

THE INTELLIGENT COMMUNITY MOVEMENT

THE FUTURE IS IN YOUR

ROW

Time to Talk

Deer Creek Golf & Banquet Facility
Wednesday, October 30, 2019
rowmanagement.ca



**John G. Jung, Chairman and Co-Founder
Intelligent Community Forum**
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www.icf-canada.com





Think Tank



Institutes



Global Network – ICFF
Member Association



ICF Nations

Introduction to the Intelligent Community Forum (ICF)

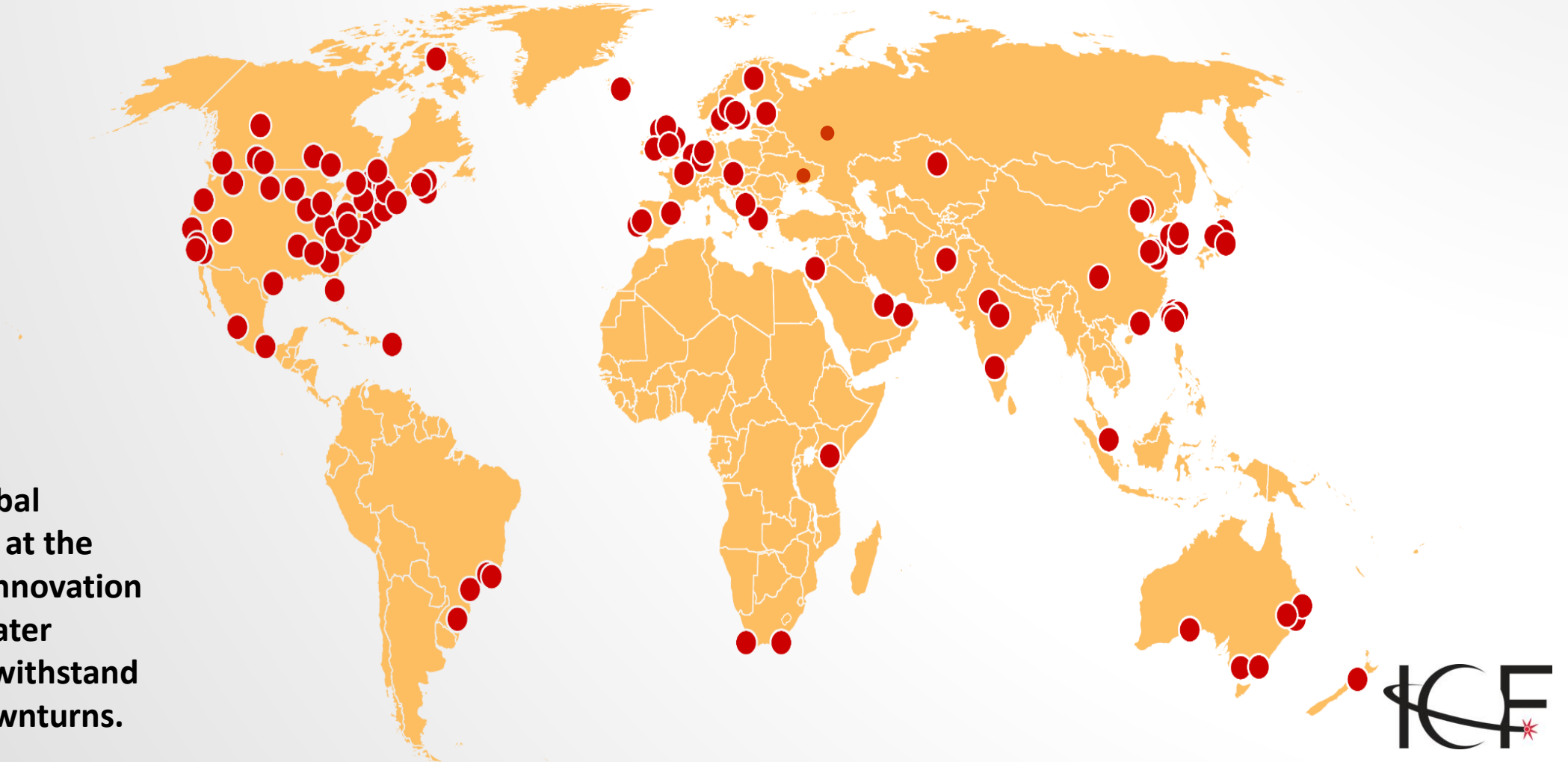


ICE NATIONS



ICF Intelligent Communities

1999 - 2019



Over 180 Global examples are at the forefront of innovation and have greater resilience to withstand economic downturns.



ICF Intelligent Communities

Top 7 Intelligent Communities 2019

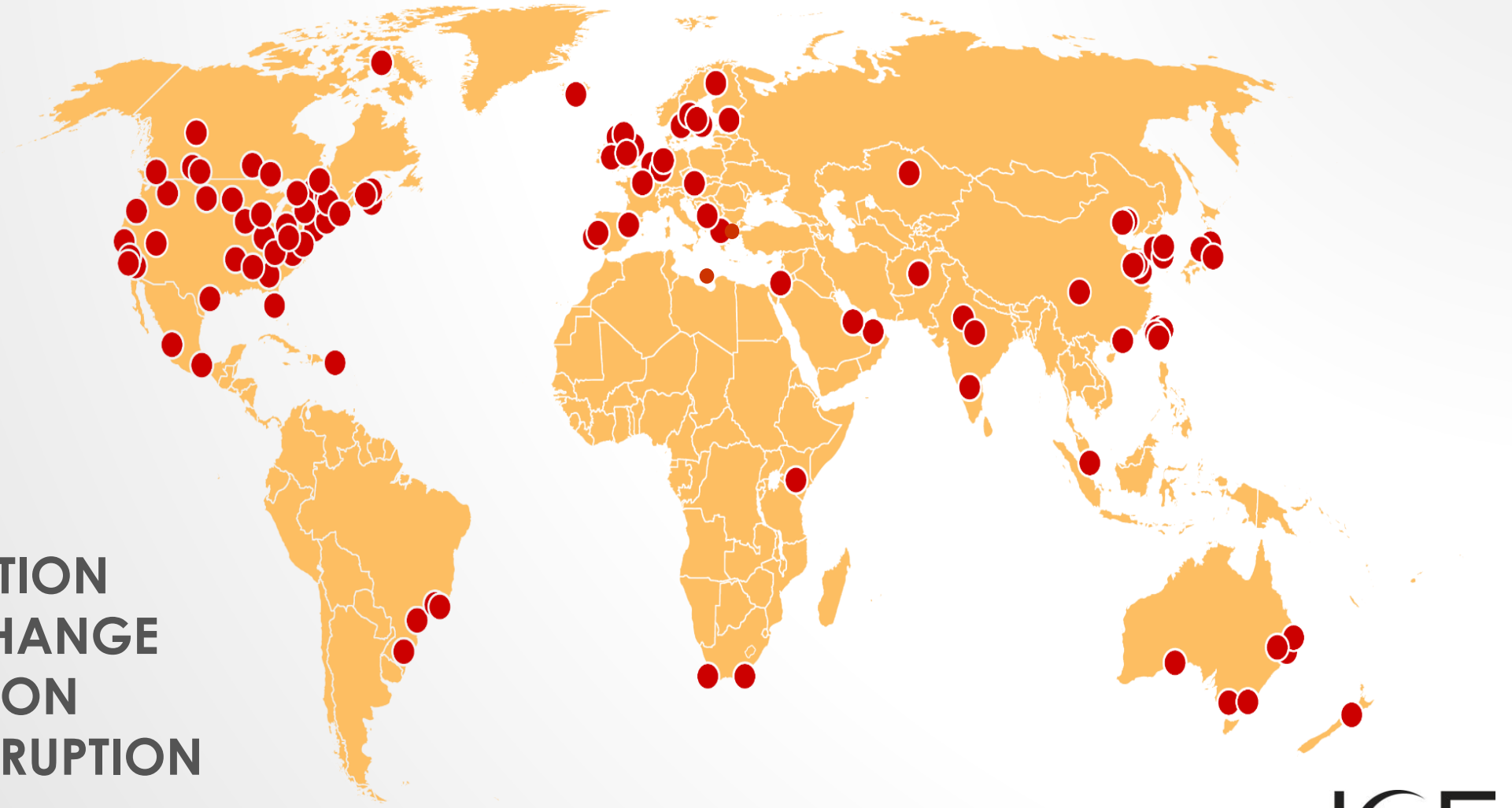
TOP7
**INTELLIGENT
COMMUNITIES**

- **Abbotsford, Canada**
- Chicago, USA
- Hudson, Ohio, USA
- **Sarnia Lambton, Canada**
- Sunshine Coast, Australia
- **Taoyuan, Taiwan**
- Westerville, Ohio, USA

INTELLIGENT COMMUNITIES SHARE THEIR SOLUTIONS

COMMON CHALLENGES:

1. GLOBALIZATION
2. CLIMATE CHANGE
3. URBANIZATION
4. DIGITAL DISRUPTION



INTELLIGENT COMMUNITIES SHARE THEIR SOLUTIONS

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1. **GLOBALIZATION**
2. CLIMATE CHANGE
3. URBANIZATION
4. DIGITAL DISRUPTION



Political
Social/Cultural
Economic

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Price tag: USD\$ 140 billion per year to make the changes humanity needs to adapt to a warming world (0.1% of global GDP).



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2. **CLIMATE CHANGE**
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UN's New Climate
Economy Report:
USD\$26 Trillion
Economic
Opportunity



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68% of the world population projected to live in urban areas by 2050



INTELLIGENT COMMUNITIES SHARE THEIR SOLUTIONS

COMMON CHALLENGES:

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2. CLIMATE CHANGE
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4. **DIGITAL DISRUPTION**



The most disrupted industries affected by customer wants & demands over the next 3-5 years:

- ① Financial, Banking & Insurance
- ② Retail, Shopping and ecommerce
- ③ Automotive, Logistics & Transportations
- ④ Health Care, Pharma & Biotech
- ⑤ Education & Learning
- ⑥ Media & Entertainment
- ⑦ Government & Public Service
- ⑧ Professional, Business and Legal Services
- ⑨ Energy & Utilities
- ⑩ Agriculture & Food

Source: Wikibrands Customer Zeitgeist, 2018

INTELLIGENT COMMUNITIES SHARE THEIR SOLUTIONS

COMMON CHALLENGES:

1. GLOBALIZATION
2. CLIMATE CHANGE
3. URBANIZATION
4. **DIGITAL DISRUPTION**



THE FIVE STAGES OF DISRUPTION

1



THE KODAK
MOMENT

2



INTERNET
INFRASTRUCTURE

3



DISRUPTIVE
BUSINESS MODELS

4



IIOT AND ARTIFICIAL
INTELLIGENCE

5



THE ADOPTION
CURVE

INTELLIGENT COMMUNITIES SHARE THEIR SOLUTIONS



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Top 10 Strategic Technology Trends for 2019

Intelligent

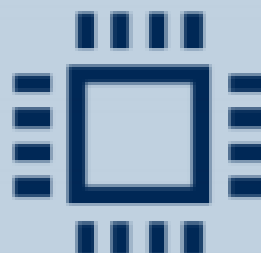


Autonomous Things

Augmented Analytics

AI-Driven Development

Digital



Digital Twins

Empowered Edge

Immersive Experience

Mesh

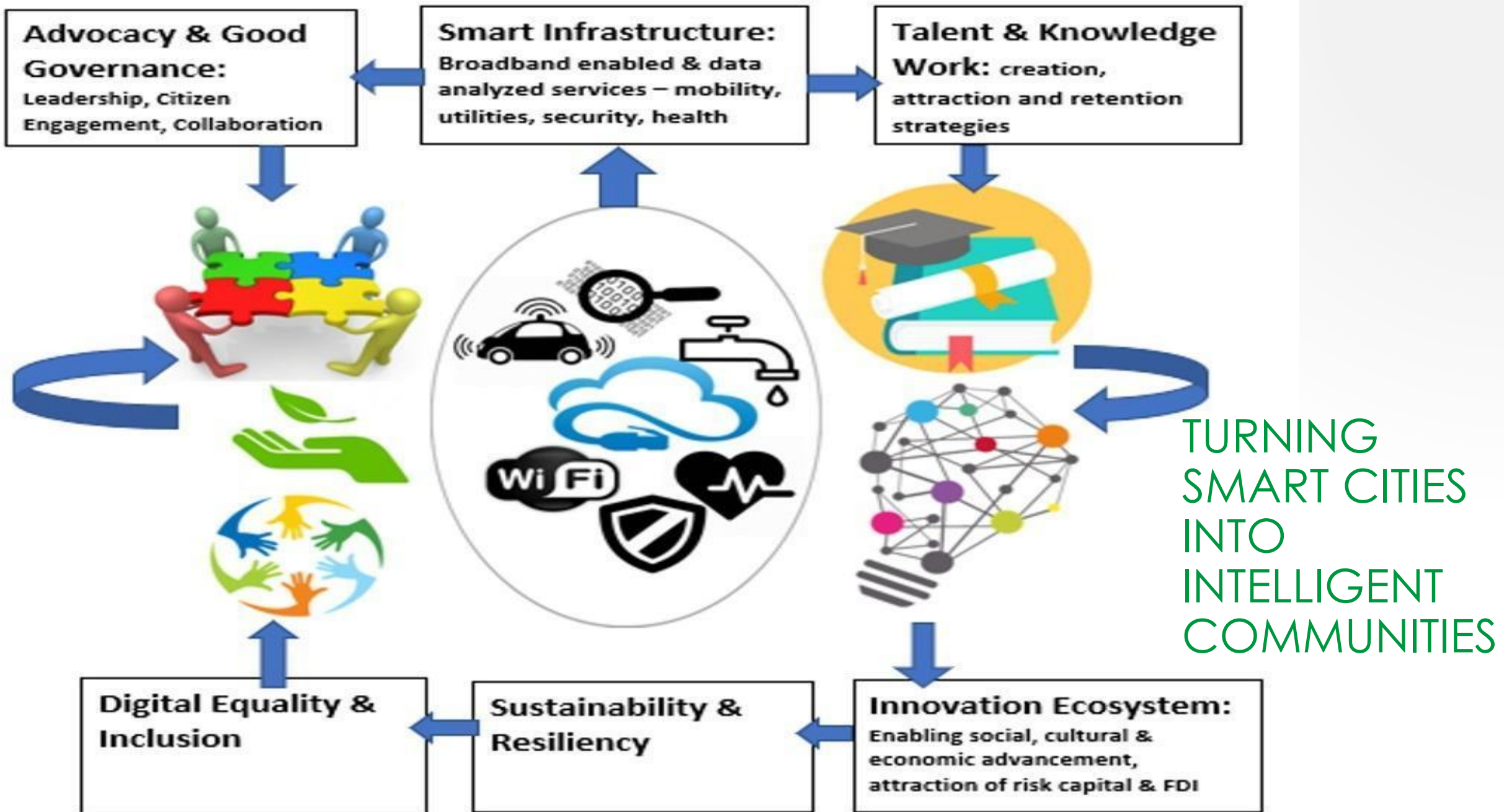


Blockchain

Smart Spaces

Digital Ethics and Privacy

Quantum Computing



a.k.a. SMART –CITY Infrastructure



Broadband

Broadband is the new essential utility, as vital to economic growth as clean water and good roads. Intelligent Communities express a strong vision of their broadband future, encourage deployment and adoption, and deploy their own networks where necessary.

When local governments among the Class of 2018 build **broadband networks**, what form do they take?

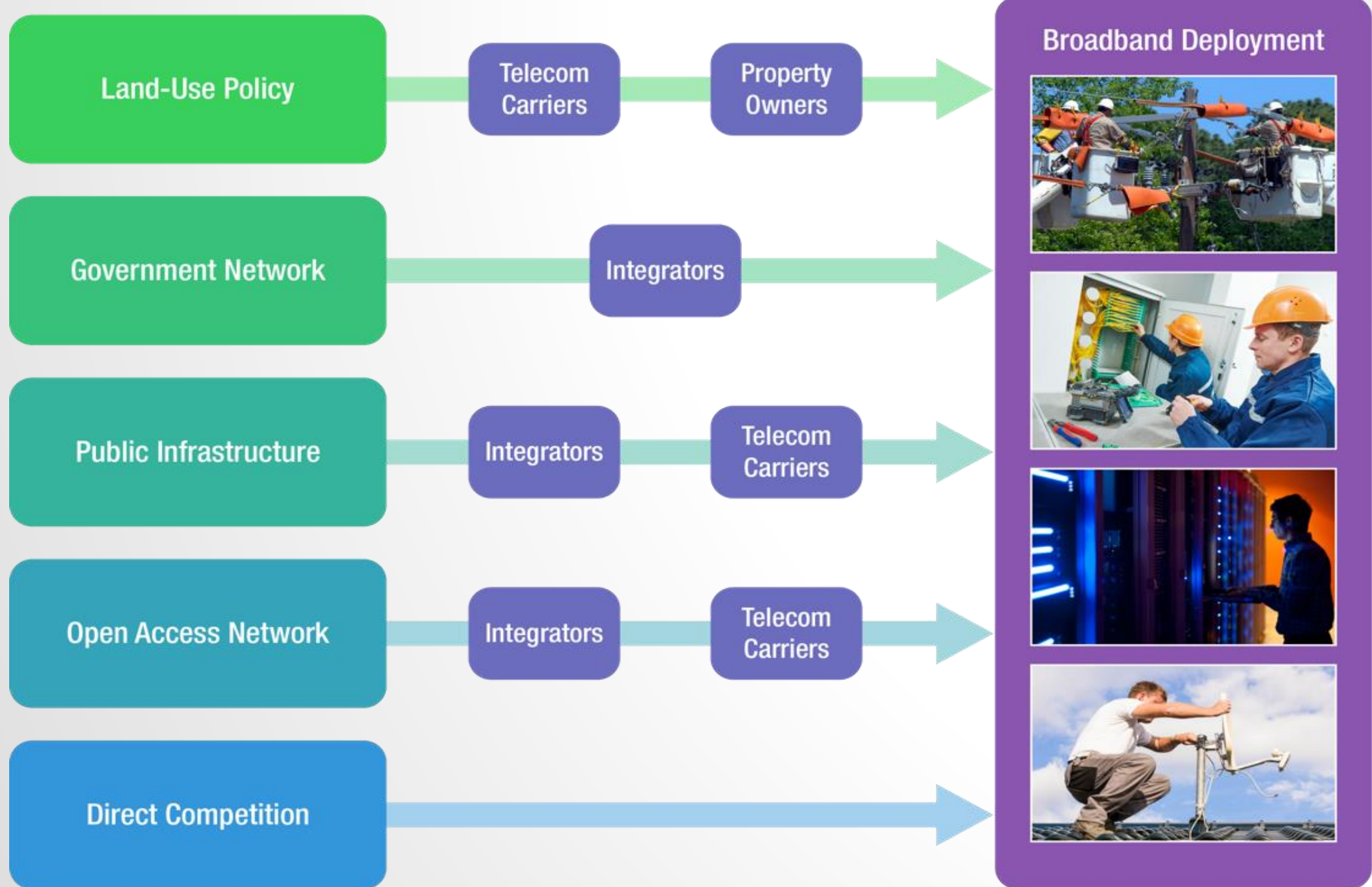


- 18% Build networks only for the use of government facilities.
- 28% Build "dark" networks in which they own the infrastructure but lease it to service providers to provide service.
- 32% Build open-access networks, in which they deliver a basic "transport layer" of service that makes it fast and inexpensive for services providers to bring up new service.
- 22% Build their own competitive local exchange carriers (CLEC) to provide data, voice and sometimes video services in competition with the private sector.

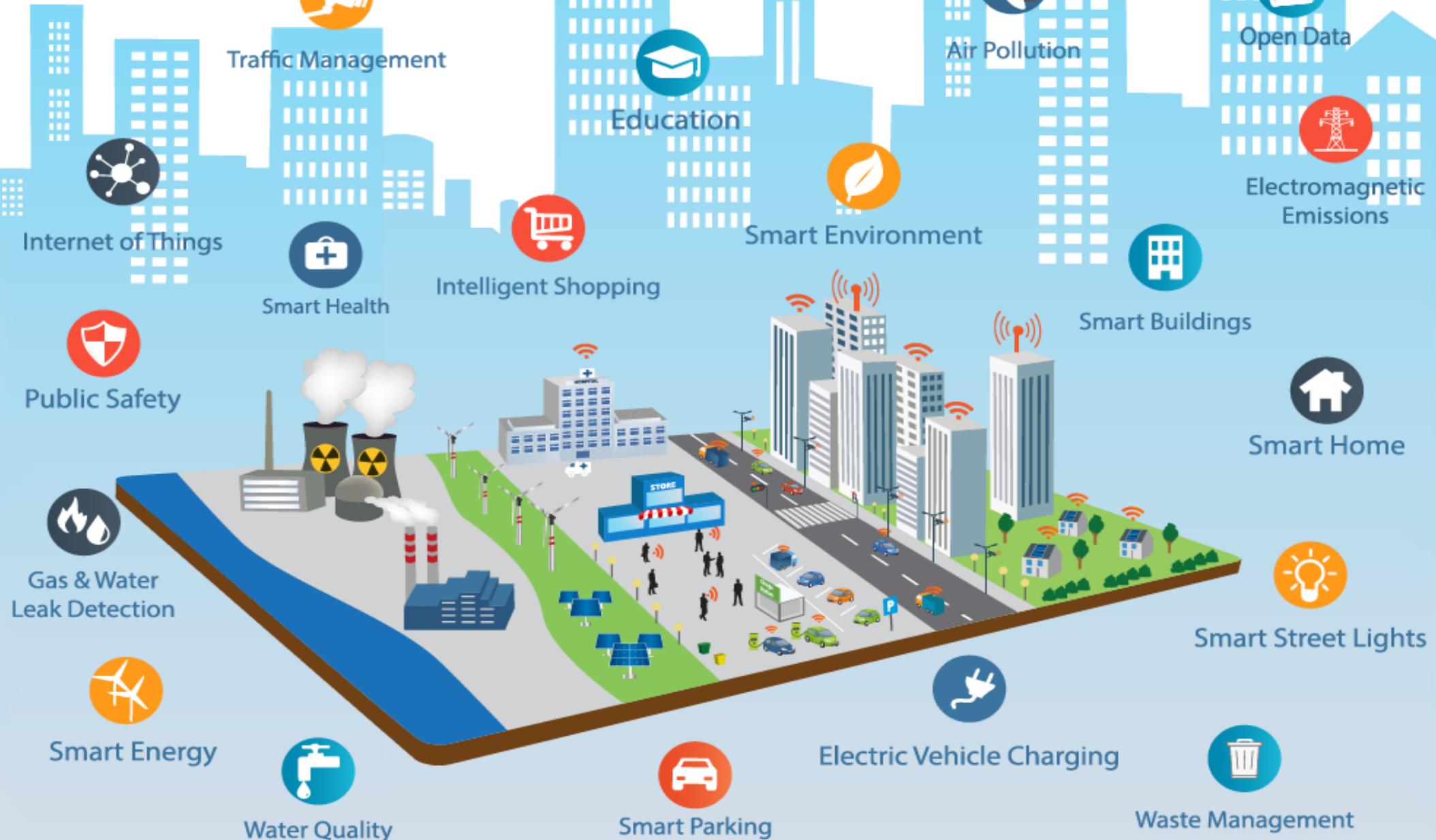
What kinds of **open access networks** do the Class of 2018 operate?



- 57% Operate fiber-optic networks.
- 27% Operate wireless networks.
- 16% Operate traditional copper-based networks.



Broadband enables Smart City Infrastructure

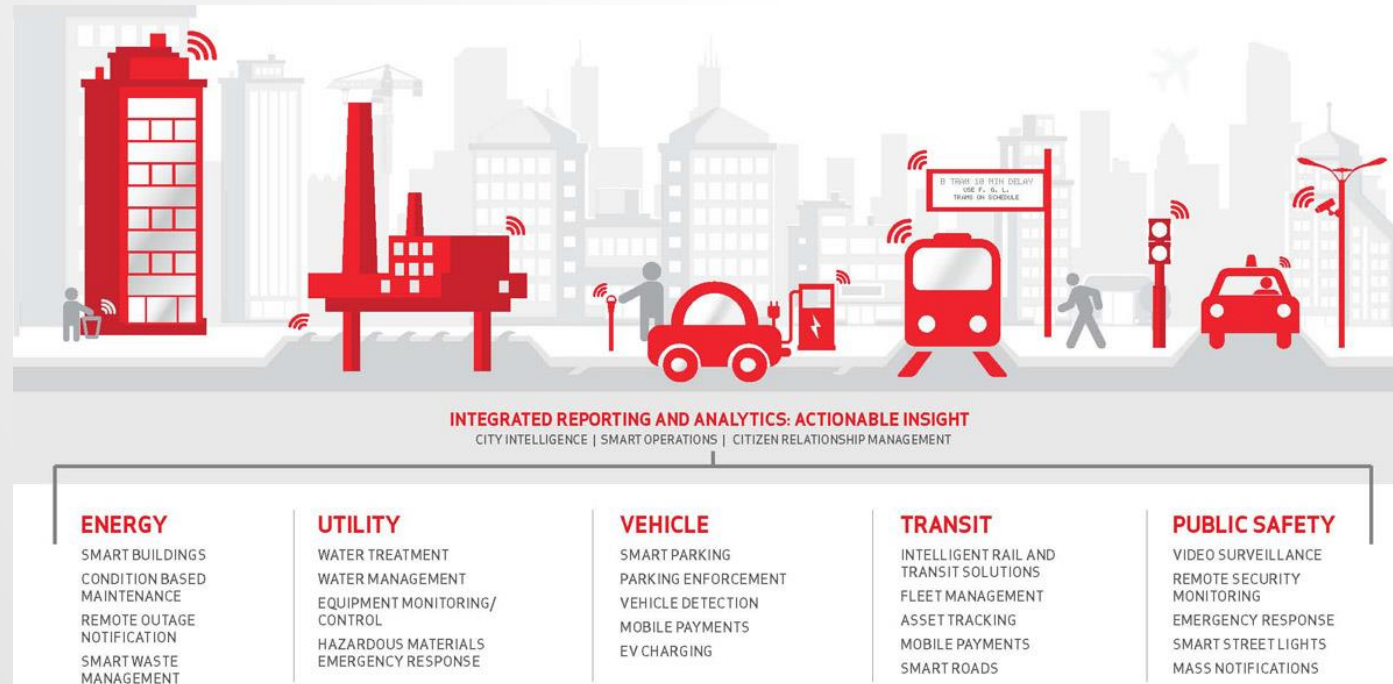


SMART INFRASTRUCTURE & DATA - KEY TO SMART COMMUNITIES



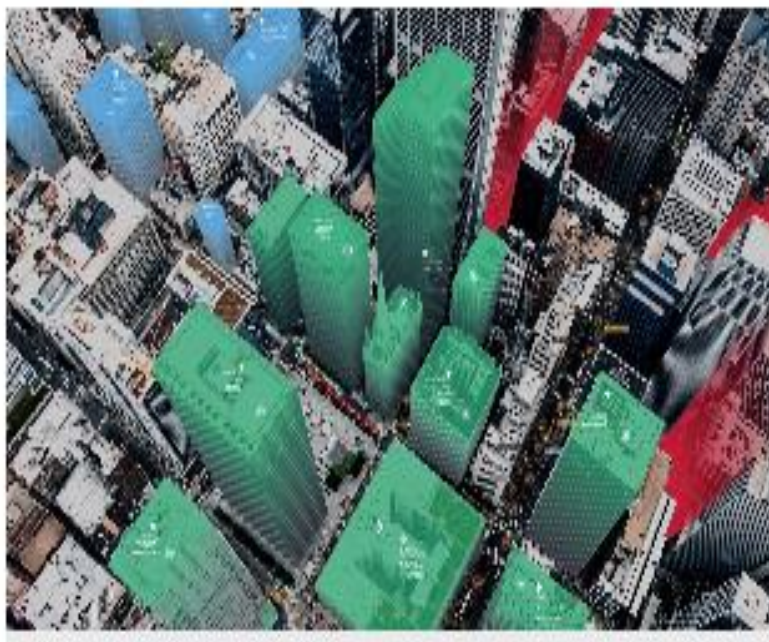
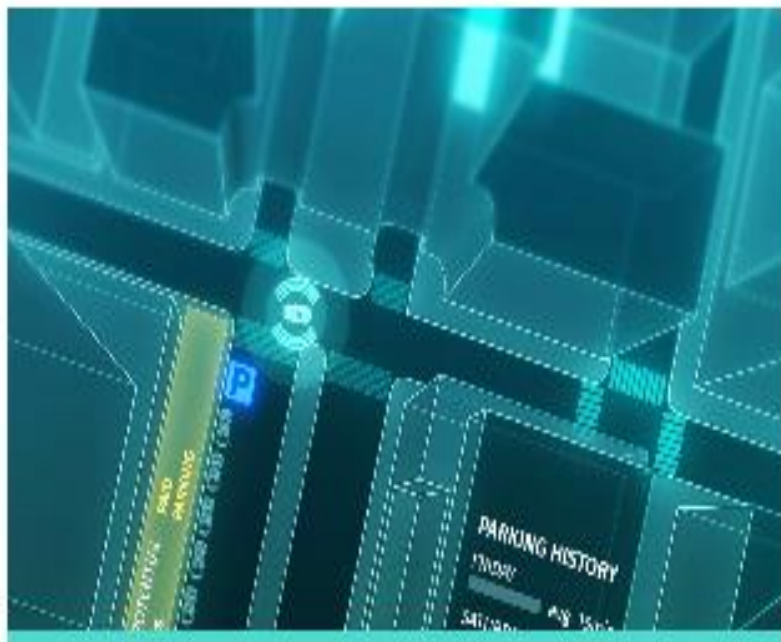
SMART CITIES

Focus on Infrastructure - Big Data / Predictive analytics for evidenced based decision making regarding urban assets, resources and sustainability.





Thirty years ago, we set out to make paper maps in cars obsolete. Now we are taking the driving experience from hands-on to hands-off. Tomorrow, maps will morph into something else entirely -- when everything physical will become digital. **We are no longer a map company, but a data company; one that is preparing for a world of increasingly autonomous machines.**



Vehicles: 6

Speeding: 0%

Moving: 0

People: 0

Photo

traffic: 19 inside: 2



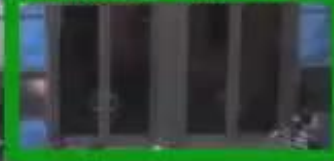
MAC

traffic: 7 inside: 0



Disney

traffic: 27 inside: 8



Forever21

traffic: 10 inside: 0



car



car



van/truck



cab



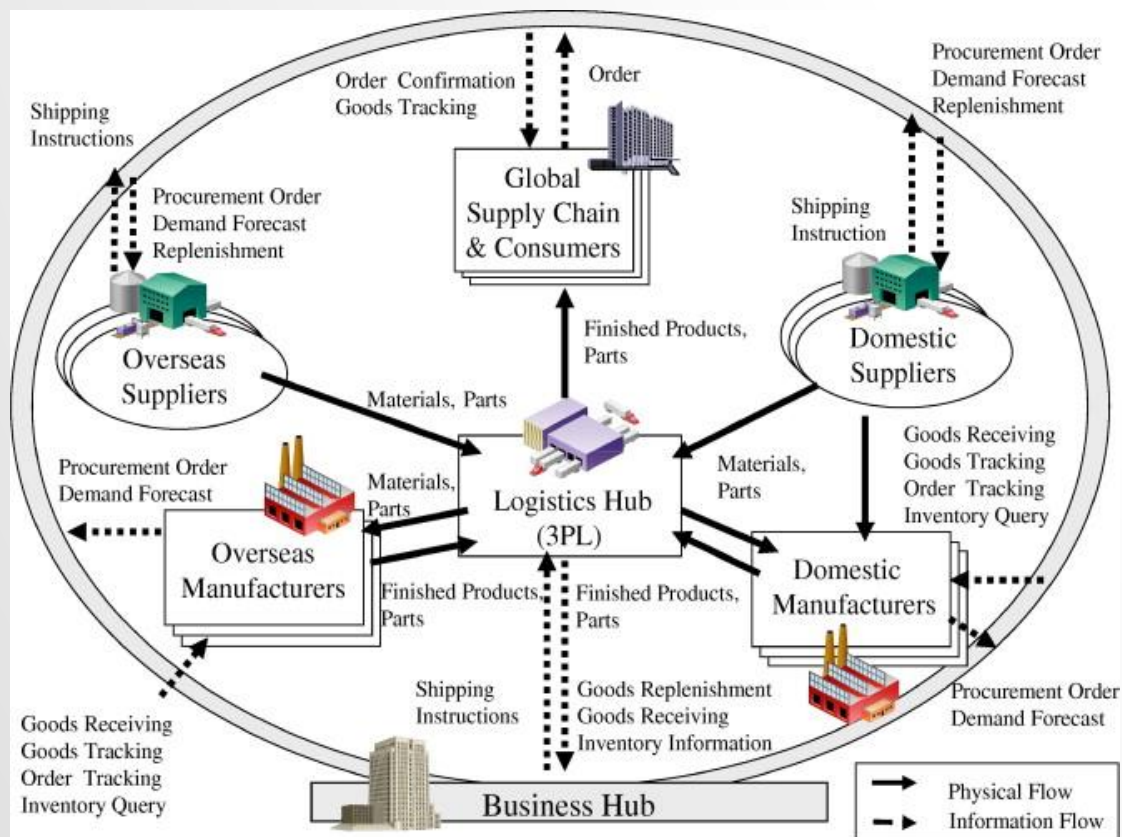
cab



van/



the new **state of logistics**





Enabling Technology / ITS
Intelligent Mobility Standards
Enforcement, road safety &
security
Fleet Management,
PayAsYouDrive Insurance
Sensor based Parking
Road Pricing

Public Transport
Travel information
Traffic management
Autonomous Vehicles
Pedestrian areas Public Realm and
Walkability
Bicycle pathways

Smart Cities – IoT and AI - World of Sensors, Beacons and Monitors Measuring Everything





Node Components



Environmental Sensors

Air temperature, Humidity, Barometric Pressure, Vibration, Sound Intensity, Magnetometer



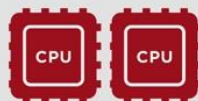
Air Quality Sensors

Nitrogen Dioxide, Ozone, Carbon Monoxide, Hydrogen Sulfide, Sulfur Dioxide



Light & Infrared Sensors

Light intensity, infrared (CLOUD COVER; SURFACE TEMPERATURE), camera, vehicle and pedestrian traffic. Images processed in-situ and discarded.



Linux Node Controllers

Image Processing Computer & System Health Manager and Control/Communications Computer

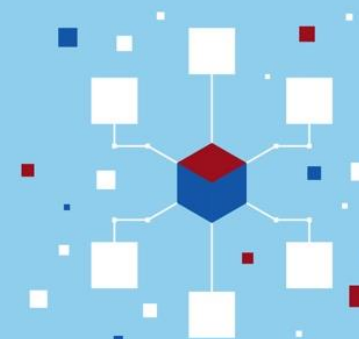


Node Power Manager

Node health monitoring and resilience functions

Argonne
NATIONAL LABORATORY

Argonne Server



Plenario, Open Data Portals, Dashboards, and Apps

Smart
Lighting

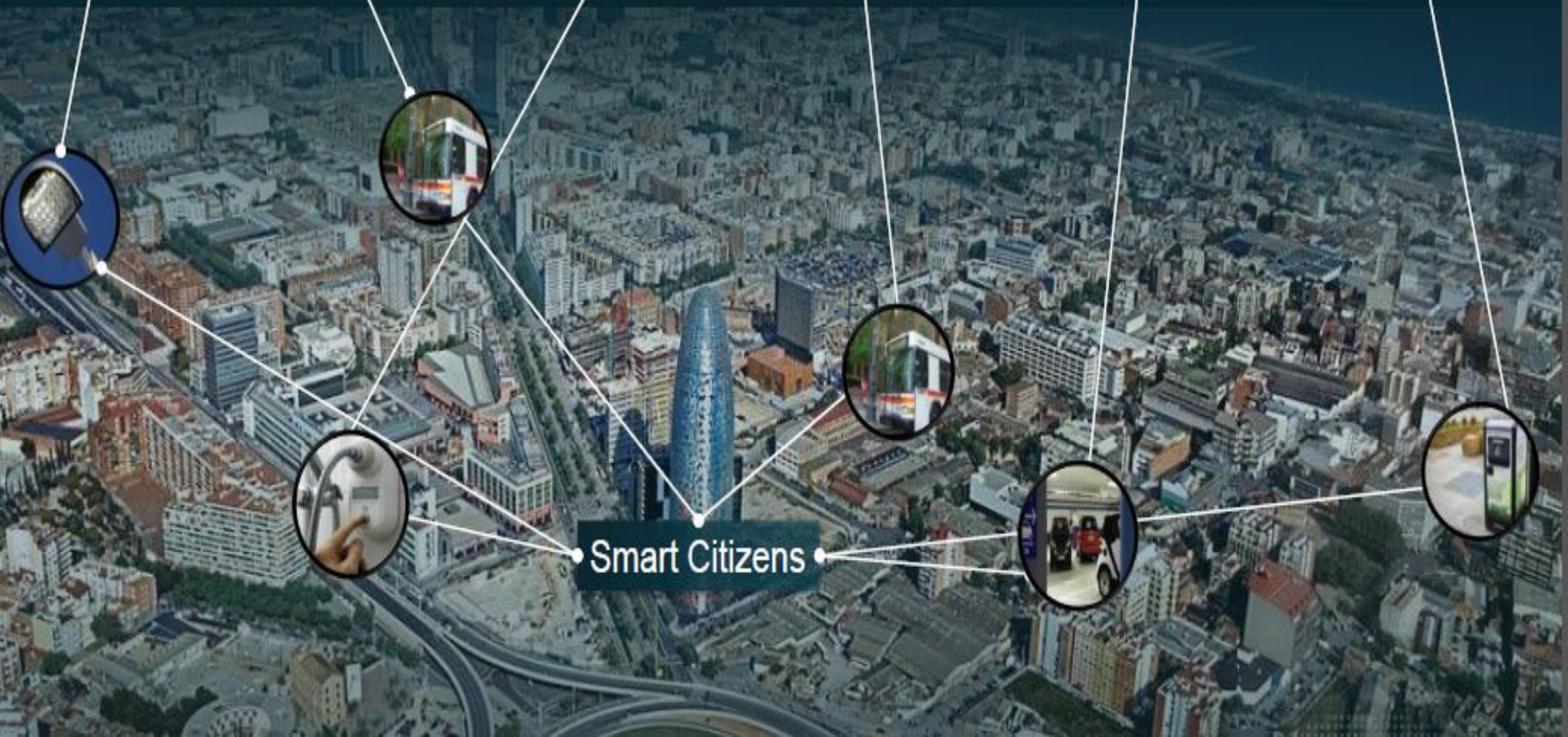
Smart
Buses

Smart
Water

Smart Bus
Stop

Smart
Parking

Smart
Waste



Smart Citizens

SMART VS INTELLIGENT

- Smart City Technologies make cities work better.
- Smart Cities leverage technologies to improve services
- Smart Cities use of Data to make informed decisions

It takes a Smart City to
Become an Intelligent
Community



SMART VS INTELLIGENT

- Like Smart Cities, Intelligent Communities leverage technology to improve services and use data to inform decisions,

It takes a Smart City to
Become an Intelligent
Community



SMART VS INTELLIGENT

- Like Smart Cities, Intelligent Communities leverage technology to improve services and use data to inform decisions,
- **But- Intelligent Communities do not focus on technology;**
- **its not the driver of solutions;**
- **rather people in the community drive solutions through innovation and creativity.**

It takes a Smart City to
Become an Intelligent
Community



SMART VS INTELLIGENT

- Like Smart Cities, Intelligent Communities leverage technology to improve services and use data to inform decisions,
- But- Intelligent Communities do not focus on technology; its not the driver of solutions; rather people in the community drive solutions through innovation and creativity.
- **Holistic Intelligent Communities Strategies create better cities where citizens and employers thrive and prosper in the broadband economy.**

(Key Takeaway)

It takes a Smart City to
Become an Intelligent
Community



Talent is our No.1
operating priority and our
most important asset.



Creating the Knowledge Workforce

A **knowledge workforce** is a labor force that **creates economic value** through its knowledge, skills and ability to use information effectively. Success in the broadband economy requires the ability to create a workforce qualified to perform knowledge work from the factory floor to the research lab, and from the construction site to the call center or corporate headquarters.



97% offer classes in coding, robots and other STEM enrichment, compared with 83% for the global group.



97% offer distance learning programs, compared with 81% of their peers.



93% have a 1-to-1 laptop or device program compared with 75% for their peers.

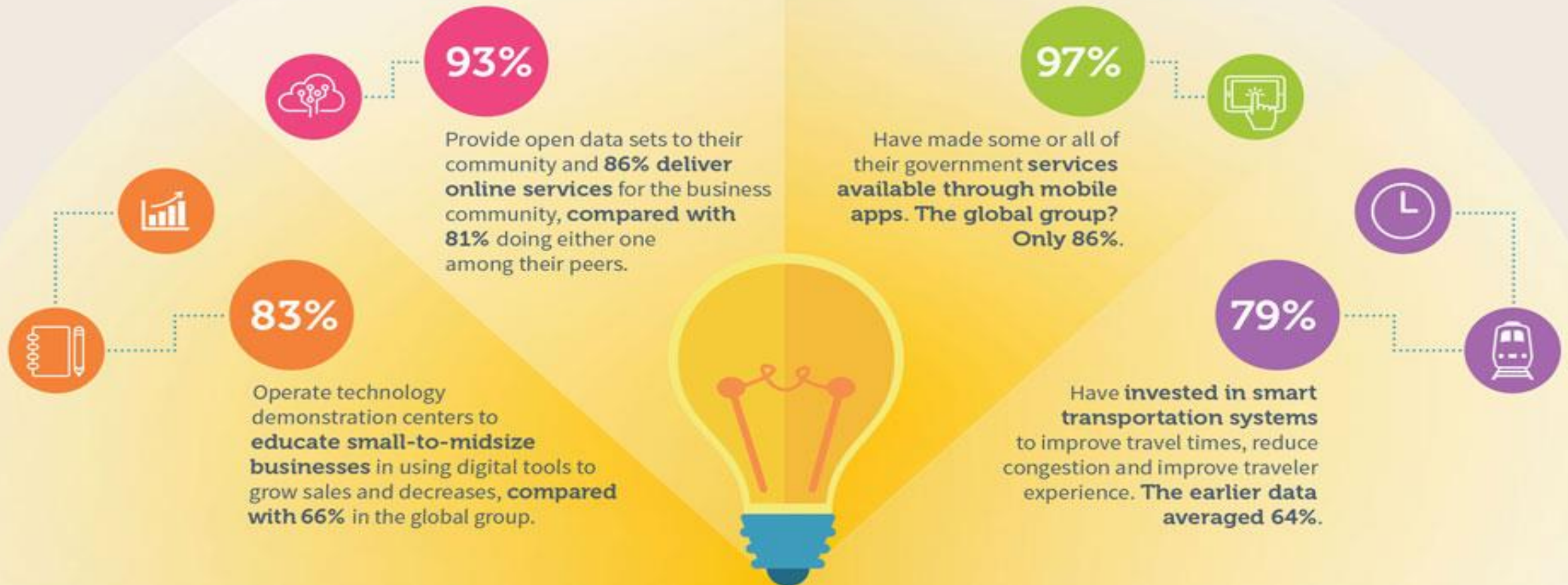


In 93% of the Smart21 of 2018, colleges and universities offer customized training to local employers, compared with 85% of the global group.

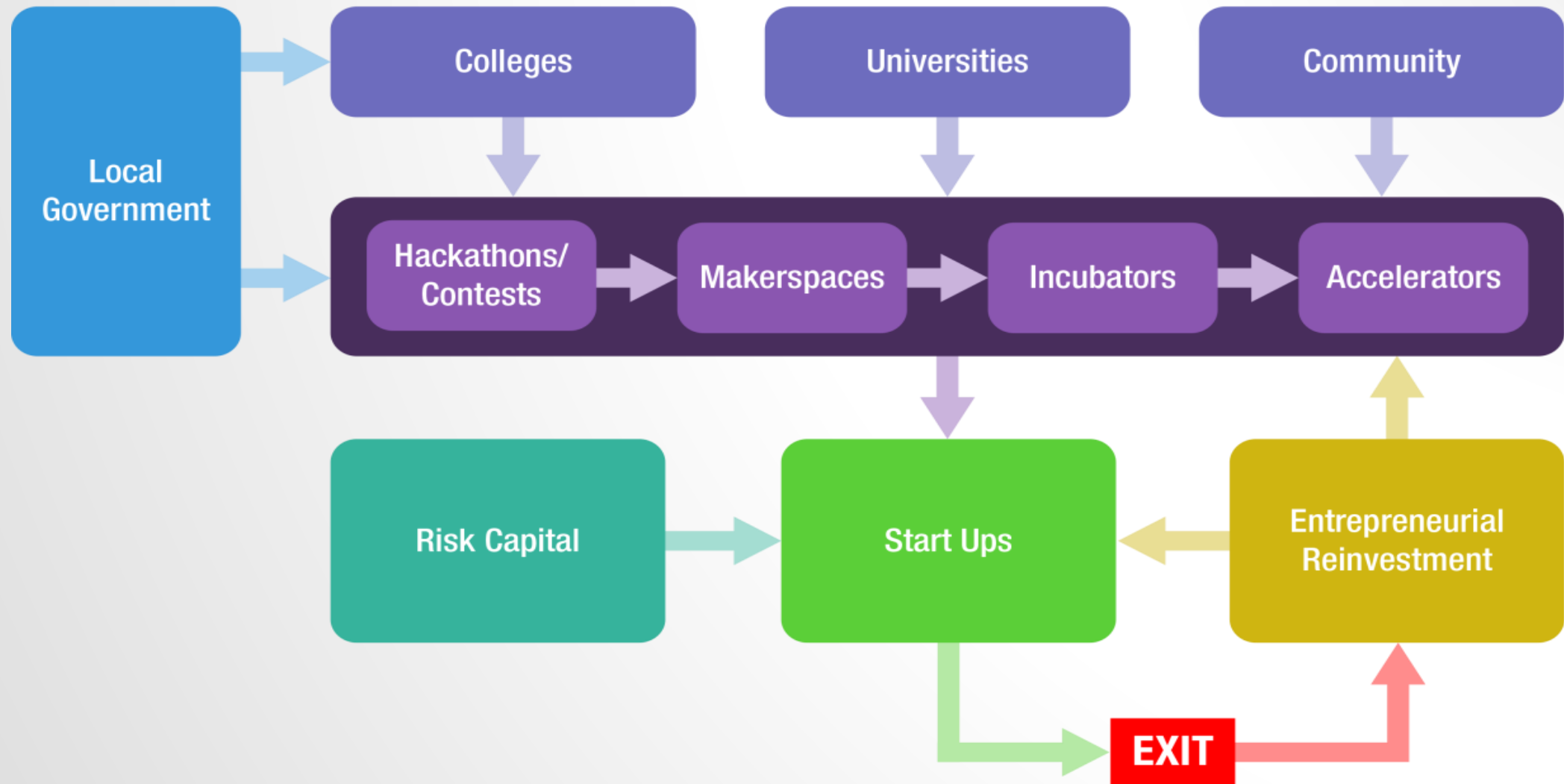


Innovation

Innovation is the lifeblood of the modern economy. Intelligent Communities pursue innovation through a relationship among business, government and such institutions as universities and hospitals. This Innovation Triangle helps keep the economic benefits of innovation local, and creates a culture that engages the entire community in positive change. Investments in innovative technology by government also improve service to citizens while reducing operating costs, providing valuable support to a dynamic innovation ecosystem.



PRIVATE-SECTOR INNOVATION

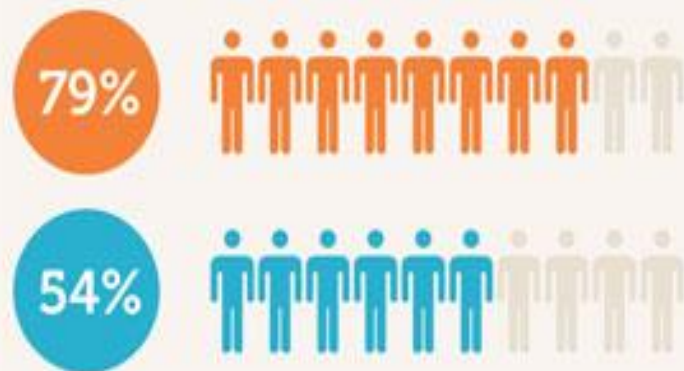


Digital Equality

As broadband deploys through a community, there is serious risk that it will worsen the exclusion of people who already play a peripheral role in the economy and society, whether due to poverty, lack of skills, prejudice or geography. **Intelligent Communities promote digital equality by creating policies and funding programs that provide everyone with access to digital technology and broadband**, offer digital skills training and motivate people to acquire those skills.



83% of the Class of 2018 offer free unscheduled tech support to residents in need of help, **compared with 70%** of the global group.



79% of the Class of 2018 have programs that work to create community champions among excluded groups, as models for others to follow, **compared with 54%** of the global average.



62% provide direct subsidies or discount programs for home access to broadband, **compared with 49%** from the global average.

Sustainability

Communities that use fewer resources to create products and provide services are more efficient and productive, which is key to continued improvements in standard of living. **Many if not most sustainability measures improve local quality of life, from cleaner air and water to improved public transportation and greater “livability.”** Communities that make sustainability a shared goal typically engage organizations, community groups and neighborhoods in sustainability programs and activities. These contribute to civic pride, local identity and mutual understanding.

For the global average, only 36% of communities track the important measure of trips taken without an automobile. Rural communities are much less likely to track this measure because of how car-dependent their citizens are. But encouragingly, 55% of the Class of 2018 reported measuring this.



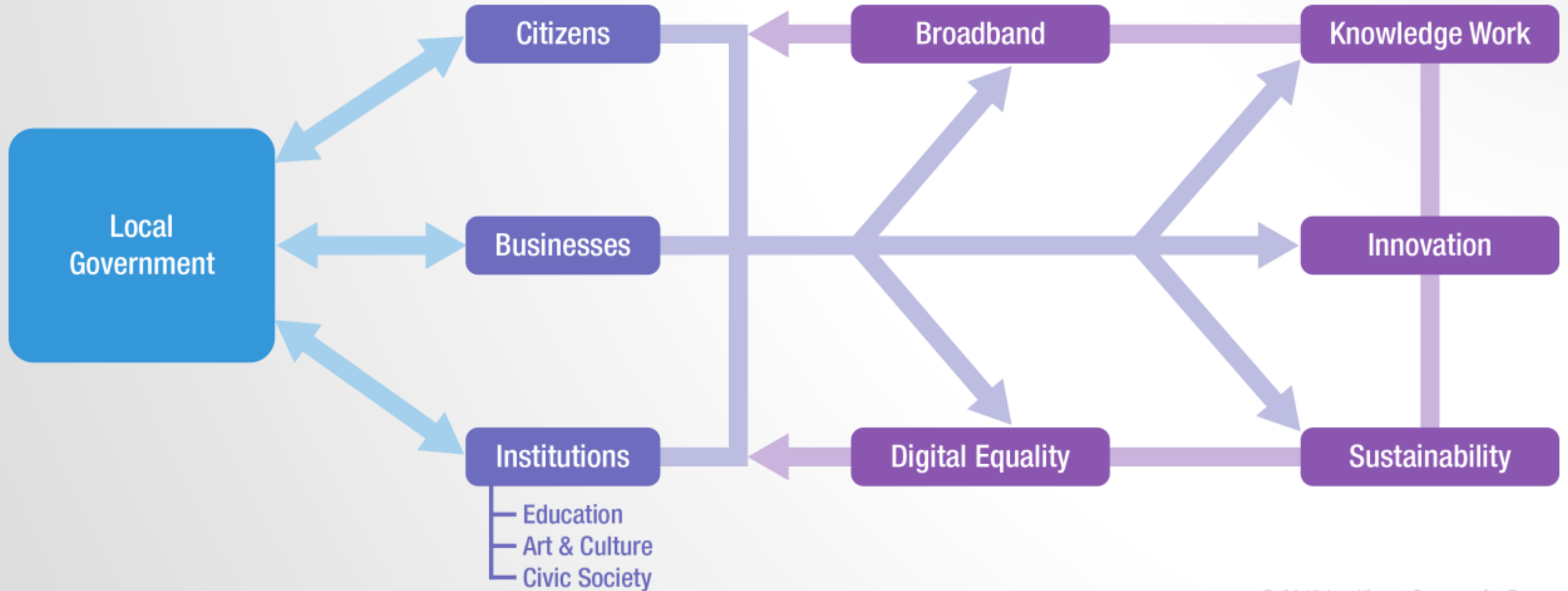
Advocacy

A community's citizens can be a barrier to progress, when they resist change, or can become its most powerful advocates for a better future. Advocacy is the slow and difficult process of building a common understanding of the challenges facing the community and a shared vision for overcoming them. **Intelligent Communities devote time and resources to educating and engaging their citizens, businesses and institutions as true partners in understanding challenges, identifying solutions and planning a better future.** Intelligent Communities are also good marketers to the outside world of their digital age advantages for economic development purposes.

An illustration showing four hands of different skin tones (light orange, dark brown, light orange, and light orange) placing large teal puzzle pieces. The puzzle pieces, when completed, will form a city skyline silhouette. The leftmost puzzle piece is already in place and contains text.

The percentage of the **Smart21** that have developed a formal **Intelligent Community** growth strategy rose to **93%** among the **Class of 2018** from 87% for their global peers.

ADVOCATING FOR CHANGE



Intelligent Community of the Year 2015

The Columbus DOT win gained momentum through being recognized by ICF as the Intelligent Community of the Year in 2015 because of its foundational work on broadband infrastructure, focus on neighborhoods, and a strong public-private partnership eco system.”

Moez Chaabouni, Columbus Deputy CIO

Columbus (ICF 2015)

- \$40 Million USD – DOT Smart City Transportation Challenge
- \$500 Million USD overall matching

COLUMBUS: AMERICA'S "MOST INTELLIGENT CITY"

SKILLS, INNOVATION & ADAPTABILITY: KEYS TO THE BROADBAND ECONOMY

Kyle Sloan 2

SMART CITIES CHALLENGE

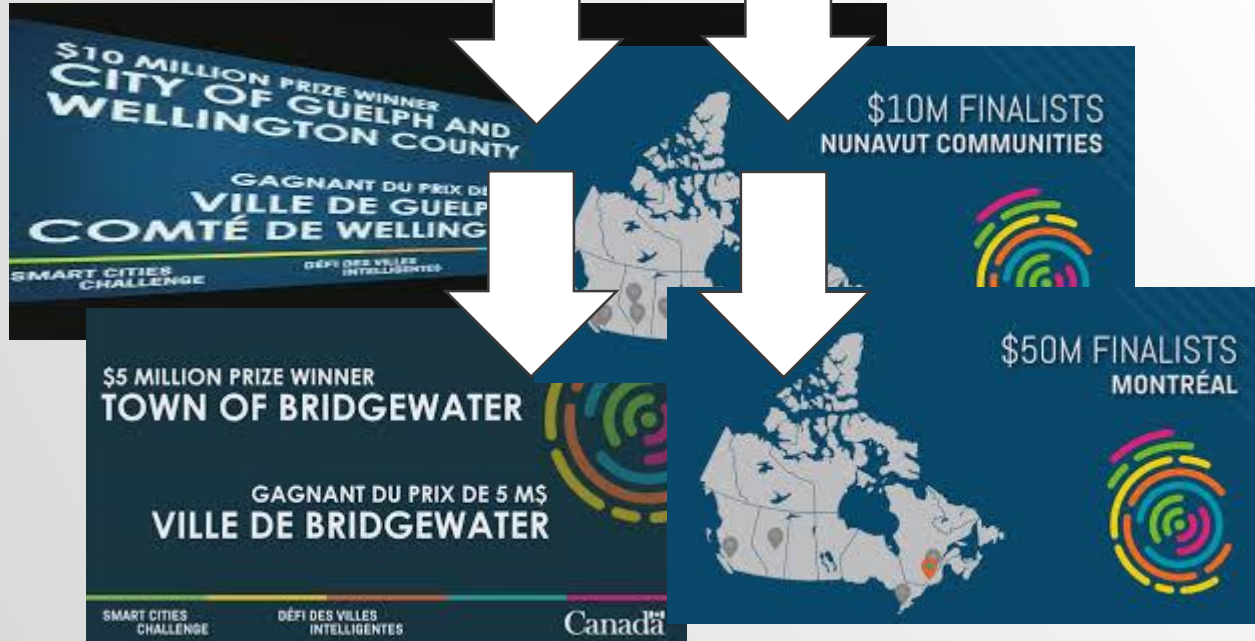
[canada.ca/
transportandinfrastructure](http://canada.ca/transportandinfrastructure)

Canada

SMART CITIES CHALLENGE

canada.ca/
transportandinfrastructure

Canada



SMART CITIES CHALLENGE

canada.ca/
transportandinfrastructure

Canada

SMART CITIES CHALLENGE

Community
Support Program

Canada

\$10 MILLION PRIZE WINNER
CITY OF GUELPH AND
WELLINGTON COUNTY
GAGNANT DU PRIX DE
VILLE DE GUELPH
COMTÉ DE WELLINGTON
SMART CITIES CHALLENGE DÉFI DES VILLES INTELLIGENTES

\$10M FINALISTS
NUNAVUT COMMUNITIES

FUTURE CITIES
CANADA

\$5 MILLION PRIZE WINNER
TOWN OF BRIDGEWATER

GAGNANT DU PRIX DE 5 M\$
VILLE DE BRIDGEWATER

SMART CITIES
CHALLENGE

DÉFI DES VILLES
INTELLIGENTES

Canada

\$50M FINALISTS
MONTRÉAL

SMART CITIES CHALLENGE

canada.ca/
transportandinfrastructure



Canada



SMART CITIES CHALLENGE

Community Support Program

Canada



COMMUNITY ROUNDTABLE

FUTURE CITIES CANADA
COMMUNITY Solutions Network
A Program of Future Cities Canada

In partnership with:  **City of Kelowna**

10 AM - 2 PM | October 25, 2019
Kelowna Downtown Library
Kelowna, BC

led by:  **EVERGREEN**

In partnership with:  **URBAN INSTITUTE**  **ICF CANADA**

With funding provided by:  **Infrastructure Canada**  **Canada**

\$10 MILLION PRIZE WINNER
CITY OF GUELPH AND WELLINGTON COUNTY

GAGNANT DU PRIX DE 10 M\$
VILLE DE GUELPH ET COMTÉ DE WELLINGTON

SMART CITIES CHALLENGE DÉFI DES VILLES INTELLIGENTES



\$10M FINALISTS
NUNAVUT COMMUNITIES





FUTURE CITIES CANADA

\$5 MILLION PRIZE WINNER
TOWN OF BRIDGEWATER

GAGNANT DU PRIX DE 5 M\$
VILLE DE BRIDGEWATER

SMART CITIES CHALLENGE DÉFI DES VILLES INTELLIGENTES





\$50M FINALISTS
MONTRÉAL





ATLANTIC IDEA CAMP

FUTURE CITIES CANADA
COMMUNITY Solutions Network
A Program of Future Cities Canada

In partnership with:  **CANADIAN URBAN INSTITUTE**  **ICF**

 **CITY OF Mount Pearl**

With funding provided by:  **EVERGREEN**  **OpenNorth**  **Infrastructure Canada**  **Canada**

OLDS, ALBERTA – THE GIGABIT TOWN SMART21 2018



TURNING SMART CITIES INTO INTELLIGENT COMMUNITIES



Intelligent
Community of
the Year 2014

Sidewalk
Toronto;
GOOGLE;
Waterfront
Toronto;
City of
Toronto;
George
Brown
University; &
Citizens

**Privacy Issues
wrapped in
Urban Design**

Is your community ready?



SMART
21 INTELLIGENT
COMMUNITY
FORUM

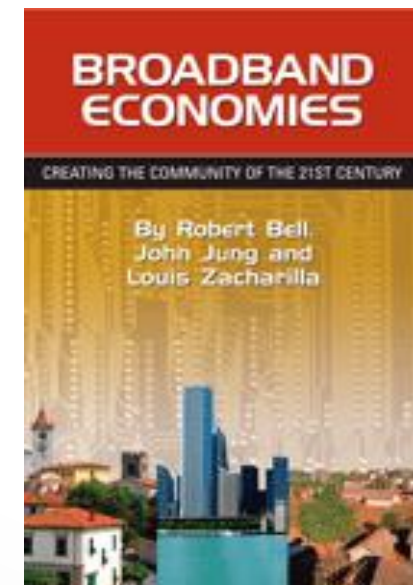
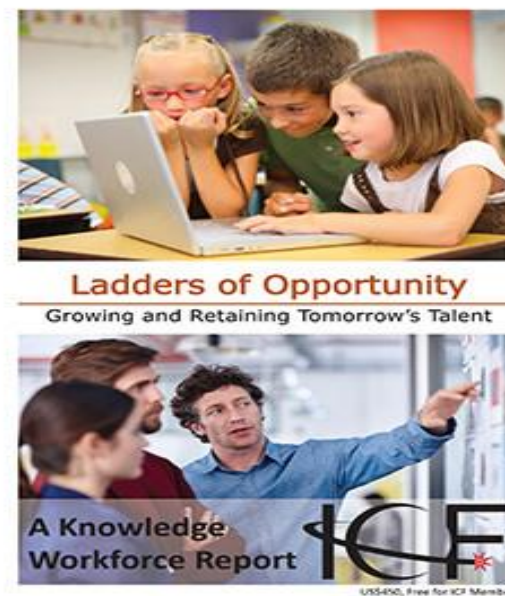
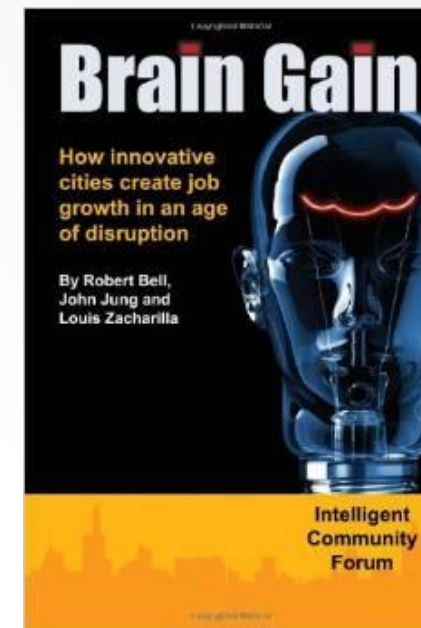
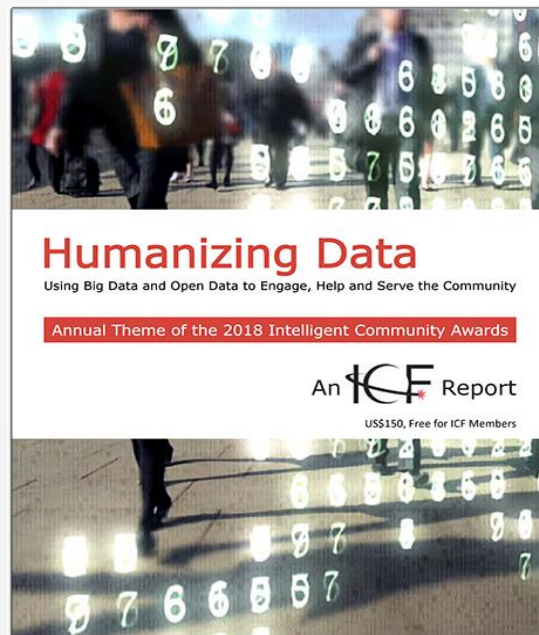
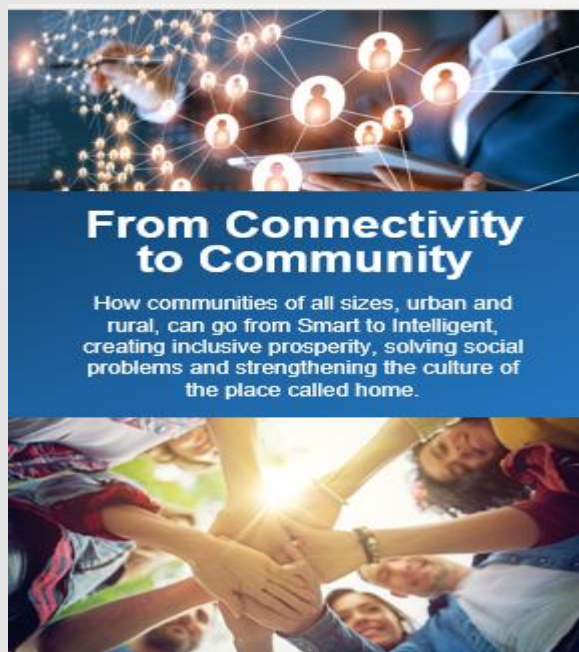
BENEFITS



EARNED MEDIA



Networking





Thank you!

**John G. Jung
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Intelligent Community Forum (ICF) &
President, ICFF &
ICF Canada Executive Director
www.intelligentcommunity.org
www.icf-Canada.com**

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