



Smart Cities Panel

CRA Conference at Snowbird
July 18, 2016

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Confluence of Urbanization and Digital Ubiquity

- The age of urbanization and emergence of cities as living laboratories
- Changing demographics – graying human population and shrinking labor force
- The acceleration in scope, scale, ubiquity, and economic impact of digital technology



The Age of Urbanization

- *In 2008*, for the first time in history, **more people lived in cities than in rural areas**. *By 2050*, nearly 2/3 of the world's projected 9.7B population will live in urban areas.
- Over the last decade, the global urban population has been **rising by an average of 65M per year**.
- **In China alone**, 300M people are expected to move to urban areas over the next 15 years; India needs to build the equivalent of a new Chicago every year to keep up with demand.
- **Half of global GDP growth** between 2010 and 2025 will come from 440 cities in emerging market; 50% of urbanization involves cities with less than 500K population.
- **Cities display greater network effects:** with every doubling of a city's population, each inhabitant becomes 15% wealthier, more productive and more innovative.
- Growth of **innovation districts, mixed-use spaces, and urban talent pool**

**In this century, cities
will account for...**

90% of population growth

80% of global CO₂

75% of energy use



The world is getting older...

- **65+ is rapidly increasing** in both advanced and emerging economies
- Between 1950 and 2050, the ratio of 65+ to children <15 years old will go from **3:10** to **16:10** in advanced economies.
- In emerging economies, the ratio will increase from **1:10** to **6:10**
- The Chinese refer to their impending aging challenge as the “**4:2:1 problem**”

Every adult child must care for two parents and four grandparents

- Impact on the future of workforce



Technological Advances and Emerging Trends



Expanding Limits
of Computation



Digitization and
Data Explosion



Automation and
Smart Systems




Connectivity
and Mobility

Disruption of Markets and Industries

Technological innovations have always **disrupted the status quo** and underpinned dynamic economic change. *e.g., the steam engine, the printing press, electricity*

Today's advances are catalyzing:

- Disruption across many markets
- Adoption at breathtaking speed and scale
- Acceleration of economic impact




“Possibilities do not merely add up, they multiply.”

Paul Romer, Economist




SMART CITIES: Emergence of Living Laboratories

- Enhanced quality and delivery of urban services
- Increased resiliency and efficiency of city infrastructure
- Increased access and inclusion
- More sustainable environment with smart growth path
- “Flattening the urban peak” by data-driven decision making
- Citizens directly engaged in shaping their communities



“Cities have the capability of providing something for everybody, only because, and only when, they are created by everybody.”

Jane Jacobs, acclaimed urbanist, 1961



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Today's Distinguished Panelists:

Susan Graham, UC Berkeley and PCAST

Michael Mattmiller, City of Seattle

Stuart Cowan, Smart Cities Council

Erwin Gianchandani, National Science Foundation