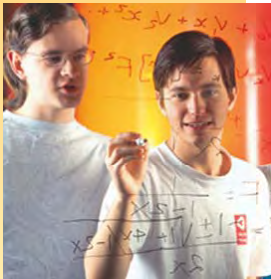


■ Broadband Deployment

- Enabling infrastructure of the Intelligent Community
- Only absolute metric: cost, availability, penetration

■ Knowledge Workforce

- Determination and ability to create a workforce qualified to perform knowledge work – creating economic value through the acquisition, processing and use of information
- From the factory floor to the research lab, the construction site to the call center or software company





Intelligent Community Indicators



■ Digital Inclusion

- Creating policies and programs to prevent those already marginalized – through income, education, age or geography – from being further excluded online
- Focusing on access to technology, affordability, skills training and motivating use



■ Innovation

- The new competitive advantage that outweighs geographic location and natural resources
- Building the innovation capacity of companies
- Encouraging the start-up and growth of new companies, which create all job growth
- Investing in e-government to increase efficiency, reduce costs and lead by example



Intelligent Community Indicators



■ Marketing and Advocacy

- Mobility of investment and talent challenges communities to compete
- Marketing the community's advantages to a global audience of businesses and talented people
- Advocating inside the community for a new vision of the future to create political will for change

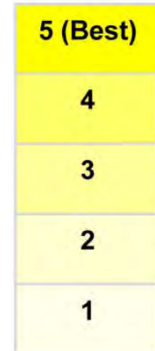
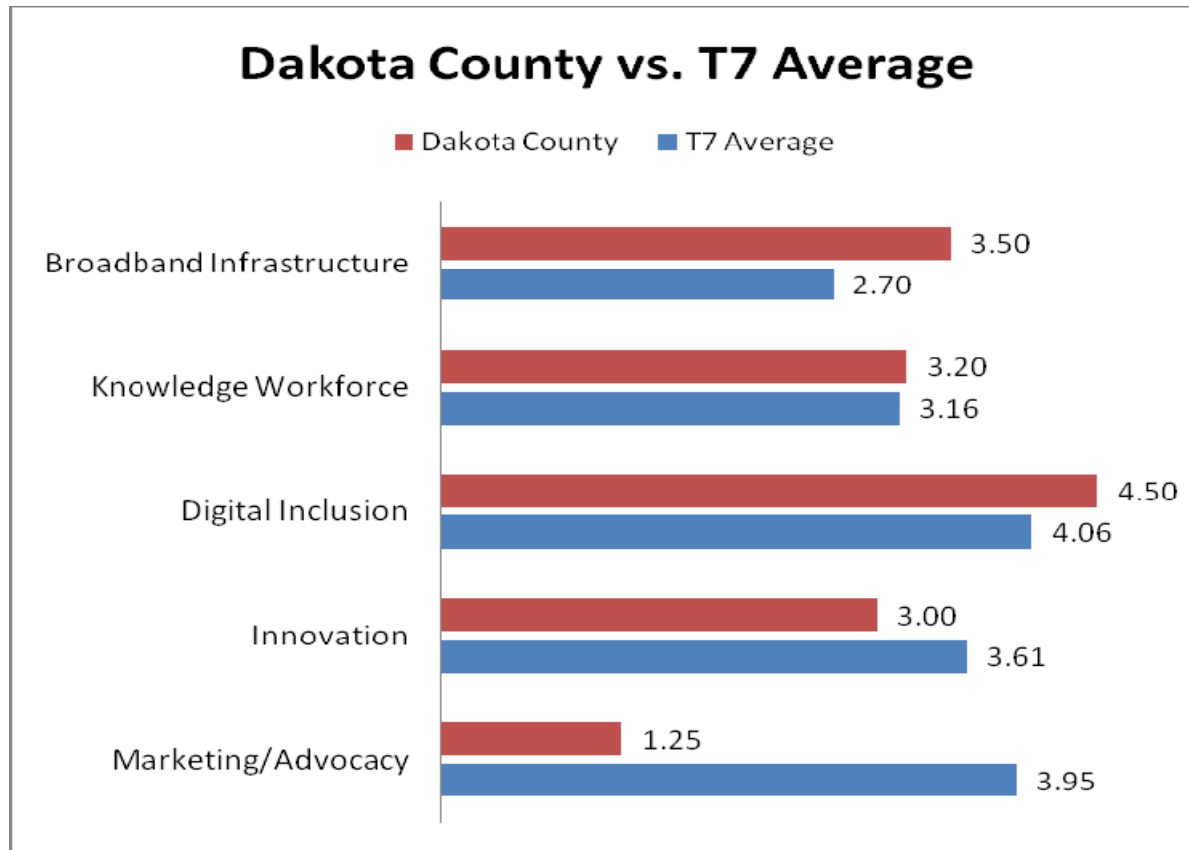


Intelligent Communities





Community Metrics Overview





Community Metrics

Broadband Deployment

- Dakota County is a strong performer, measured by
 - **Cost of the connection.** Globally competitive service with average monthly costs of \$15.66 per Mbps
 - Average cost per MBPS of 2009 Top Seven was \$37, with high of \$62 and low of \$12
 - **Accessibility and connectivity (penetration).** Scored higher than cumulative average score of the Top Seven, with
 - 74% penetration of households
 - 95% connectivity in government offices
 - 100% coverage of educational institutions

Overall Score

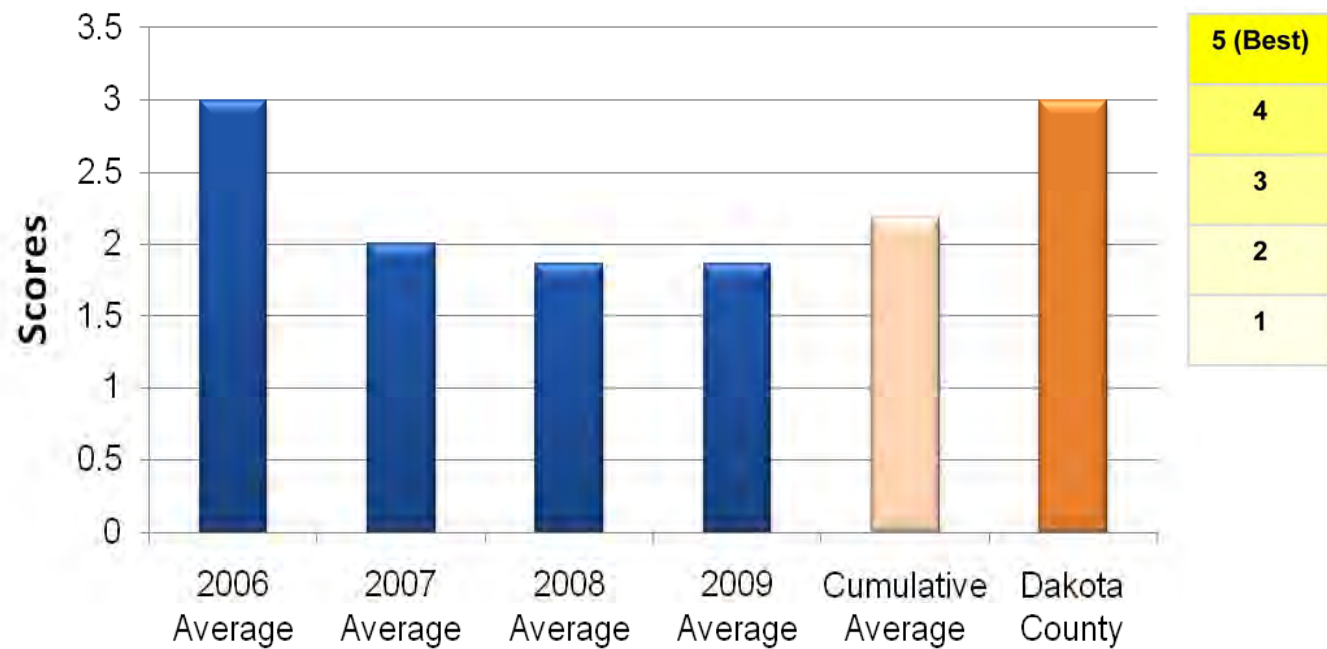
Top Seven Average	2.70
Dakota County	3.50



Community Metrics

Broadband Deployment

Cost of Connection



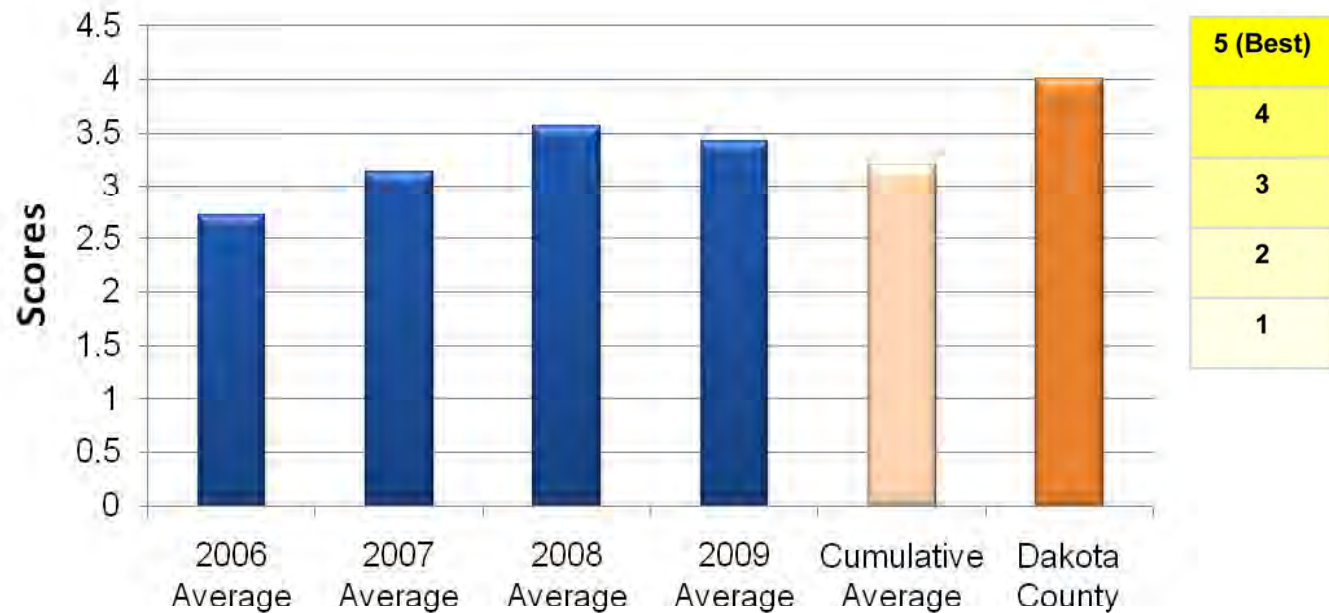
Cost of Connection Score	
Top Seven Average Score (2006-2009)	2.18
Dakota County Score	3.00



Community Metrics

Broadband Deployment

Accessibility & Connectivity



Accessibility & Connectivity Score	
Top Seven Average Score (2006-2009)	3.21
Dakota County Score	4.00



Community Metrics

Knowledge Workforce

- Total score exceeded Top Seven average by 1%
 - **Educational achievement.** Percentage of undergraduate or graduate degrees higher than six of 2009 Top Seven and all of 2008 Top Seven
 - But – low number of degrees awarded per year: < 1% of population, compared with typical 4-6% in Top Seven
 - To be recalculated based on access to “commuter schools”
 - **Knowledge-based employment.** Strong performance
 - Created total jobs in 3 years equal to 8% of population
 - More jobs depending on ICT than any 2009 Top Seven

Overall Score

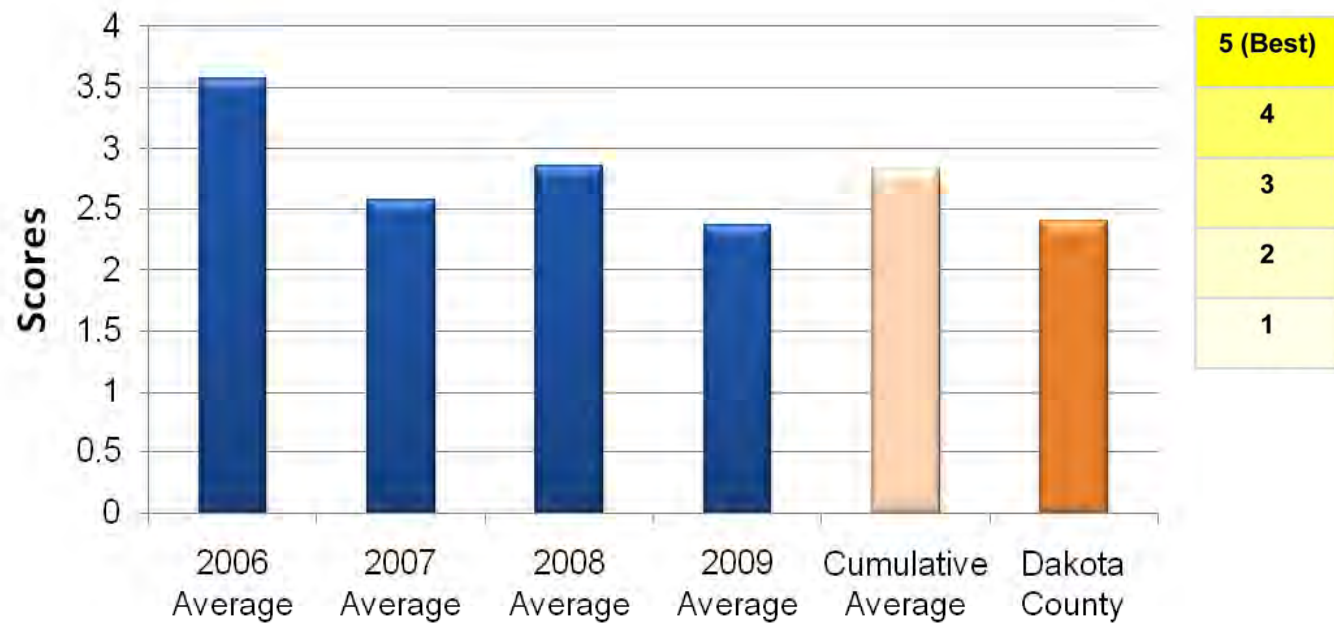
Top Seven Average	3.16
Dakota County	3.20



Community Metrics

Knowledge Workforce

Knowledge Workforce – Education



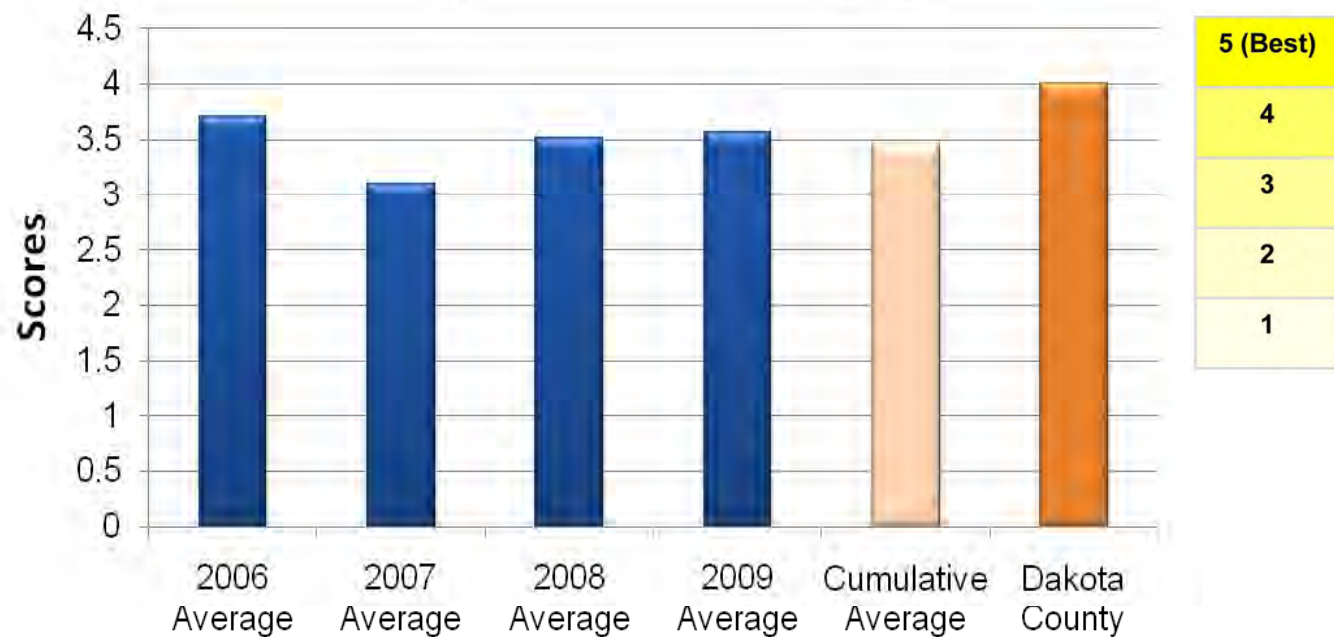
Educational Achievement Score	
Top Seven Average Score (2006-2009)	2.84
Dakota County Score	2.40



Community Metrics

Knowledge Workforce

Knowledge Workforce – Employment



Knowledge-Based Employment Score	
Top Seven Average Score (2006-2009)	3.47
Dakota County Score	4.00



Community Metrics

Digital Inclusion

- Total score exceeded Top Seven average by 11%
 - **Digital Inclusion Strategy.** Scored at par with the average of the Top Seven; four of 2009 Top Seven scored higher than Dakota County
 - Stronger strategies to provide free or affordable access, subsidy programs for computers, training programs
 - **Digital Inclusion Initiatives.** Top score for actual initiatives put into action
 - Installation of 220 computers in 10 public libraries
 - Workforce Centers offering training to working-age adults
 - Collaboration with colleges to extend access and training

Overall Score

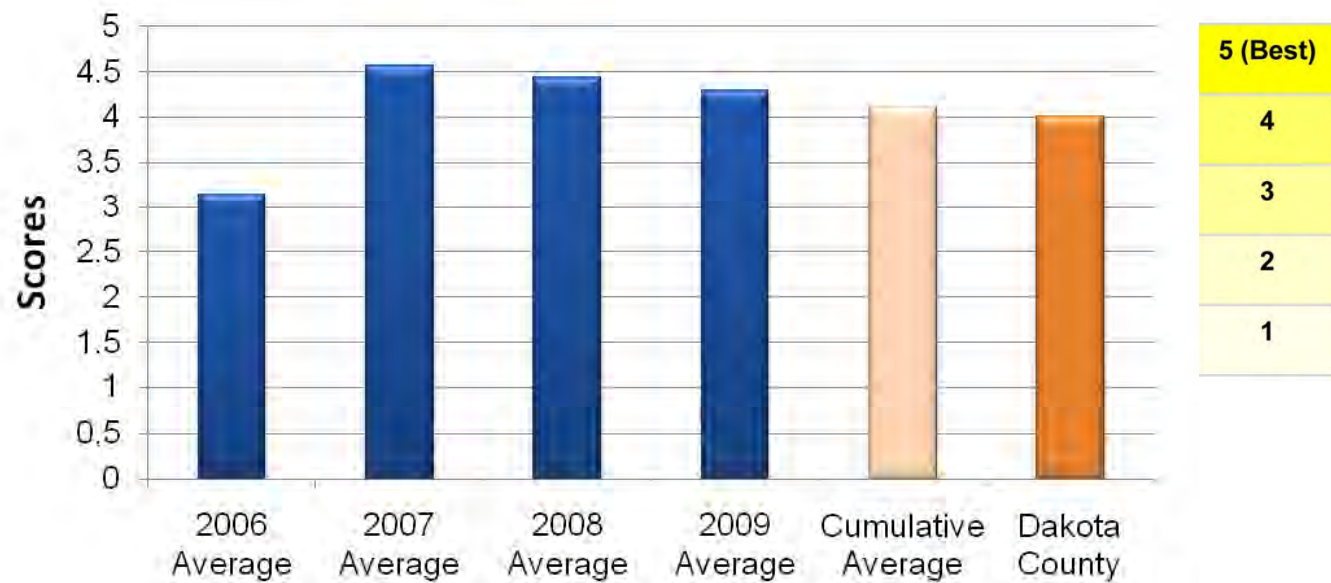
Top Seven Average	4.06
Dakota County	4.50



Community Metrics

Digital Inclusion

Digital Inclusion – Strategy



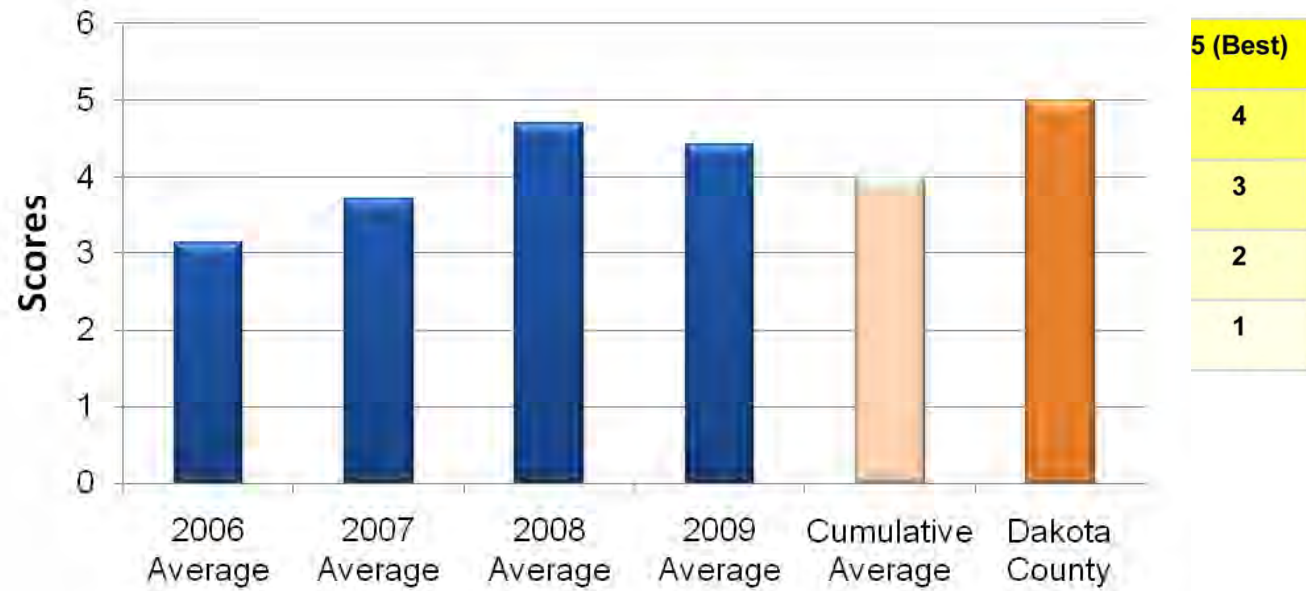
Digital Inclusion Strategy Score	
Top Seven Average Score (2006-2009)	4.11
Dakota County Score	4.00



Community Metrics

Digital Inclusion

Digital Inclusion - Initiative



Digital Inclusion Initiatives Score	
Top Seven Average Score (2006-2009)	4.00
Dakota County Score	5.00



Community Metrics Innovation

- Total score only 83% of Top Seven average
 - **Innovation Strategy.** Lack of formal strategy for encouraging public and private-sector innovation
 - Top Seven communities typically have innovation vision and strategy developed in collaboration among government, business and institutions
 - **Innovation Initiatives.** Strong performance in actual initiatives encouraging innovation
 - **Innovation Incentives.** Few financial incentives to spur innovation; private-sector viewed as only innovator
 - Top Seven typically use mix of targeted incentives and cultural (“peer pressure”) tools

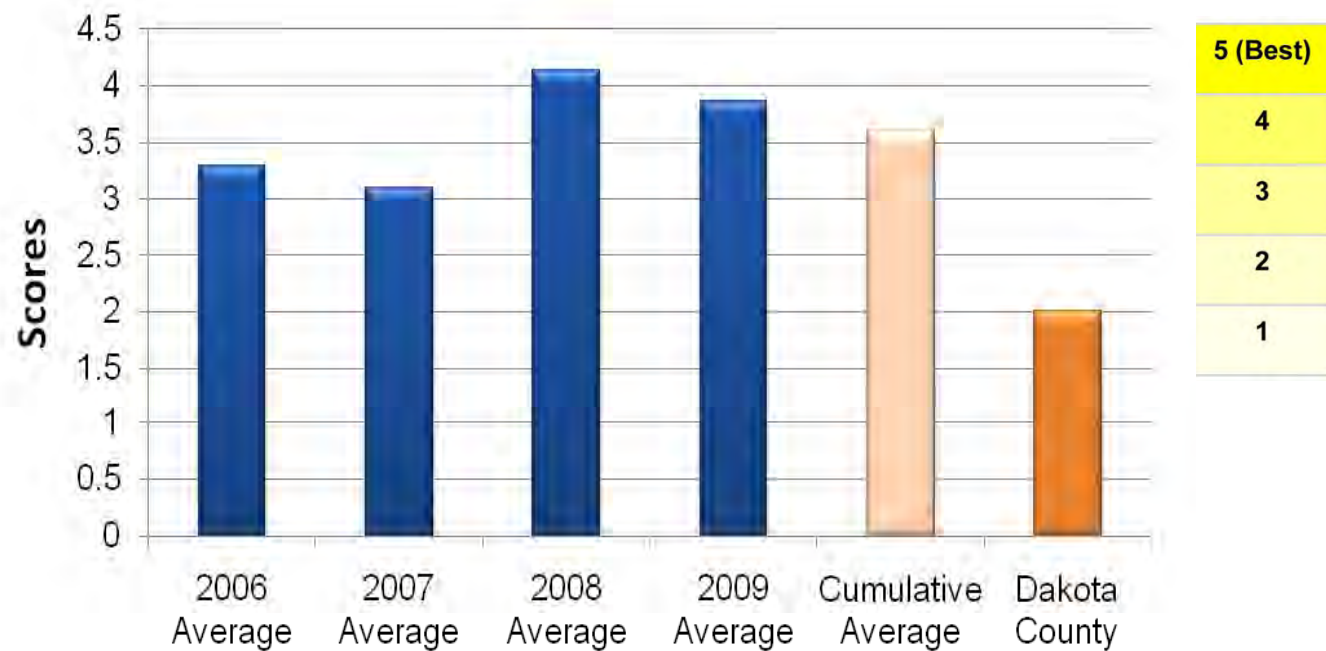
Overall Score

Top Seven Average	3.61
Dakota County	3.00



Community Metrics Innovation

Innovation – Policies

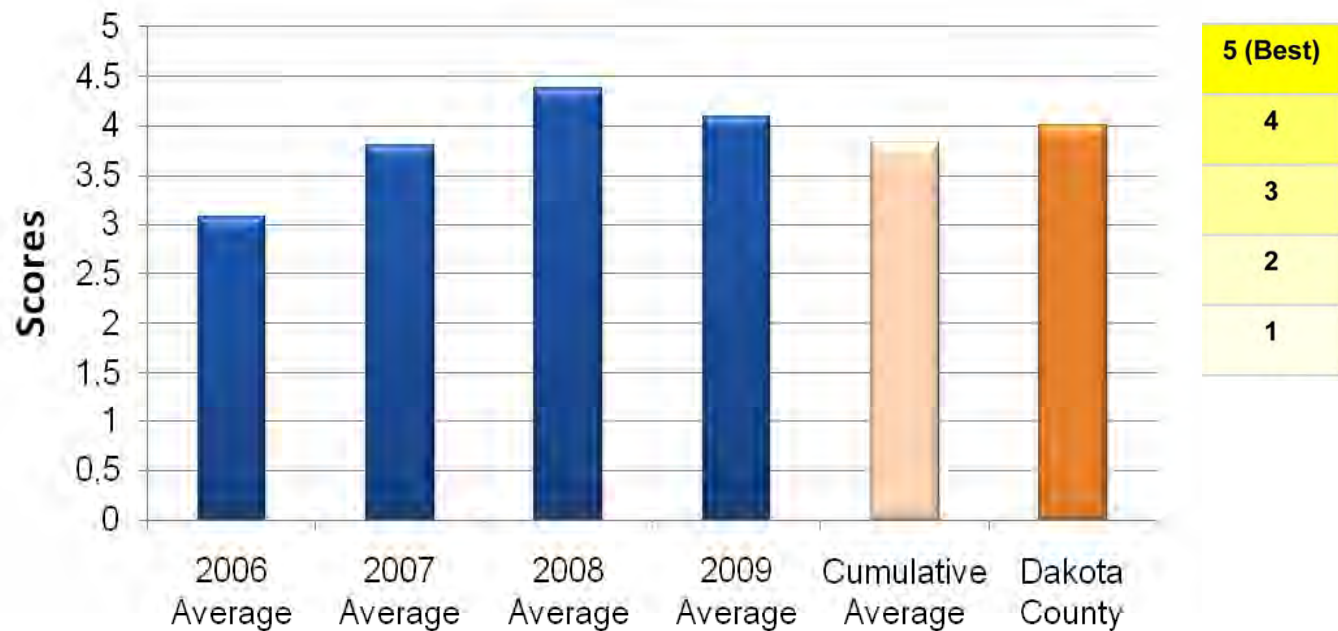


Innovation Strategy Score	
Top Seven Average Score (2006-2009)	3.60
Dakota County Score	3.00



Community Metrics Innovation

Innovation – Initiative

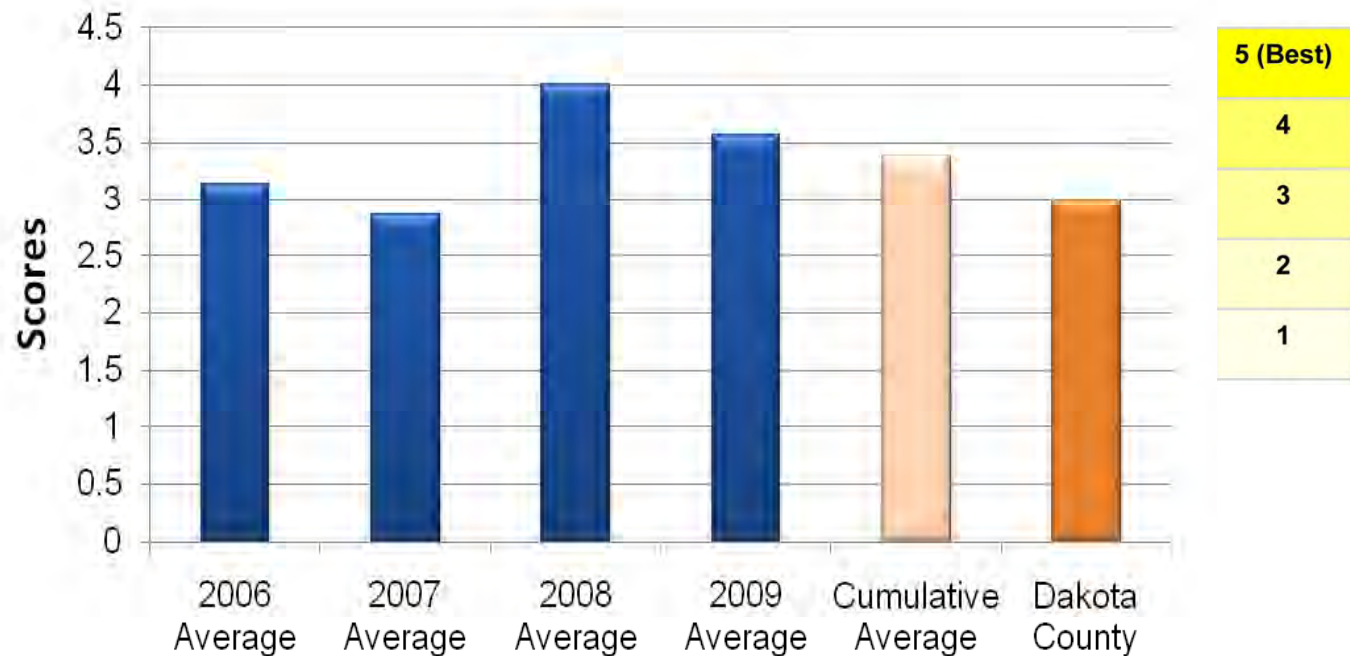


Innovation Initiatives Score	
Top Seven Average Score (2006-2009)	3.84
Dakota County Score	4.00



Community Metrics Innovation

Innovation – Incentive



Innovation Incentives Score

Top Seven Average Score (2006-2009) 3.39

Dakota County Score 3.00



Community Metrics

Marketing & Advocacy

- Lowest score of the five Indicators
 - **Marketing & Advocacy Strategy.** No reported county-level external marketing or internal advocacy strategy
 - Is there a “hidden” strategy?
 - **Marketing & Advocacy Initiatives.** Higher score for actual initiatives but still below Top Seven average
 - **Marketing & Advocacy Incentives.** No reported financial incentives to attract fast-growing businesses or nurture growth of existing businesses

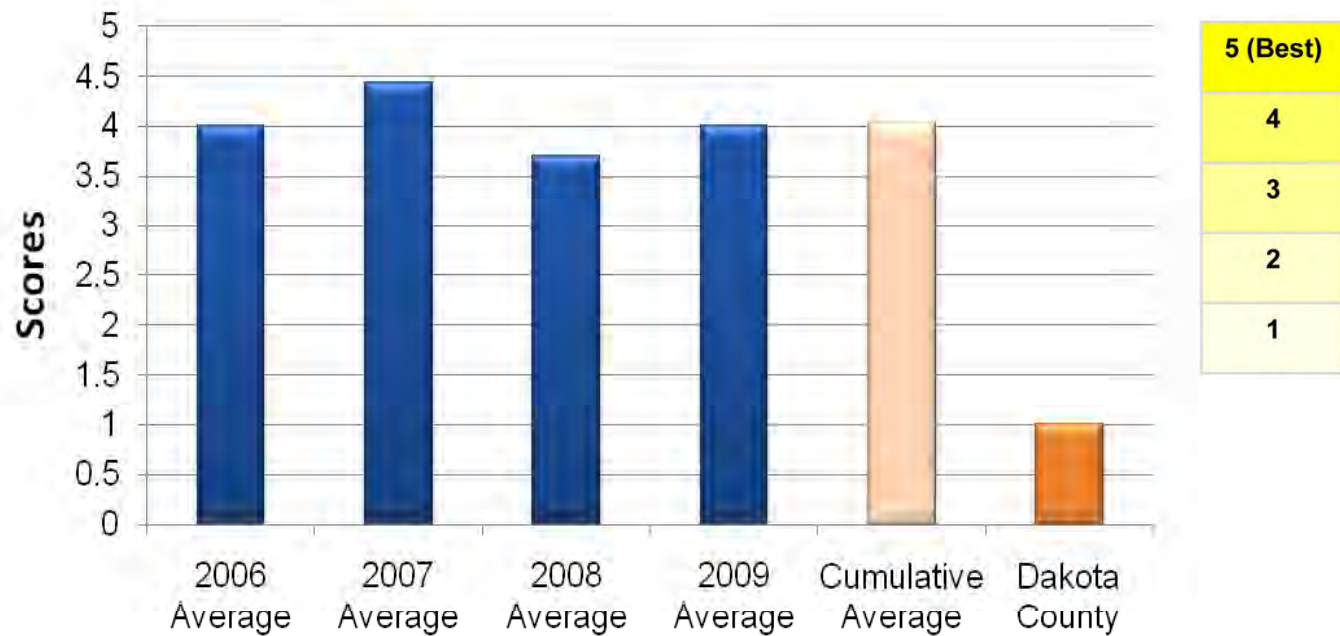
Overall Score	
Top Seven Average	3.95
Dakota County	1.25



Community Metrics

Marketing & Advocacy

Marketing – Strategy



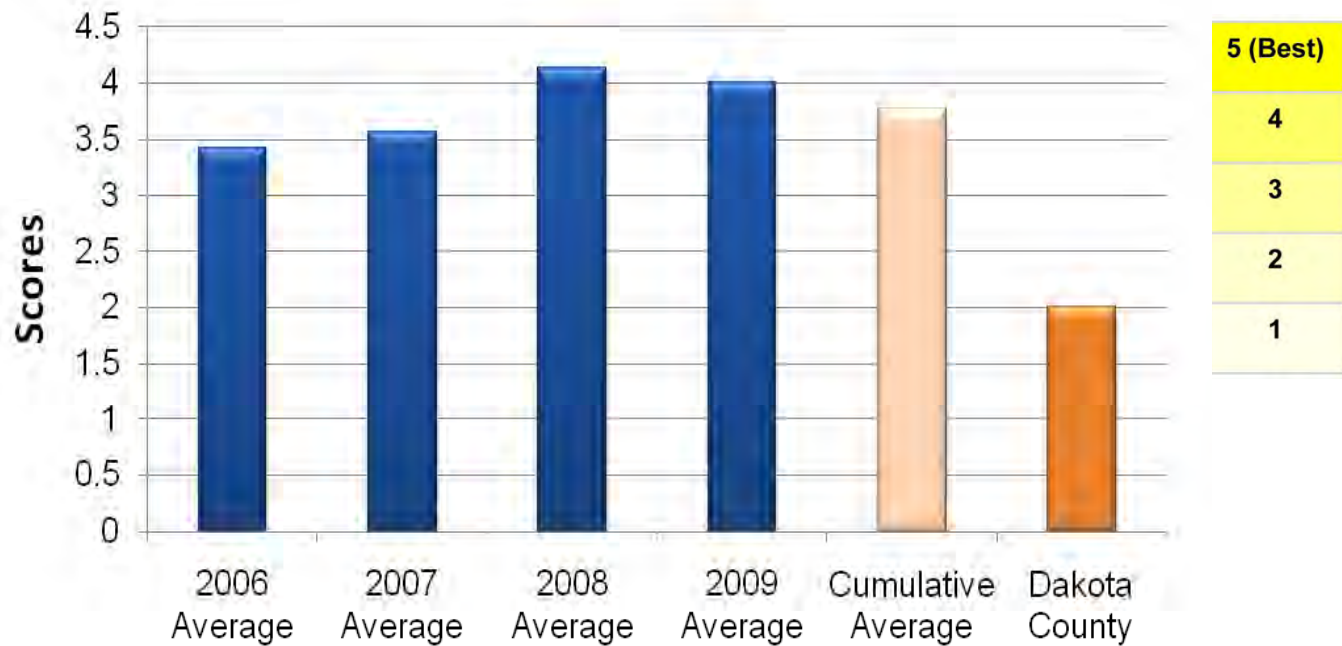
Marketing & Advocacy Strategy Score	
Top Seven Average Score (2006-2009)	4.03
Dakota County Score	1.00



Community Metrics

Marketing & Advocacy

Marketing – Initiative



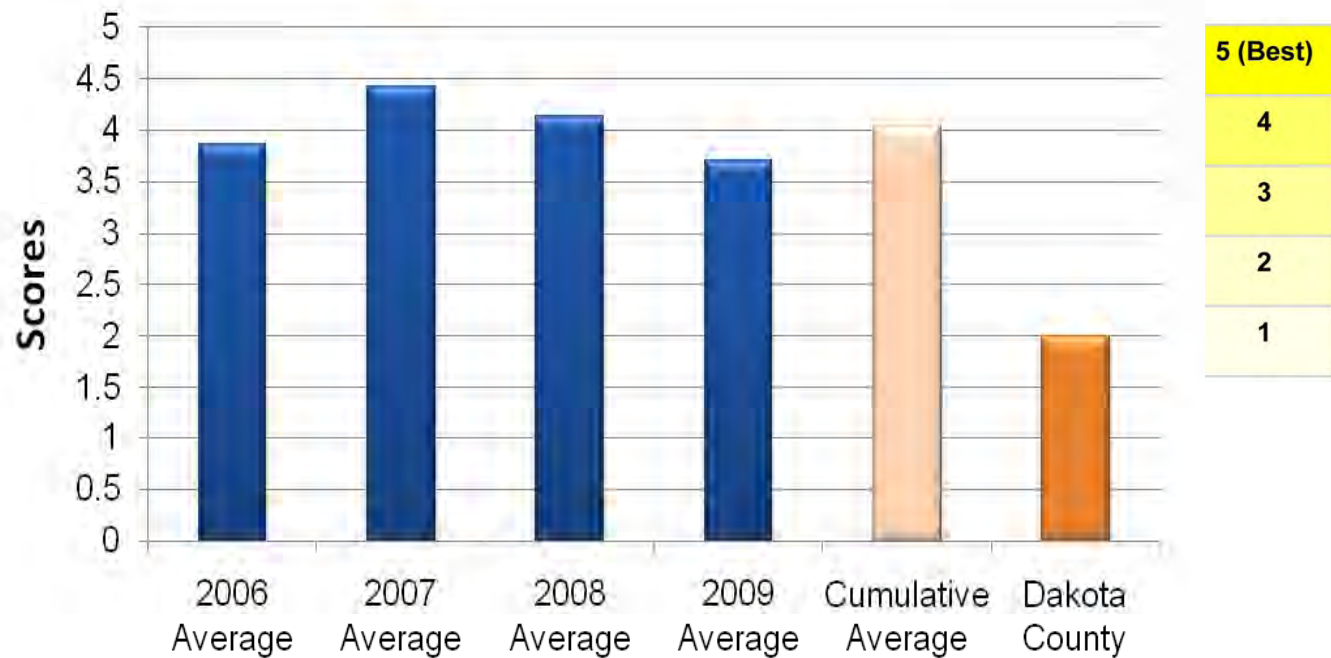
Marketing & Advocacy Initiatives Score	
Top Seven Average Score (2006-2009)	3.78
Dakota County Score	3.00



Community Metrics

Marketing & Advocacy

Marketing – Incentive



Marketing & Advocacy Incentives Score	
Top Seven Average Score (2006-2009)	4.03
Dakota County Score	2.00



Conclusions

■ Broadband Communications

- Dakota County **outperforms** the Top Seven Intelligent Communities – 130% of average score
- Well-served by commercial providers
- Are there “broadband gaps” that need to be address?

■ Knowledge Workforce

■ Digital Inclusion

■ Innovation

■ Marketing & Advocacy



Conclusions

- Broadband Communications - **outperforms**
- **Knowledge Workforce**
 - Dakota County **performs at par** with the Top Seven Intelligent Communities – 101% of average score
 - Number of new degrees awarded appears abnormally low
- Digital Inclusion
- Innovation
- Marketing & Advocacy



Conclusions

- Broadband Communications - **outperforms**
- Knowledge Workforce – **at par**
- **Digital Inclusion**
 - Dakota County **outperforms** the Top Seven Intelligent Communities – 111% of average score
 - Active in all methods for combating digital exclusion
 - Room to step up efforts targeting specific groups
- Innovation
- Marketing & Advocacy



Conclusions

- Broadband Communications - **outperforms**
- Knowledge Workforce – **at par**
- Digital Inclusion - **outperforms**
- **Innovation**
 - Dakota County **underperforms** compared with the Top Seven Intelligent Communities – 83% of average score
 - Active initiatives not matched by vision and strategy formed in collaboration among government, business and institutions
 - Avoidance of targeted incentives weakens performance
- Marketing & Advocacy



Conclusions

- Broadband Communications - **outperforms**
- Knowledge Workforce – **at par**
- Digital Inclusion - **outperforms**
- Innovation - **underperforms**
- **Marketing & Advocacy**
 - Dakota County **underperforms** compared with the Top Seven Intelligent Communities – 32% of average score
 - No stated strategy for external marketing and internal advocacy on county level
 - Higher score for actual initiatives put in place
 - Avoidance of targeted incentives weakens performance



Conclusions

- Broadband Communications - **outperforms**
- Knowledge Workforce – **at par**
- Digital Inclusion - **outperforms**
- Innovation - **underperforms**
- Marketing & Advocacy - **underperforms**

Accelerating Your Community

Dakota County



Robert Bell

Co-Founder

www.intelligentcommunity.com

