

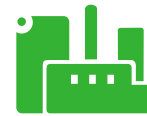


THE MISSING PIECE:
VOICE OF SMART CITY CITIZENS
 CHATTANOOGA: FROM DIRTY TO GIG CITY



CHATTANOOGA IN FOCUS

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



1800s – called the
Dynamo of Dixie for its

**THRIVING
MANUFACTURING**



1970s – known as the

DIRTIEST CITY
in the US



Today – has become a
gig city with the

FASTEST INTERNET
in North America



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.

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 identify city categories
- 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

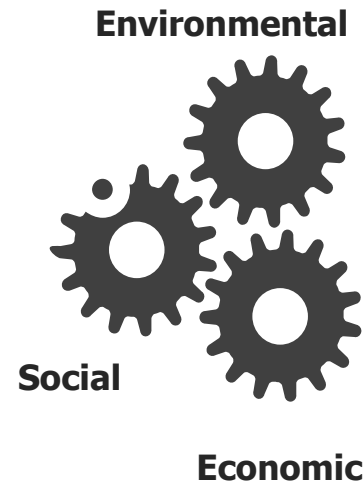
Fragmented Box:

- Independent projects
- Public-private funding

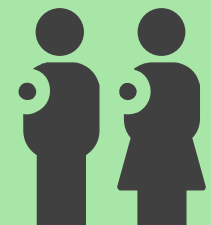
Black Box:

- 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

UNDERSTANDING THE CITIZENS

Other studies have neglected the voice of the citizen

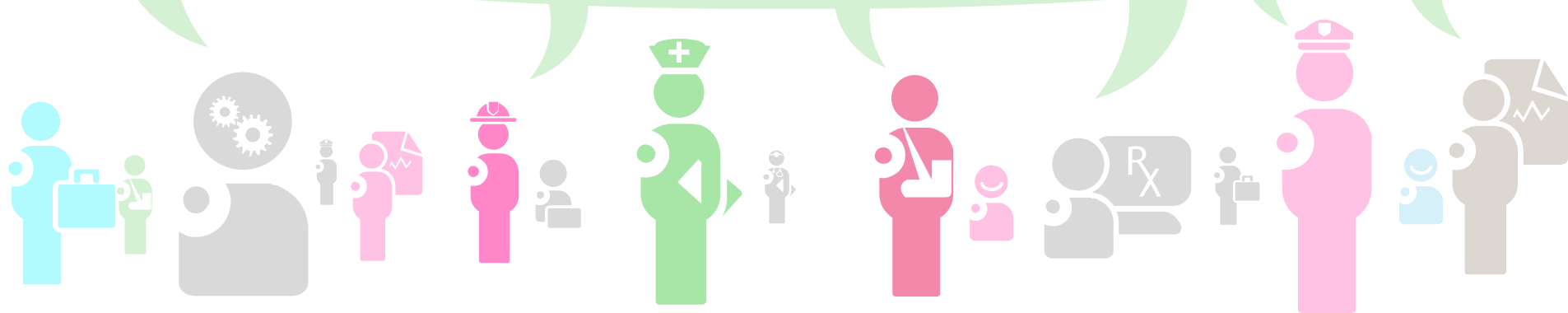
We can understand resulting implications for key stakeholders including city leaders, NGOs, regulators, enterprises, utilities, and service providers if we interpret:

• Their **views**

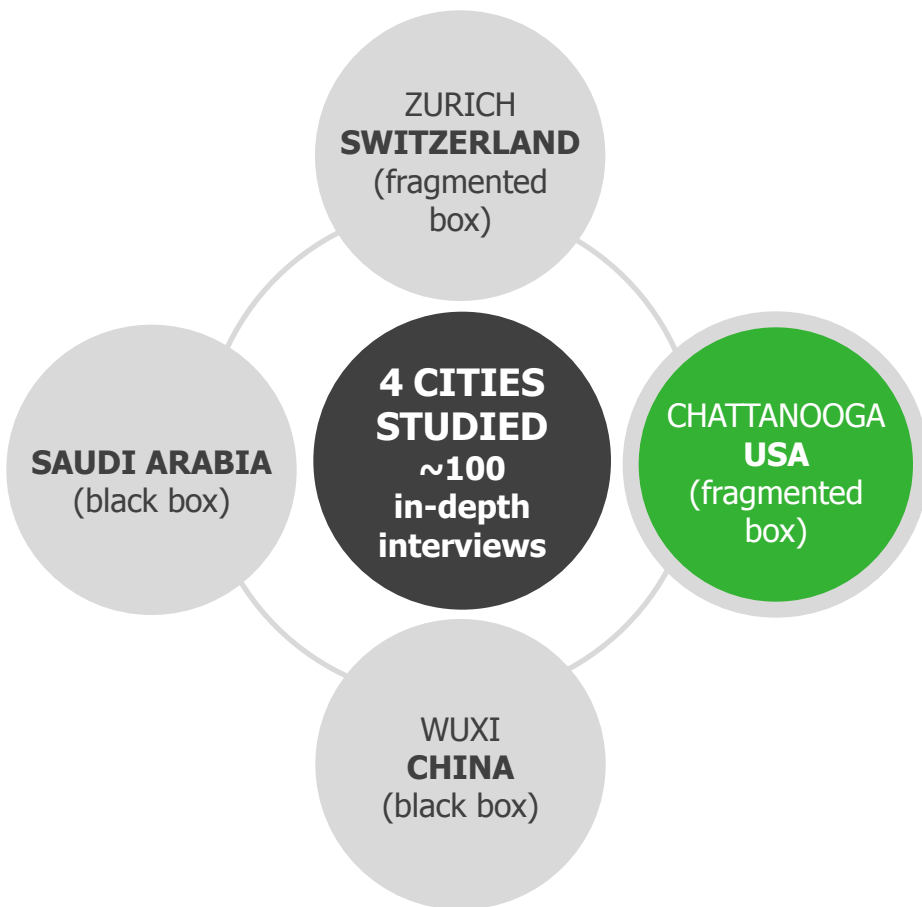
• Their **needs**

• Their **level of involvement**

• Their **engagement models**



MEETING THE CHATTANOOGA CITIZENS AND STAKEHOLDERS



36 IN-DEPTH INTERVIEWS

Radiology, insurance, real estate, education, IT, marketing services, architecture, public safety, utility service provider, venture capitalist, NGOs, tourism, city government

- 8 female
- 28 male
- 26 face-to-face interviews
- 10 telephone interviews
- Wide social demographic



THE CITY

Why put Chattanooga in the spotlight?

THE DYNAMO OF DIXIE

Successfully reinventing itself

THE CITY

- Previous economic decline due to losses in manufacturing sector
- Named the dirtiest city in America in the 1970s
- Turnaround initiated in the 1980s by civic leaders, with strong NGO support, yet struggled with a lack of city identity
- Investments made in PPPs, citizen engagement, strategic planning, visioning and transformative projects

THE CHALLENGES

- Continuing downtown redevelopment
- Improving the educational system
- Reducing crime and poverty
- Upgrading aging energy infrastructure
- Bridging urban and rural communities

THE SMARTNESS

- **Alcatel-Lucent's Fiber-to-the-Home**
 - smart grid and high speed open broadband access
- Multipurpose smart lighting
 - motion sensor lights, rain gauge and air sniffer
- Smart transportation, including electric buses
- Supports \$4B in economic growth





THE CITIZENS

Understanding the missing voice


ENVIRONMENTAL 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.

 When fuel costs rose, a local transportation company with 8000 trucks used our high speed computer modeling. The CFO announced they had saved \$68 million last year, which was a 10% cost reduction.”


 **Male, computer services**


TRANSPORTATION

 If you're a patient your anxiety level is markedly reduced now because your referring doctor can act on your problem almost immediately, rather than wait weeks for a decision to come back based on imaging results.”


 **Male, radiologist**

HEALTH

 It would be great if the gig spurs all different types of skills – like a bio-medical hub, entrepreneurial hub, gaming hub. That would help to fill up the city with all types of people.”

 **Female, real estate development**

ECONOMIC

 We already draw people from different countries to our regatta every summer. Now we're involved in a trial to link sensors to a graffiti monitoring system in River City which can help make the riverfront even better.”

 **Male, high tech development**

ENVIRONMENT

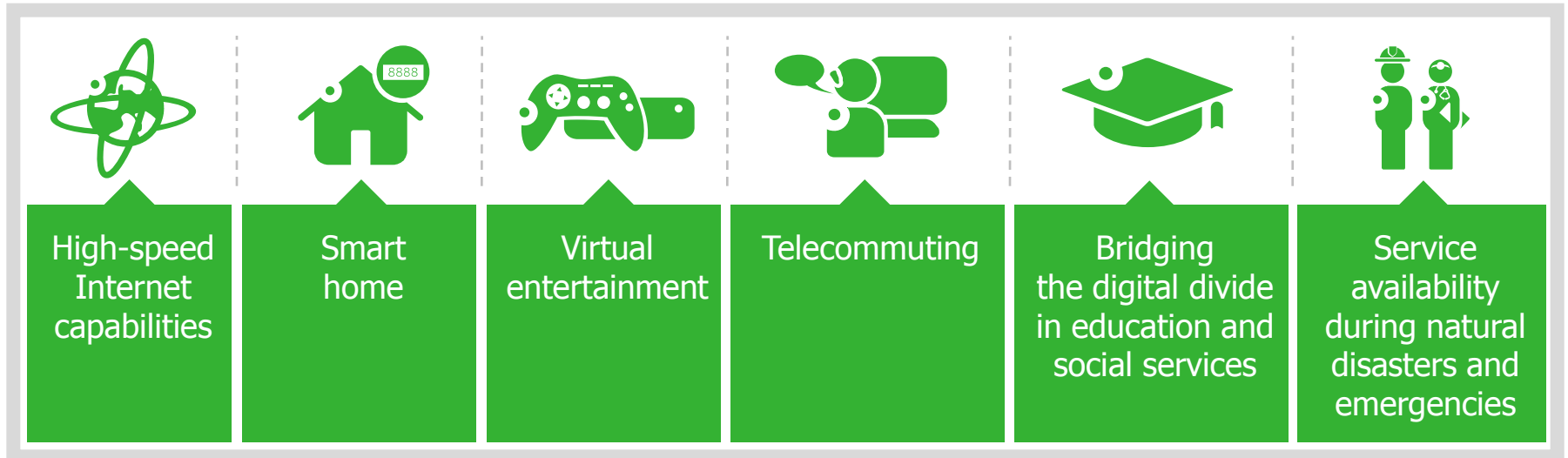
 The technology is supporting us to develop critical thinkers – whether they become teachers, game developers, or radiologists. We are molding real world problem solvers.”

 **Female, education**

SOCIAL

PERSONAL SERVICES INTEREST CITIZENS

Citizens are interested in services that **deliver tangible benefits** to their daily life at home and at work – and they want to be involved in developing them.



Because of the connectivity I could stay here instead of moving to Boston, and make the same kind of living and have the same kind of impact in that field."

Smart grid is key – it's been a year of disasters, storms, tornados etc. and I've hardly lost power. They had 45K customers back online in 45 seconds instead of 45 hours."

Male, marketing services

Male, tourism



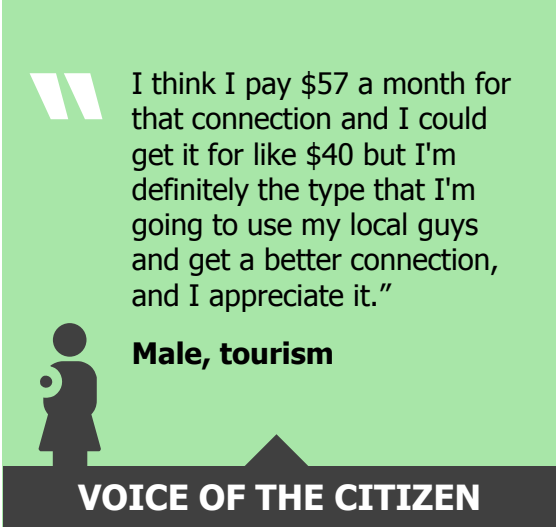
VOICE OF THE CITIZEN

FOR NEW SERVICES: RELIABILITY AND INVOLVEMENT ARE KEY

Citizens encourage competition, but prefer a provider who delivers reliable service and is adaptive to local needs – **uptime, service restoration and responsiveness** are vital.

There is an expectation for an all-encompassing networked city and service development:

- Replacing aging infrastructure with high speed gigabit broadband network and smart grid
- Personalized, responsive customer service with ability to solve problems quickly
- Visible, active community involvement for local presence delivers market share gains



“ I think I pay \$57 a month for that connection and I could get it for like \$40 but I'm definitely the type that I'm going to use my local guys and get a better connection, and I appreciate it.”

Male, tourism

VOICE OF THE CITIZEN

MOVING BEYOND SMART CITY

Citizens take pride in **environmental improvements** to the city. They expect further **collaboration and innovative ideas** to make the city smarter.

Can-do attitude:

- Leveraging technological infrastructure to improve lives for the underprivileged
- Responsiveness to citizen feedback
- Transparency and access to information



“ I would say a smart city is a city that focuses on producing results for the citizens, that puts collaboration first, and doesn't worry about who gets the credit. **”**

Male, chamber of commerce

VOICE OF THE CITIZEN

STARTING CONVERSATIONS

Citizens are active in smart city projects and want their involvement to continue.

EXISTING ENGAGEMENT MODELS

- Visioning process
- Open political framework
- Longstanding regional planning
- Active NGO programs
- Venture capitalist support
- Community technology council

NEW ENGAGEMENT MODELS PAYING DIVIDENDS

- 'Intentional' smart city conversations
- Gig prize contest
- Service provider organized community-wide outreach
- NGO sponsored citizen surveys

ACTIVE ENGAGEMENT

Citizens engage in a broad range of ways, using multiple available channels.

The infographic consists of three horizontal panels, each representing a citizen's voice. Each panel features a quote, a demographic label, and a silhouette of a person. The panels are separated by a vertical dashed line. The bottom panel is wider than the top two.

Male, tourism
"My neighbor wanted to get a small group together to talk about the downtown high school and now she needs the convention center because everyone has heard about this meeting."

Female, business professional
"Chattanooga does a really good job of letting anyone who's willing to work hard get involved. I moved here in 2007 and found it pretty easy to get involved in different initiatives going on. Young people are on board."

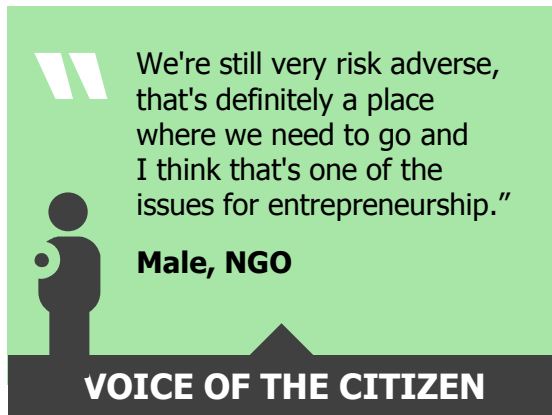
Male, computer services
"When I moved here, I was surprised how much people all over town, such as NGOs, real estate developers and the local utility, actually ask and listen to citizens."

VOICE OF THE CITIZEN

OVERCOMING CONCERNS

Two levels of concern – personal and community.

- **Personal:** privacy concerns are real, but most people recognize them as a part of their way of life – and are willing to put up with this to reap the benefits
- **Community:** need to incorporate dissenting voices to avoid “groupthink”



“We're still very risk adverse, that's definitely a place where we need to go and I think that's one of the issues for entrepreneurship.”

Male, NGO

VOICE OF THE CITIZEN

Ultimately, citizens believe that improving quality of life is worth the risks involved in smart city development



THE STAKEHOLDERS

How are roles evolving to enable smart development?

THREE MOTIVATIONS SHAPE THE AGENDA

Economic, social, and environmental motivations play an equal role in driving smart city development in Chattanooga.



We are one of the few cities in the world that has the technological advantage of this Internet infrastructure. It is a key differentiator and is why we are bringing companies here."



Male, venture capitalist

ECONOMIC



We had residents from our housing development talking about after-school programs with their kids, to senior citizens who want to learn something different."



Female, NGO leader

SOCIAL



if you can monitor and reward and incentivize people who do smart things in their home, that could be tremendously more influential in terms of saving energy than adding insulation. "



Male, service provider

ENVIRONMENTAL



ECONOMIC GROWTH BRINGS BENEFITS TO VERTICAL INDUSTRIES



“We’ve added 13,000 new jobs since 2002.”
Male, Chamber of Commerce

COMMUNITY WIDE PARTICIPATION

Collaboration yields positive benefits.

- City leaders, NGOs, utility providers and real estate developers foster public participation
- City CIO fosters cross-departmental solutions
- Active efforts are made to increase transparency and open government
- Building of a gig city
- Can-do attitude boosts Chattanooga identity
- Increased tourism
- Business incubation delivers new jobs



It's elected officials who've created that climate that have got private businesses investing in this community. That's one of the reasons why Amazon located here. That's one of the reasons why Volkswagen located here. That's one of the reasons why young people are coming back here."

Hamilton County leader



PRACTICE MAKES PERFECT

Seeing, learning, growing.

- Community leaders visited other cities to learn and avoid pitfalls:
 - Over 100 people visited BMW plant in Greenville, South Carolina to prepare for the new Volkswagen plant
 - A visit to Austin established Green Spaces initiative for greener buildings
- Now other cities learn from Chattanooga:
 - An NGO recently collected 26,000 face-to-face and online surveys in Chattanooga, an exercise which is now being replicated in Calgary, Canada

“That’s part of the smart city. If you can get access and opportunity for everybody and you need communication & awareness, that comes first.”



Male, Venture capitalist

“Activity really started in the 80s with Chattanooga Venture group which was a public engagement process on what projects to work on to improve downtown.”



Male, Chamber of Commerce

“We’re always on the lookout for the next big thing. That’s just who we are now. That’s made possible by the gig.”



Female, NGO

PUSHING BEYOND SUCCESSFUL CITIZEN ENGAGEMENT

Citizens are **willing to participate** and want to be part of smart city development. Stakeholders are creating an environment where **citizen voices are heard**.

EXISTING ENGAGEMENT PERCEPTIONS

- Citizens have a high level of involvement and knowledge
- Strong, varied communication channels are needed
- Hundreds share their view in planned open meetings
- Involvement from across the spectrum – from the poorest residents to CEOs
- Young people have a voice via established organizations

CONCERNS

- Public service projects have lower levels of involvement
- Uncertainty around how to use vast amount of smart city data effectively



THE IMPLICATIONS

Technology can deliver tangible benefits

WHAT CAN WE LEARN FROM CHATTANOOGA?

- Offering multiple channels for engagement produces greater benefits
- A collaborative ecosystem produces innovative solutions that span urban-rural communities
- New sense of civic pride and identity emerges via smart city development
- Citizen engagement can produce share gains for service providers



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
- Promotion of engagement opportunities

STRATEGIC

- Forward-thinking citizens involved early on
- More participation in referendums
- Increase progress reports

- 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

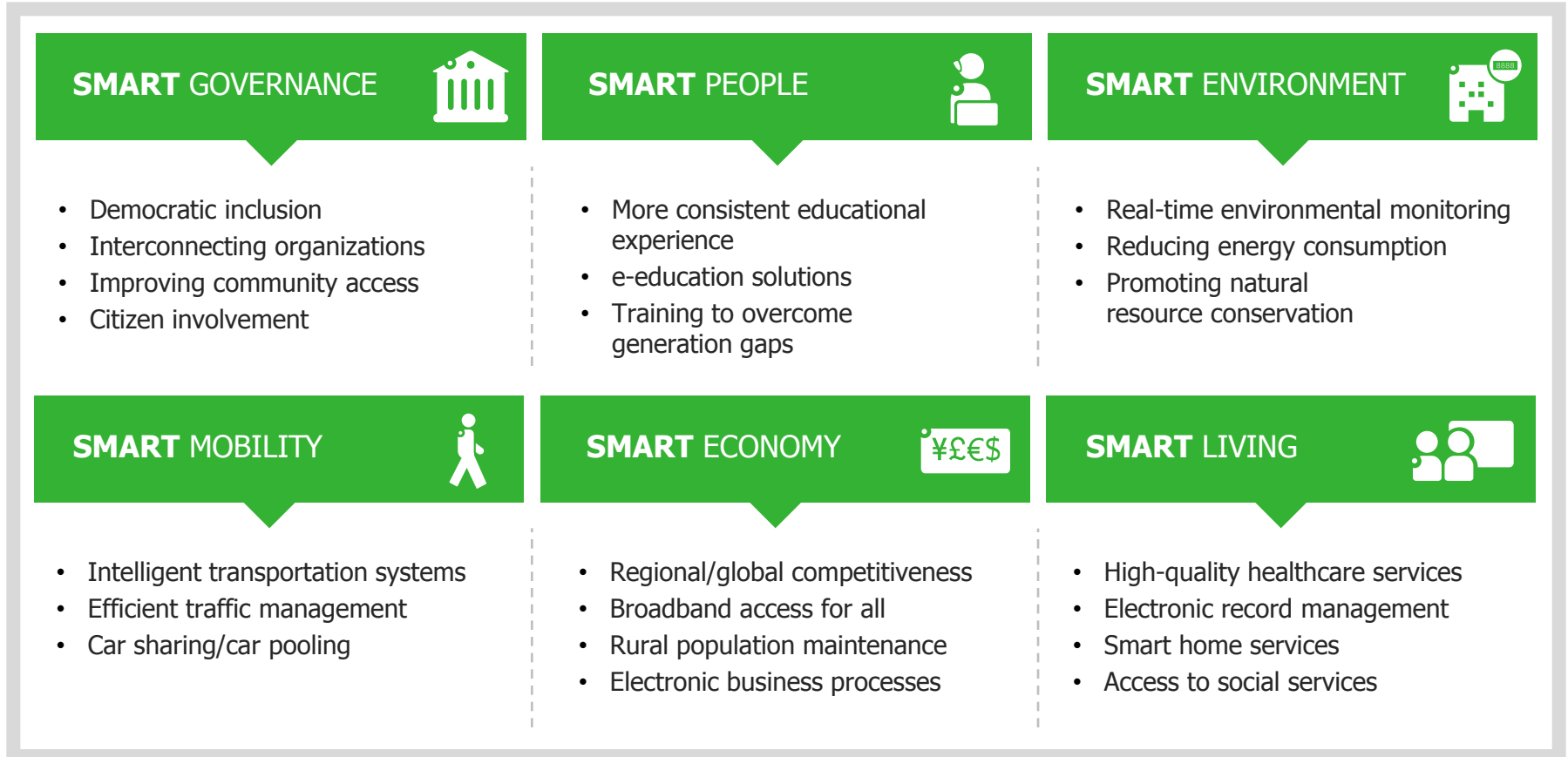
BE A MATCHMAKER

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.**





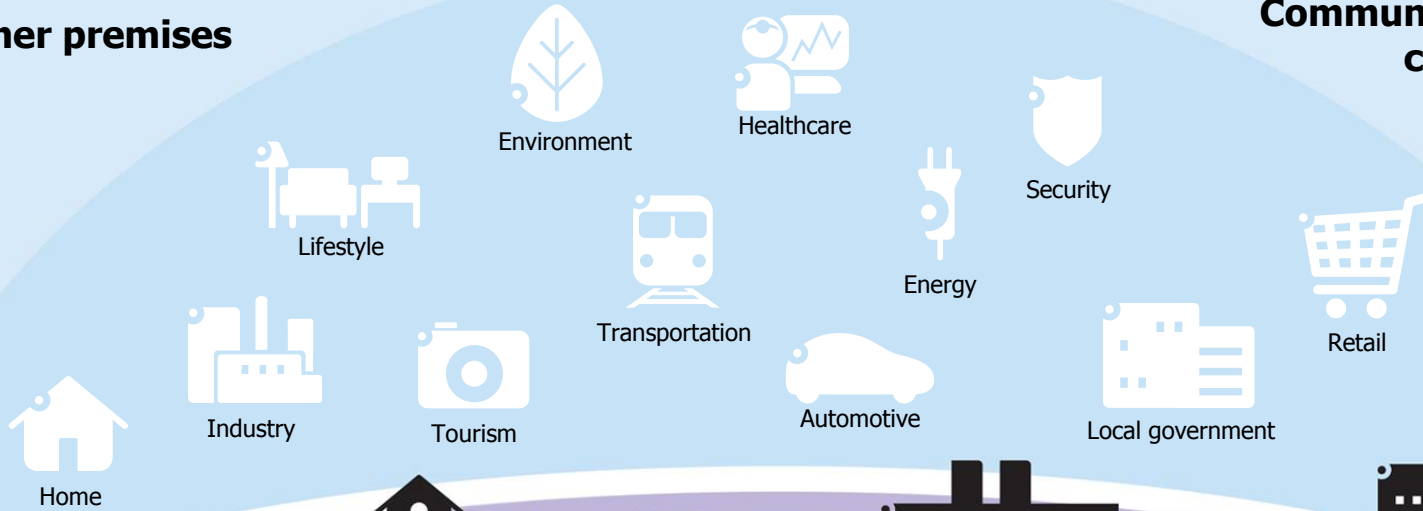
OUR SUPPORT

Alcatel-Lucent can help you realize the smart city vision

EMPOWERING A SMARTER AND MORE SUSTAINABLE COMMUNITY

Customer premises

Community operation control center



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

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Market Knowledge Sharpens your Business Edge

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