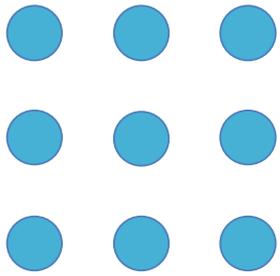


The Rural Imperative For A New Connected Countryside



Building the
community of the
21st Century

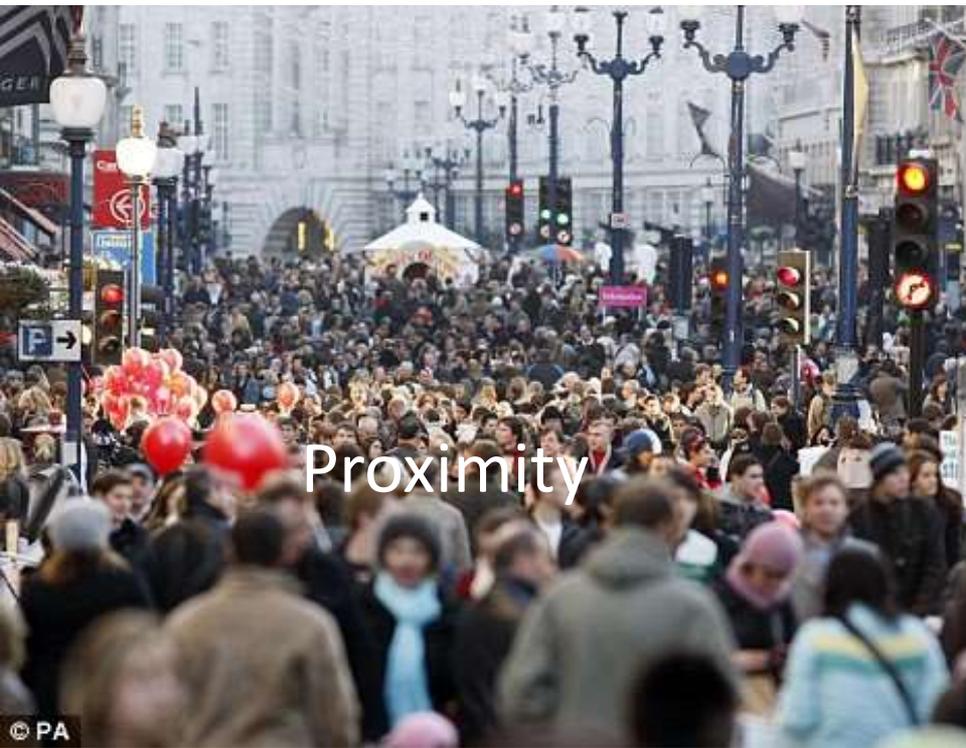
Norman Jacknis
ICF Senior Fellow
August 13, 2015



Long Term Trends In The Economy

With Industrialization, Rural Areas Seem To Have Lost Out To Urban Areas

"Wisely or not, Homo sapiens has become Homo urbanus," says the UN, forecasting that 2/3 of world's population will live in cities by 2030.



What Leads To Economic Growth?

- **Specialization of the skills of people so everyone is producing the most for society**
- **Creation of new knowledge and innovations**
 - Which results in new products/services or enhances productivity in producing existing products/services
- **These, in turn, depend upon communications and collaboration among many, diverse people**
- **In the 20th century age of industry, cities put many people in close proximity which enabled better communications and collaboration**
 - Which made cities the engines of economic growth

“If I can make it in New York, I'll make it anywhere”



“Today, 36 percent of daily trades in stocks that are listed on the New York Stock Exchange are actually executed on the exchange, down from about 75 percent nearly four years ago. The rest of are conducted elsewhere, on new electronic exchanges ... half of the jobs there have disappeared over the last five years ...

“Unlike the Big Board, the new electronic exchanges are virtually unknown outside financial circles. Direct Edge, the largest, is in Jersey City. Another, the BATS Exchange, is based in Lenexa, Kan [picture above]. Both are only about five years old. But each now accounts for about a 10th of daily United States stock trading. “ – *October 15, 2009 New York Times Front News Page*

Wall Street, New York, New York, USA



Lenexa, Kansas, USA



Downtown Lenexa



NYSE betting on future as party space

AP Associated Press



AP – This artist rendering provided on Tuesday, March 22, 2011 by the New York Stock Exchange shows the proposed ...

Seeking to capitalize on its iconic status in American life, the New York Stock Exchange is getting into the business of parties and meetings.

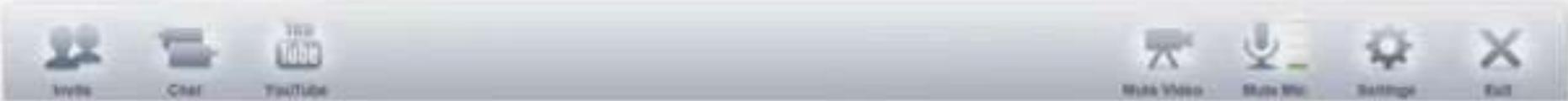
By DAVID K. RANDALL, AP Business Writer – Fri Apr 8, 2011 Miami Herald

NEW YORK – What do you do when a cathedral of capitalism becomes antiquated? You turn it into New York's best party space.

The New York Stock Exchange has lost most of its famous shoulder-to-shoulder bustle in the age of computerized trading. So it's hoping its status as an icon of American finance will be a popular draw for cocktail receptions, analyst presentations and other festivities.

Two Intertwined Trends Are Changing The Economy (And Work)

- **Many people will be providing digital goods or services**
 - For example, the American workforce has already shifted from 1900 (71% made food or physical goods) to 2000 (79% provide services)
 - Digital goods and services require knowledge and innovation
- **Increasingly, we will live in a world of ubiquitous, high quality visual communication and easy collaboration, enabling anyone anywhere to virtually meet anyone else anywhere else**







20th Century Industrial Economy

21st Century Digital Economy

Cities put people in close proximity that led to collaboration, innovation and growth

Physical proximity is no longer the only way for people to collaborate & Innovate

Work was tied to an office, factory, store and employees were not mobile

Work goes to people and they are more able to move where they wish

Businesses clustered to get necessary services & talent locally

Businesses no longer need to cluster and find global sources of services & talent

Big companies concentrated employment

Big companies are more disaggregated; smaller enterprises hire more

Economic Hunting strategy, including the use of incentives to big companies to move jobs

Economic Gardening strategy to develop local companies instead of ever weakening incentives to attract outsiders

Big organizations provided the connections people needed to collaborate on a massive scale

The Internet makes it possible for people to collaborate on a global scale

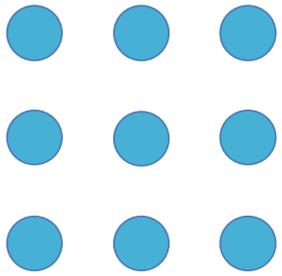
Education was for youths, usually no older than about 22

Learning is a lifelong requirement for almost every worker

The Laws Of Economics Won't Change

- Differentiation of the skills of people so everyone is producing the most for society
- Creation of new knowledge and innovations
 - Which results in new products/services or enhances productivity in producing existing products/services
- These, in turn, depend upon communications and collaboration among many, diverse people

What changes is that physical proximity will no longer be the only or dominant way to connect people

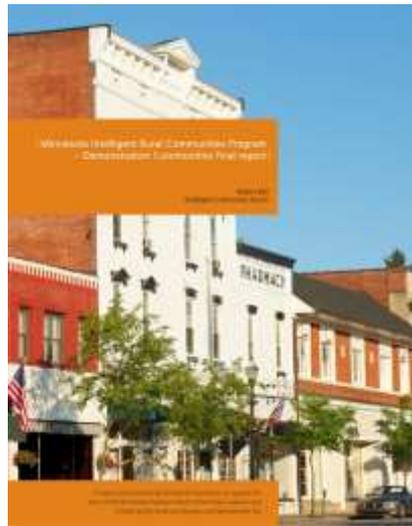


Why It's Time To Create A New Connected Countryside

The Game Starts Over In This Century — With Different Rules

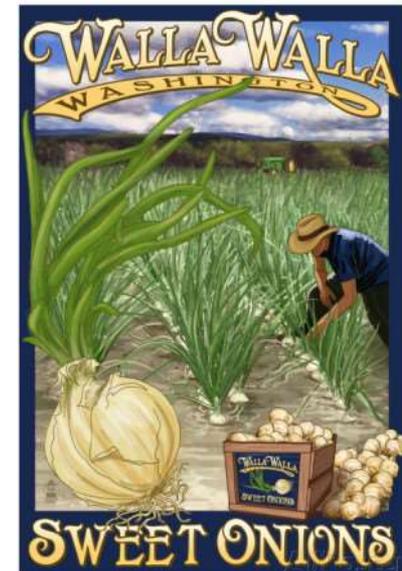
- **There is now an unprecedented opportunity for the countryside**
- **Broadband offers the opportunity to eliminate the feeling of being in the “middle of nowhere”**
- **Rural communities can thrive as dynamic and exciting places to live, work and start a business — while maintaining their quality of life**
- **There is a future after the past has left**

ICF Rural Areas Are Leading The Way



Minnesota Intelligent Rural Communities Project

11 rural towns and counties investing in economic, social and cultural development based on broadband



To Greater Employment

Bristol, Virginia (p. 17,000)

New jobs entering the “broadband economy” pay +67% more than average weekly wage.



Mitchell, South Dakota (p. 15,000)

Fiber-to-the-premise network created new industries: precision farming, software, data & customer service centers, communications consulting.

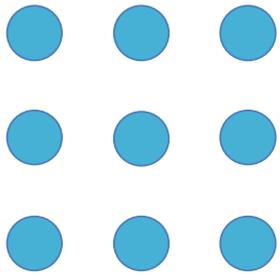
Broadband Internet Has Already Paid Off From 2001 To 2010

- **Rural counties in USA with +60% broadband adoption...**
 - Had higher growth in median household income
 - Much slower growth in unemployment during recessions
- **Rural counties with -40% broadband adoption...**
 - Had lower growth in total employment and number of employers

“Broadband’s Economic Impact,” *The Daily Yonder*

Broadband Is Necessary, But Insufficient

- **ICF communities have learned that deploying broadband itself will not be transformational**
 - It may not even be adopted by many of the people who could obtain broadband Internet
 - Broadband Internet will only be widely adopted if combined with community building and vision
- **Broadband Internet can enable and must be tied in with all the other aspects of community development**
 - What can broadband Internet make possible? ...



What Does Broadband Internet Make Possible?

Connecting Residents To Global Economic Opportunities & Services



Transforming the Way the World Learns English

"I think that [Eleutian's] video-conferenced English classes will not only supplement the current native English-speaking teacher system in Korea, but may actually replace it in the future."

Ji-Hye Hwang, Korean Ministry of Education

The Global Leader in Online English Teaching

Headquartered in rural Ten Sleep, Wyoming, Eleutian Technology operates 9 teaching-centers throughout the Western United States which are open for business 24 hours a day, 7 days a week. As the largest new job creator in the region, Eleutian employs over 300 U.S. Certified School Teachers.

Working from local call centers, group and private teaching sessions are broadcast via high-speed fiber optic networks and state-of-the-art video technology. Our customers include public education systems and schools throughout the world as well as globally focused corporations and organizations.

Even Connect Low-Tech Business To The Global Economy



Government of Nova Scotia



Broadband for Rural Nova Scotia

Economic and Rural Development and To

HIGH SPEED FOR BUSINESS

HIGH SPEED FOR FAMILIES AND STUDENTS

HIGH SPEED FOR COMMUNITIES

BROADBAND FOR

Connect to Compete

D & K Bait Bags

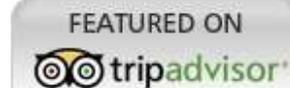
Local: 1-902-226-1658
Toll Free: 1-888-560-9933

The advertisement features the company name in large red letters, images of a lobster and a crab, and contact information. The background shows a harbor scene with boats and buildings.

Main Menu

- [Home](#)
- [Custom Hammocks](#)
- [Hammocks](#)
- [Hammock Swings](#)
- [Accessories](#)

Site RSS Feeds



[Please write a review](#)

Custom Hammock at Alexander Wang Shop in New York City



As we hand make every hammock we get a lot of interesting requests for **custom hammocks**. We try to fill them all and you will find them in many unusual spots. This application, at the Alexander Wang flagship shop in New York City is one of our favourites.



Business Support Services Become Accessible Around The Globe

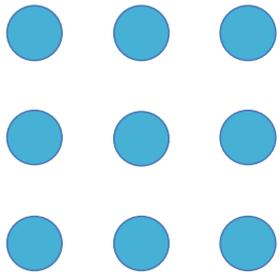
Business support services have become within reach of people in more locations than in the past ...
Between any other part of the globe and people here



Connect Entrepreneurs To The Flow Of Capital



- Capital is flowing more freely around the globe
- Make sure your entrepreneurs are connected to these sources of funds
 - New forms of investment



What Does Broadband Internet Make Possible?

Connecting Residents To Lifelong Learning In A Knowledge Economy

edX



- EdX is available to anyone in the world with an internet connection

- Online learners who demonstrate mastery earn a certificate of completion, issued by the "X University" from where the course originated, i.e., HarvardX, MITx or BerkeleyX

Coursera

coursera

[Courses](#) [Partners](#) [About ▾](#) | [Login](#) [Sign Up](#)

Take the world's best courses, online, for free.



Join 3,745,230 Courserians.
Learn from 378 courses, from our 81 partners.

[How it works »](#)

Georgia Inst

RECENT NEWS

[View blog »](#)



[10 US State University Systems &](#)

August 13, 2015



[Professional Development:](#)

© 2015 Norman Jacknis, Senior Fellow, ICF. All rights reserved



[29 New Schools, 92 New](#)



[Five courses receive college](#)

29



TED Ed Lessons Worth Sharing

Series

Subject

Best Flips

SCHOOLS

All

Culinary Arts

Design

Entrepreneurship

Fashion & Style

Photography

Technology

Writing

Learn almost anything for free.



Join vimeo

Switch On The Code Tutorials 

Public Libraries Are A Cost-Effective Guide To Global Innovation

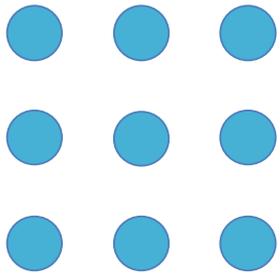
- Many libraries have organized the vast amount of free training and courses online in a range of subjects from business knowledge to technical skills
- The reference librarian has become the corporate librarian for entrepreneurs and other innovators
 - Helping to conduct market research, identify opportunities...

ASK a Librarian
Real People. Real Help. Real Facts!



*Chattanooga
Public Library
4th Floor*





What Does Broadband Internet Make Possible?

Connecting Residents To Innovation

Connect Entrepreneurs To Research At Great Universities

- Many public leaders are trying to recreate Stanford, MIT, Princeton and the like in their areas
 - And they are trying to find some secret way of “commercializing” the research at their local universities
- But no single university has a monopoly on knowledge
- Much of the best university research from everywhere is available through the Internet
 - And many entrepreneurs already have the skills to commercialize research, as long as they can find that research

Innovation Is A Collaborative Act

“That is how innovation happens ... chance favors the connected mind.”

**– Steven Johnson,
Where Good Ideas
Come From**

"The secret to creativity is knowing how to hide your sources."

– Albert Einstein



*“I get my best ideas in airports,
peeking at other people’s laptops.”*

17th Century Coffee Houses As Hubs Of Innovation ...

STEVEN
JOHNSON

WHERE GOOD IDEAS
COME FROM

THE NATURAL
HISTORY OF
INNOVATION

FROM THE BESTSELLING
AUTHOR OF *EVERYTHING
BAD IS GOOD FOR YOU*
AND *THE INVENTION
OF AIR*



In This Century ...



- People with new ideas no longer need to meet in coffee houses
- They can innovate and collaborate and share knowledge on the Internet
- The old “liquid network” of coffee house discussions is now the global communications network

Why Would A Company Want Open Innovation?



- **“P&G employs 7,500 people in its R&D division, but there are 1.5 million scientists throughout the world with expertise in P&G’s areas of interest.” — *Larry Huston, Procter & Gamble’s former VP of R&D***
- **“More than 50% of P&G innovation comes from external companies of all sizes and from individual entrepreneurs too.”**

Opportunities In The Open Innovation Movement



HENKEL INNOVATION CHALLENGE³

Collaboration in Action: i-Prize

Cisco I-Prize

Your Inspiration. Our Global Resources.

Cisco is looking for its next major business opportunity with your ideas for the I-Prize solution. Compatible for the Cisco I-Prize - individuals with strong entrepreneurial potential, global reach and ideas will have a chance to win the opportunity of a lifetime.

- 1200 ideas
- 104 countries
- 12 finalists



Want to Solve Challenges and **Win Awards?**



$$F = \frac{Gm_1m_2}{d^2}$$

$$E = MC^2$$

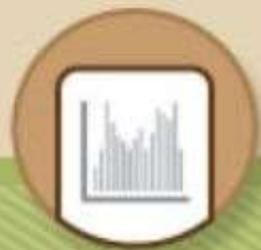
$$f(x)$$

$$\left(1 + \frac{1}{n}\right)$$

$$Ax = Ab$$

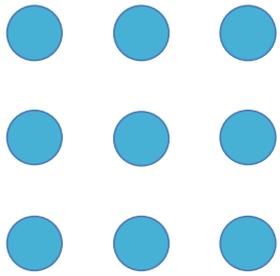
[Learn more »](#)

INNOCENTIVE®
where the world innovates



ChallengeBulletin





What Does Broadband Internet Make Possible?

Connecting Residents To World Class Healthcare

Health Maintenance For Seniors Who Are Generally Healthy



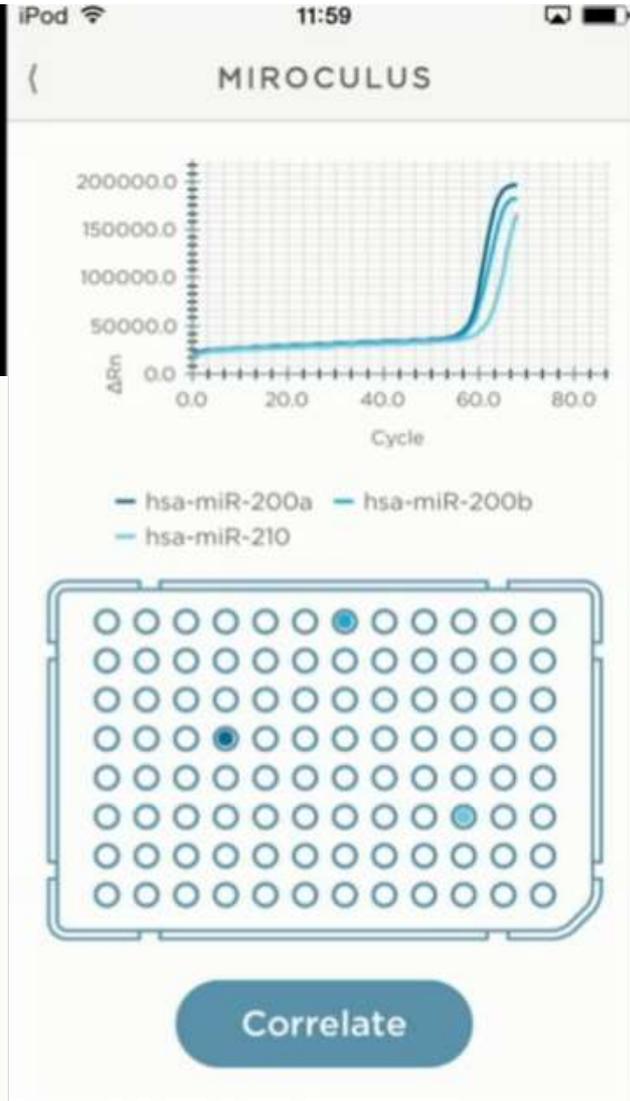
Vermont Telecare for Rural Health Project

- **Two-way interactive exercise class for seniors.**
- **"We know that exercise is helpful for senior patients, but we can't get to them. And we know that Tai Chi helps keep seniors healthy, increases their well-being and balance."**

Health Maintenance For Chronic Diseases



Advanced Diagnosis Anywhere



iPod 12:00

MIROCULUS

There's a 100% match between this pattern and Pancreatic Cancer according to the journal 'Cancer res. 70(13):5226-37'

Title: Pancreatic cancers epigenetically silence sip1 and hypomethylate and overexpress mir-200a/200b in association with elevated circulating mir-200a and mir-200b levels.
Author: Li A et al.
Both mir-200a and mir-200b were significantly elevated in the sera of pancreatic cancer and chronic pancreatitis patients compared with healthy controls ($p < 0.0001$).

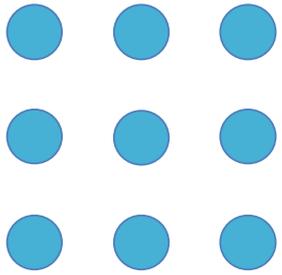
Remote Diagnosis



Robotic Surgery



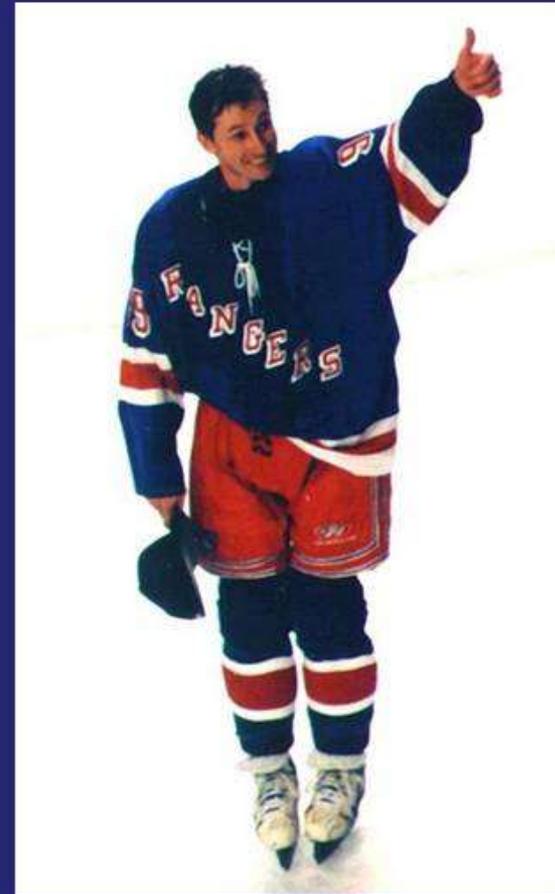
Becomes remote surgery



Going Forward

A good hockey player plays where the puck is.

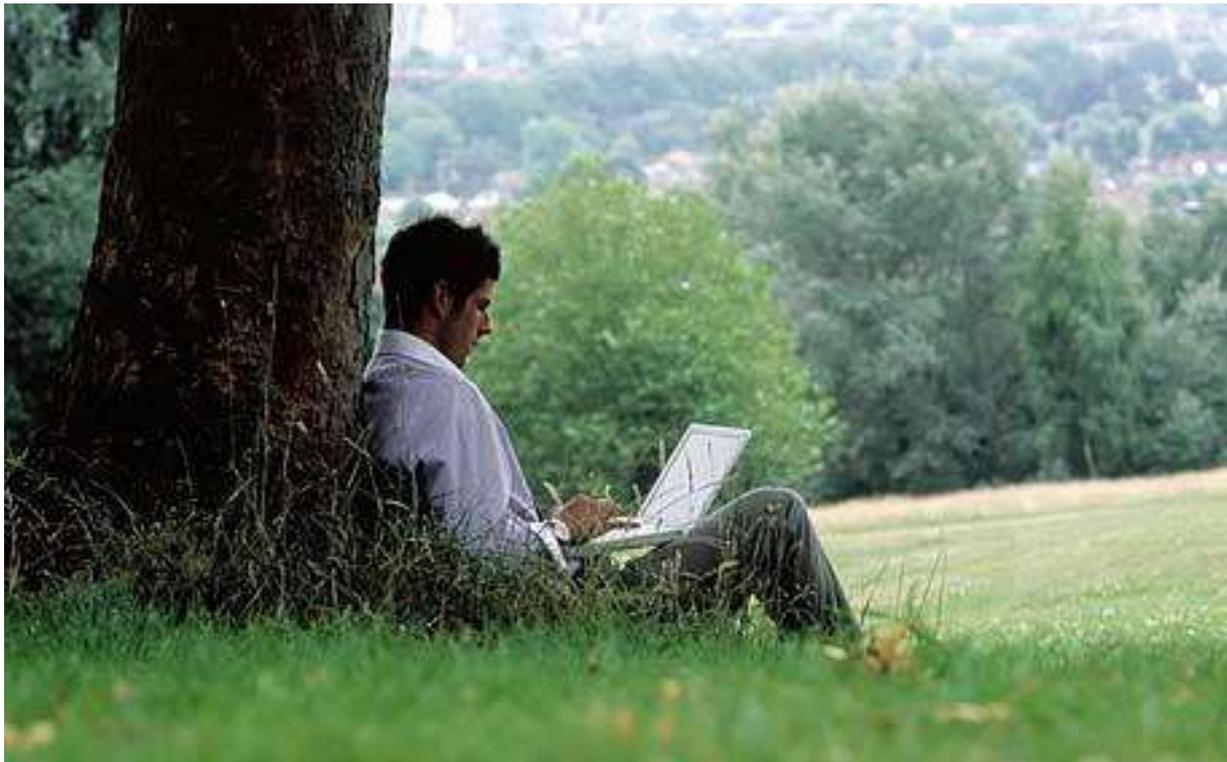
A great hockey player plays where the puck is going to be.



Wayne Gretzky

This Is The Key Question For Economic Strategy In Future Decades

When most people can work anywhere, where will they choose to live & work?



The Transition To The Future

- **Laying a foundation for a flourishing future takes time, so there are important things to do today to start**
- **Plan for the future way that most people will live and earn their income**
- **Provide people a quality "experience" so they stay**
 - **Find the uniqueness of your community and build on it**
 - **Ensure they have access to all of the life services they will need in a connected world – learning, health, economic opportunity, culture, community**
- **The transition to the future won't be smooth, but it's going to happen anyway**



**Building the
community of
the 21st Century**

Thank You!

Dr. Norman Jacknis
+1 (914) 930-4840
njacknis@intelligentcommunity.org
Blog: njacknis.tumblr.com
Twitter: @NormanJacknis

