

**THE MISSING PIECE:**  
**VOICE OF SMART CITY CITIZENS**  
 WUXI: FROM ANCIENT TO INTERNET OF THINGS CITY



# WUXI IN FOCUS

- The study
- The city
- The citizens
- The stakeholders
- The implications
- Our support

Rethinking a city in a crisis:

- **2007** – water pollution causes ecological disaster
- Subsequent deliberate economic reorientation with a focus on high-tech industries



- **Today** – a city orientated around the Internet of Things (IoT)





## THE STUDY

Identifying smart cities and meeting their citizens

# THE MCI MISSION



Market and Consumer Insight (MCI) investigates links between consumer behavior, market and technological trends to help Alcatel-Lucent and its clients, communication service providers, make more informed and impactful business decisions.

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MCI experts dig deeper and reach farther to provide information that helps communication service providers formulate new thinking, including:

- Global and regional, urban and rural, insights
- Research on consumer, market and technological trends



# GLOBAL RESEARCH FINDINGS

## INVESTIGATING SMART CITIES

### Three-part research:

- Analysis of **18 cities** to assess smart motivations
- Deep dive on **7 cities**
- Broad study of **52 cities** to assess smart motivations

## FOUR MODELS WERE DISCOVERED

### Dream Box:

- Turnkey city
- Public-private partnership

### IT Box:

- Focus on IT excellence
- Privately funded

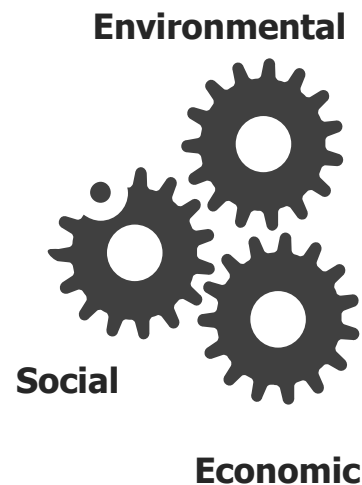
### Fragmented Box:

- Independent projects
- Public-private funding

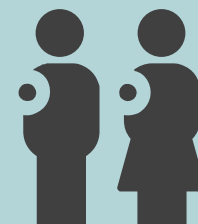
### Black Box:

- Government-controlled
- Closed private ecosystem

## THREE MOTIVATIONS FOR DEVELOPMENT IDENTIFIED



## WHAT WAS MISSING?



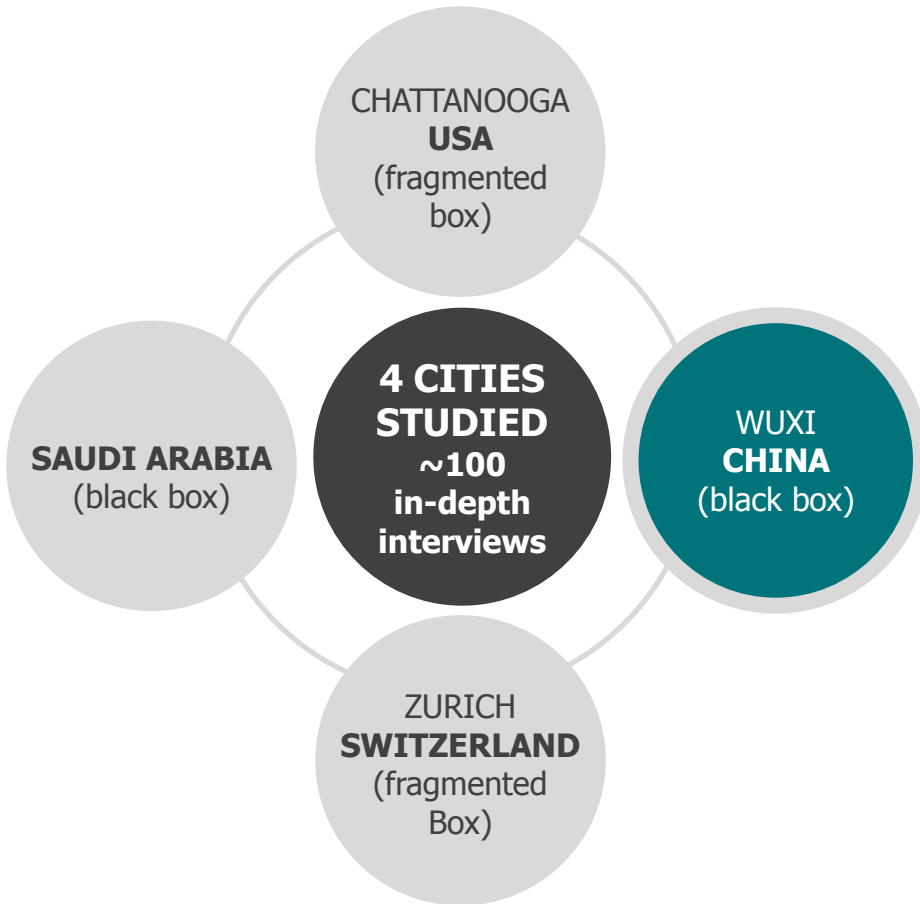
**The voice of the citizen**

### More info about the four models:

[http://www2.alcatel-lucent.com/knowledge-center/public\\_files/Smart\\_Cities\\_market\\_opportunity\\_ExecSummary.pdf](http://www2.alcatel-lucent.com/knowledge-center/public_files/Smart_Cities_market_opportunity_ExecSummary.pdf)



# MEETING THE WUXI CITIZENS AND STAKEHOLDERS



## 20 IN-DEPTH INTERVIEWS

Public transport, science, energy, teaching, manual workers, government officials, healthcare, hotels, manufacturing, retail, entrepreneurs, service providers, researchers, technology, charity

- 8 female
- 12 male
  
- 15 citizens
- 5 stakeholders



# THE CITY

Why put Wuxi in the spotlight?



# A CHANGE IN DIRECTION

From light industry to heavy industry to IoT

## THE CITY

- In the heart of the Yangtze River economic development zone
- Experiencing fast economic growth
- **Su-Nan model:** towns and villages essential to large-scale processing industries

## THE CHALLENGES

- Suffered water pollution catastrophe in 2007
- Government intervention changed industry focus from heavy to high-tech
- Overzealous government intervention can limit citizen engagement

## THE SMARTNESS

- More than **600** core IoT enterprises
- Nearly **1,000** high-level IoT researchers and more than **50** research institutions
- Involvement of key national telecom service providers in IoT research base
- Related economic output of over **RMB 30 billion** (US\$ 4.8 billion)




# THE CITIZENS


## Understanding the missing voice

# ECONOMIC AND SOCIAL BENEFITS TOP PRIORITY

Citizens see **technology as an enabler** and recognize that significant economic, social, and eco-sustainability benefits can be achieved via smart city projects.




First I make sure which school I want my kid to go and click the school name, input relevant information to generate the data and upload to the system once and for all, without having to queue up or make other efforts.”




**Female, machinery**

**EDUCATION**



If we really want to be a smart city, we need to firstly develop the most backward regions.”



**Female, education**

**SOCIAL INCLUSION**



Environment is very important. A smart program cannot go without being green.”



**Female, utilities**

**ECO-SUSTAINABILITY**



We should all live for a better life and to pass that on to the next generation, making everyday life more convenient.”



**Male, service industry**

**QUALITY OF LIFE**



Community service is progressing step by step. Now the community cares about your health, your children, your insurance. The community contacted us immediately to convey consolation after my mother in law was treated.”



**Female, chemistry**

**COMMUNITY**



We received notice that my grandmother can have access to a free mobile phone. I guess this is available to the elderly who live alone.”



**Female, administration**

**TECHNOLOGY FOR THE ELDERLY**

# AN EFFICIENT, YET PERSONAL, WAY OF LIFE

Citizens are interested in services that deliver informative, networked and intelligent means of working, living, and entertaining – without compromising personalization.

## EFFICIENT

- More possibilities from mobile and online – benefitting family life and work
- Remote control of household appliances
- Integrated travel and shopping cards
- Creating a city that is convenient, efficient and comfortable

## PERSONAL

- Human-centric, not technology-centric
- Preservation of face-to-face communication
- Healthcare remains a face-to-face personal relationship



Besides the basic life necessities, my mobile phone is the most important thing, seconded by my computer.”

**Male, transportation**



**VOICE OF THE CITIZEN**



If everything becomes smart and intelligent, many more people would have to be laid off.”

**Male, utilities**



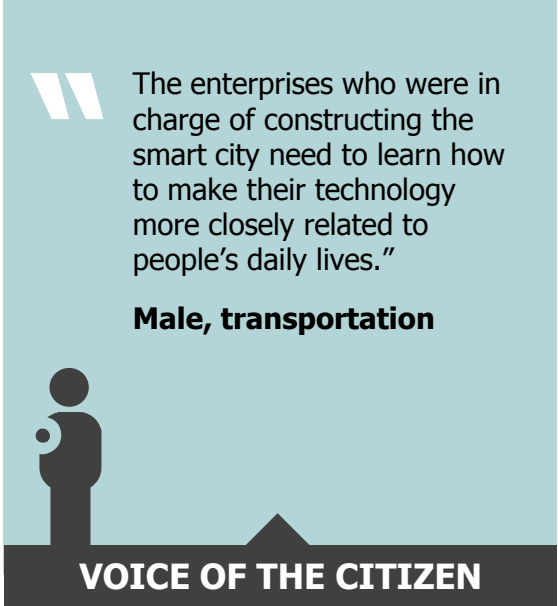
**VOICE OF THE CITIZEN**

# FOR NEW SERVICES: CONVENIENCE IS KEY

Citizens don't see a need for more service provider competition. Instead, they want incumbent providers and public authorities to offer more personalized services.

## Expectations of networked city and service development:

- Real-time transportation information, integrating SMS notifications
- Online booking and registration for schools, hospitals and public services
- Mobile payments for low-value, everyday purchases
- Communication with friends and family wherever and whenever
- Energy and eco services, including smart home, water and air quality monitoring



“ The enterprises who were in charge of constructing the smart city need to learn how to make their technology more closely related to people's daily lives.”

**Male, transportation**

**VOICE OF THE CITIZEN**

# CONCERNS OVER PRIVACY AND PERSONAL INFORMATION

## Online and offline

Fears and reservations cited include:

- Personal information being retrieved from the internet
- Misuse of travel cards
- Telephone harassment/internet fraud
- Malicious websites

**Overall, most see these dangers as risks worth taking** – people realize they must take personal responsibility over what information they publish. But for many, **ultimate accountability** lies with government and service providers to control and protect information.



I remember the second day after my baby was born three insurance companies visited us and called my name. I was very surprised as I'd never seen them before."

**Male, healthcare**



Those who shouldn't have access to the information should not get the information. If they get it somewhere, that means there is a hole in the management. You cannot blame it on the technology."

**Male, government**



**VOICE OF THE CITIZEN**



# THERE IS OPPORTUNITY TO INCREASE CITIZEN INVOLVEMENT...

## THE SITUATION

- Participation is low
- Lack of awareness about smart cities
- Citizens have heard about IoT or wireless cities
- Lack of awareness and efficiency around communication channels

## THE OPPORTUNITY

- Citizens see their active involvement as a must in city development
- People are willing to raise their voice



What makes a city smart is the participation of all its citizens. It must require all people to get involved to realize a smart city."



**Female, retail**

End users are learning about the smart city through telecommunications service providers."

**Male, transportation**

### VOICE OF THE CITIZEN

# ... BUT A SIGNIFICANT BARRIER MUST BE OVERCOME

- Government communications are often one-way
- New channels are required, such as well-managed events, websites and online platforms
- Once channels are created, promotion and awareness must follow
- The local community, where the threshold is low, is key to facilitating communication



I don't think there would be any effect if you participate, because they are unlikely to take your opinions seriously, and they just symbolically built a platform to let the citizens participate."

**Female, chemistry**



**VOICE OF THE CITIZEN**



# IMPROVE QUALITY OF LIFE

Citizens believe that improving quality of life is worth the risks – and the financial cost.



It is you who should pay attention to protect your privacy, because most of the personal information is revealed by yourself. For me, I think it's not a problem."

**Female, healthcare**



**VOICE OF THE CITIZEN**



If there are such services that make our life easier, I will spend a quarter or one third of my salary on them."

**Male, healthcare**



**VOICE OF THE CITIZEN**





## **THE STAKEHOLDERS**

How are roles evolving to enable smart development?

# RELEVANCE IS KEY TO UNDERSTANDING

Stakeholders have high understanding and awareness as it is closely linked to their professional activities.

## GOVERNMENT PERSPECTIVE

- Complete understanding of smart city definition, specification and implementation
- Based on interactions with higher-level government

## PRIVATE SECTOR PERSPECTIVE

- See importance of smart city concept for making Wuxi unique and attractive
- Some see the term 'smart city' as hype


## NGO PERSPECTIVE

- Respondents didn't know much about the smart city notion
- Belief that the development should be more about people and their spiritual development

# ACTIVE PARTICIPATION

Project development and implementation is motivated by specific interests.

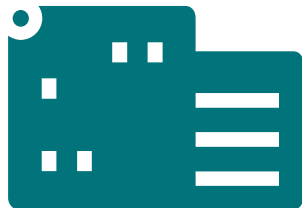
- IoT base and top-level authorities actively involved in new pilots, projects and products connected to their areas of business or responsibility
- Limited community level involvement represents opportunity for implementation in the provisioning of small applications that impact daily life



“Actually, I think a smart city is built on the basis of an informatized city.”

**Female, service provider**

**VOICE OF THE CITIZEN**



**Government is seen as the organizer and planner** – other stakeholders implement and execute programs in accordance with their qualifications and specialties.

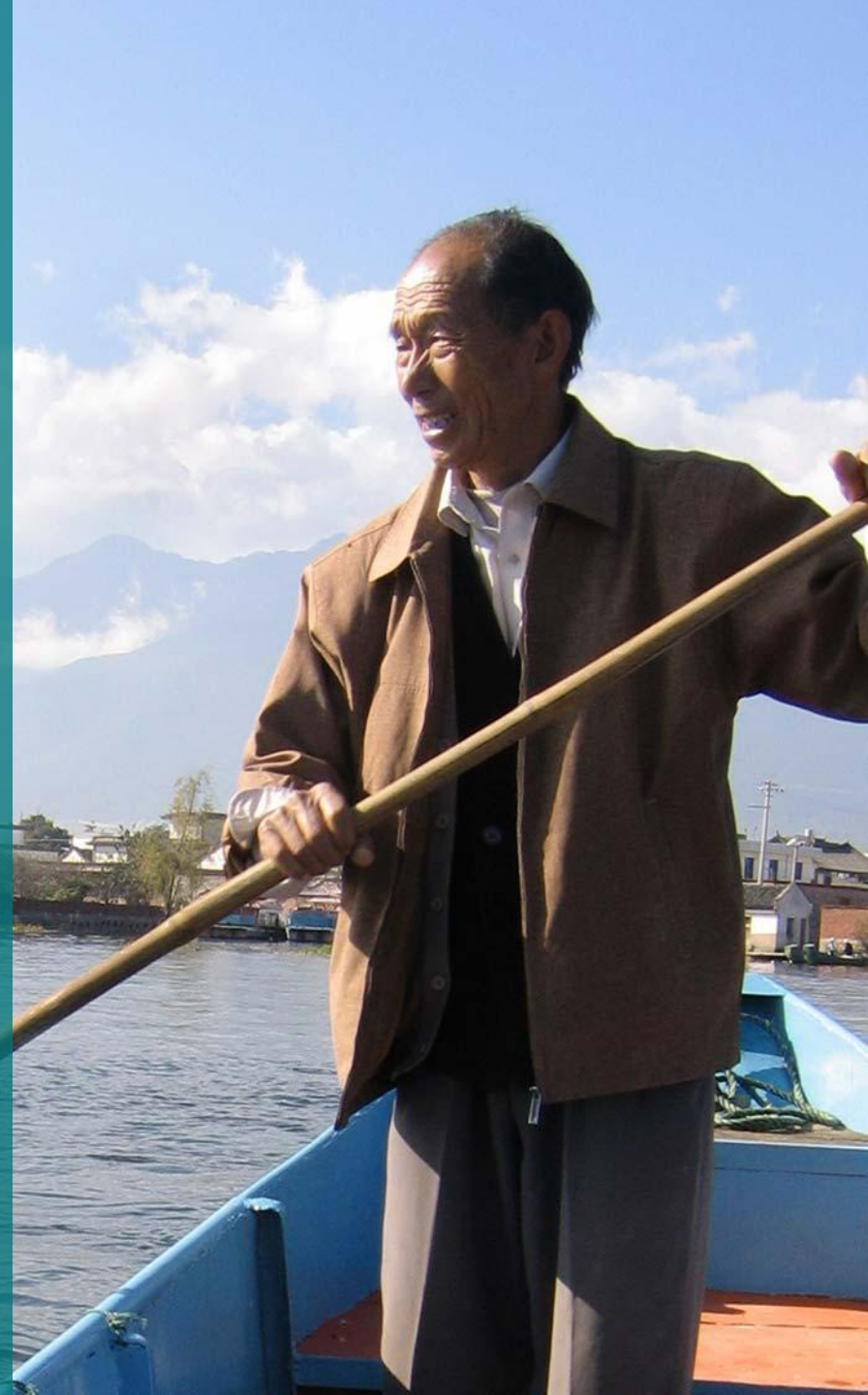


# THE IMPLICATIONS

Technology can deliver tangible benefits

# WHAT CAN WE LEARN FROM WUXI?

- **Use existing culture and customs** to diffuse initiatives into society: make smart city development acceptable for the wider populace
- **Involvement must be pervasive** – starting at community level and incorporating district and city-wide initiatives
- **Leverage digital youth's skills** to train the less skilled, elderly or impoverished to use smart devices and channels, increasing awareness and involvement of citizens of all ages and socio-economics



# ENGAGE CITIZENS IN TACTICAL AND STRATEGIC PROJECTS

## TACTICAL

- Enable rapid response mechanisms via online portals and living labs
- More informal projects visible in the community – applications days, technology training, square culture
- Promotion of engagement opportunities

## STRATEGIC

- Forward-thinking citizens involved early on
- More participation in referendums
- Increase progress reports
- Close-to-personal-life implementations

- Ensure that stakeholders play a role in increasing awareness of participation opportunities
- Continue formally organized projects as well as soliciting involvement in informal projects
- Provide access to data to encourage development initiatives
- Focus on tactical involvement first
- Celebrate and promote successes

# NEW MODELS, NEW ROLES

- Create new channels for citizen engagement
- Formalize informal channels

**BE A PROMOTER/SPONSOR**

**BE AN INTEGRATOR**

- Integrate ideas and what were siloed solutions into new, broader solutions
- Deliver better cost savings and benefits

- Match people to projects to leverage community talent
- Develop champions
- Canvas the globe for best practices

**BE A MATCHMAKER**

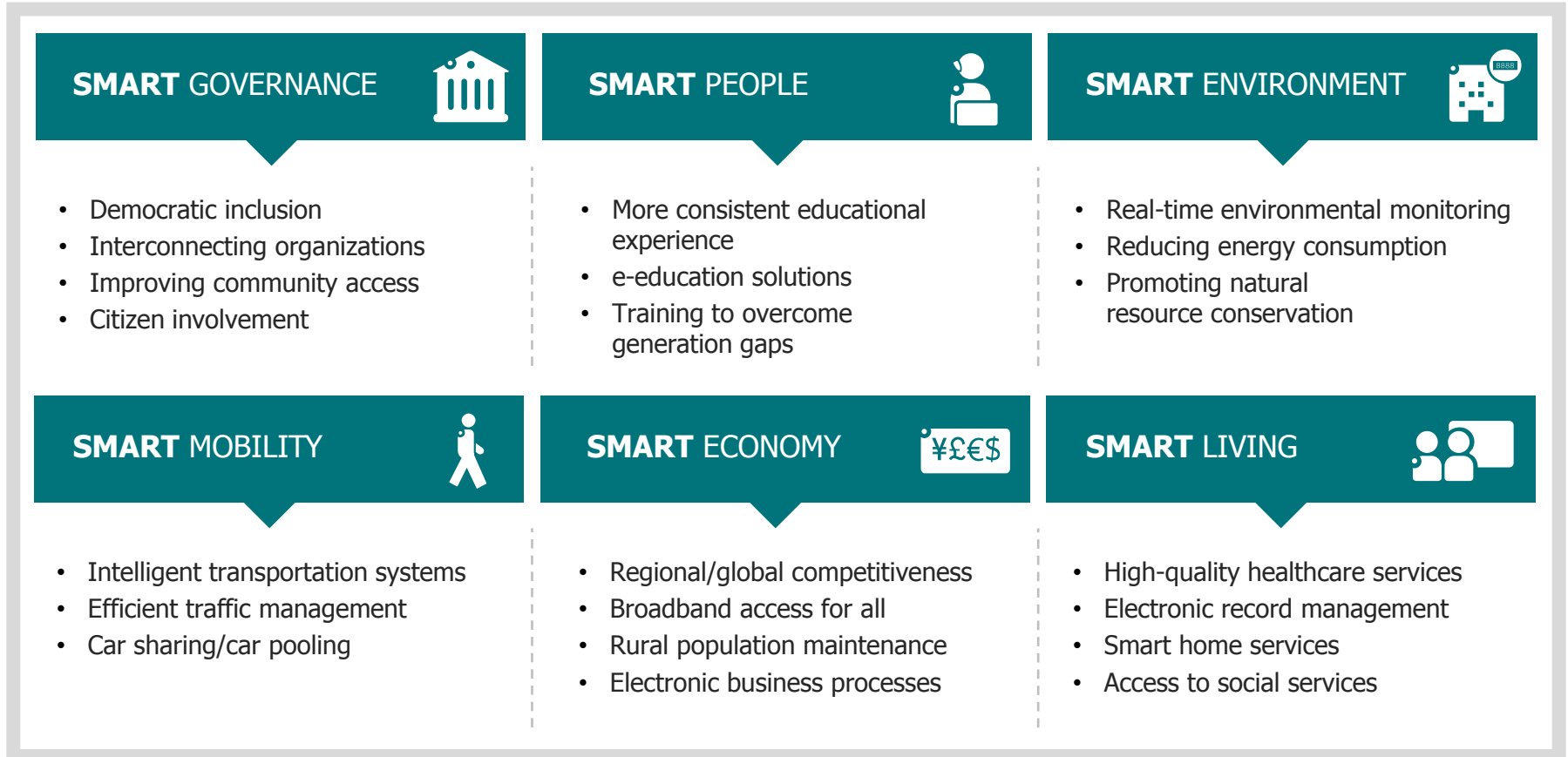
**BE A TRANSLATOR/TEACHER**

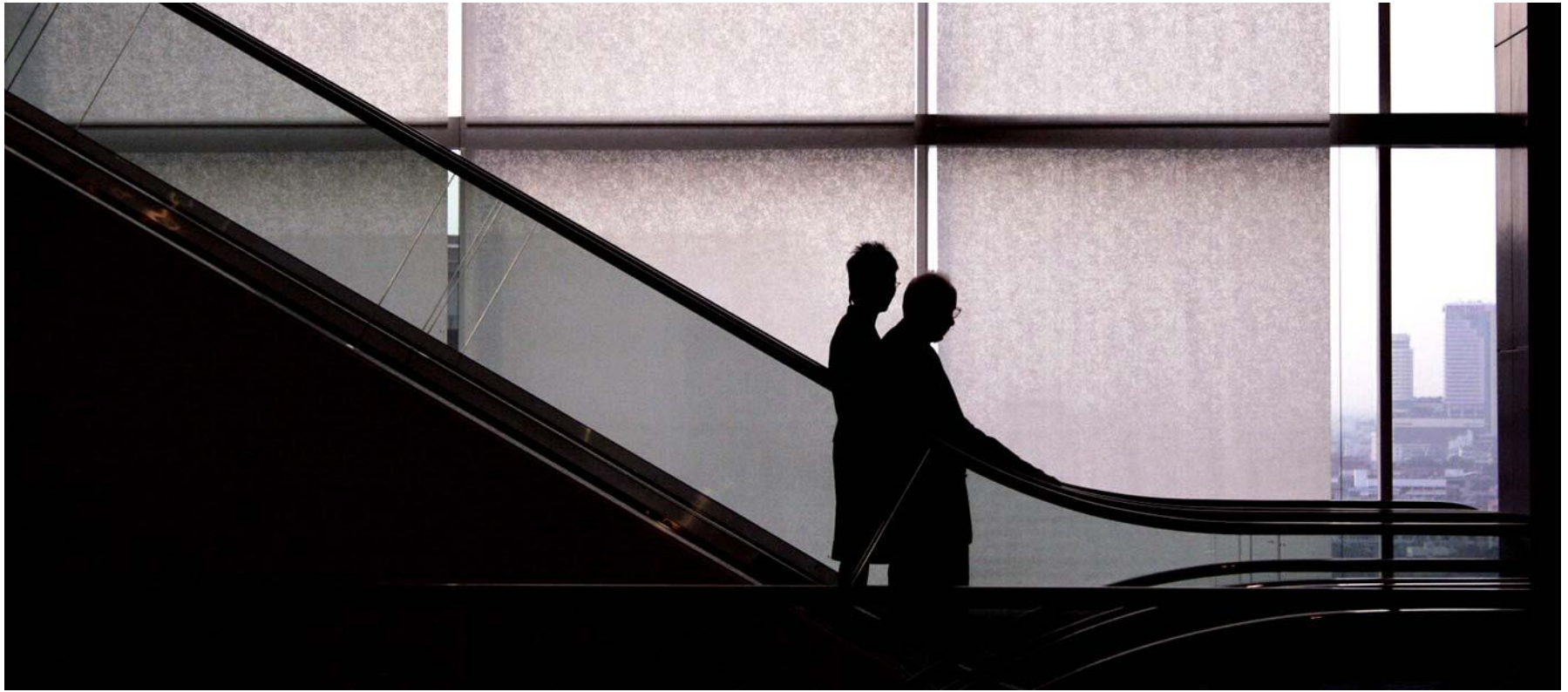
- Bridge the needs of citizens, NGOs and cities by applying technological solutions to everyday needs
- Educate and train to overcome fears



# THE OPPORTUNITIES ARE HUGE

When the model evolves, there are vast possibilities for **innovation and new business**





## OUR SUPPORT

Alcatel-Lucent can help you realize the smart city vision

# EMPOWERING A SMARTER AND MORE SUSTAINABLE COMMUNITY

Customer premises

Community operation control center



Environment



Healthcare



Security



Lifestyle



Energy



Transportation



Retail



Industry



Tourism



Automotive



Local government



Home



Converged access network

Converged backbone

# ALCATEL-LUCENT SUPPORTS SMART CITIES

## KNOWLEDGE

- Research Insights
- Modeling/consult/design
- End-to-end project management
- R&D focused on solutions for social, economic and eco-sustainability challenges

## TECHNOLOGY, SERVICES AND APPLICATIONS

- High Leverage Network: GPON, FTTx, optics, IP, wireless (LTE, lightRadio)
- CloudBand
- Applications and customer experience management
- Urban Traffic Management
- Public safety: always on first responder
- Smart Grid and grid modernization
- Train-to-ground communication

## EXPERIENCE

- Partnership, ecosystems development – Greentouch™ and ngConnect
- National/regional/metro deployment
- Strategic Industries and public sector
- Global Service Provider Operations
- Standards bodies and regulators
- End-to-end holistic project integration

# MORE ABOUT SMART CITY CITIZENS

alcatel-lucent.com/mci


Research lead:

Debbie Fisher, Director, Alcatel-Lucent  
Market & Consumer Insight

Research team:

Louis Witters, Director Alcatel-Lucent  
Market & Consumer Insight

Revital Marom, Head of Alcatel-Lucent  
Market & Consumer Insight


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## Market and Consumer Insight




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Abstract | Executive Summary | Market Analysis | Blog | Video



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Gene's story | Pablo's story | Thierry's story | Patricia's story | Executive Presentation



**Megatrends - A Wave of Change Impacting the Future**  
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Blog: Forging new frontiers, even virtual ones, has its risks and rewards  
Article: Chattanooga's Safe City Orchestra  
Promise and Peril of Hyperconnectivity for Organizations and Societies  
Blog: Getting smart about smart cities  
Soaring into the cloud - Understanding the market opportunity for cloud services  
Creating a better customer experience for small and medium enterprises

### Market Knowledge Sharpens your Business Edge

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### Urbanization and ICT

**The role of the ICT in the formation of the Neo-urbanization phenomenon; A live research in India**  
Understanding the Neo urbanization phenomenon; the redefinition of remote areas as a result of ICT in Emerging countries. **NEW!**  
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