THE MISSING PIECE: VOICE OF SMART CITY CITIZENS
SAUDI ARABIA: FROM DESERT TO KNOWLEDGE ECONOMY
SAUDI ARABIA’S SMART CITY IN FOCUS

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

A unique project:
• New smart city developed to reduce reliance on petrochemical industry
• Lures back Saudis studying abroad
• A work in progress: new Greenfield cities under development
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

<table>
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<th>INVESTIGATING SMART CITIES</th>
<th>FOUR MODELS WERE DISCOVERED</th>
<th>THREE MOTIVATIONS FOR DEVELOPMENT IDENTIFIED</th>
<th>WHAT WAS MISSING?</th>
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<tr>
<td>Three-part research:</td>
<td>Dream Box:</td>
<td>Environmental</td>
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<td>• Analysis of 18 cities to identify city categories</td>
<td>• Turnkey city</td>
<td>Social</td>
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<td>• Deep dive on 7 cities</td>
<td>• Public-private partnership</td>
<td>Economic</td>
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<td>• Broad study of 52 cities to assess smart motivations</td>
<td>IT Box:</td>
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<td>• Focus on IT excellence</td>
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<td>Fragmented Box:</td>
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<td>• Independent projects</td>
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<td>Black Box:</td>
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<td>• Government-controlled</td>
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<td>• Closed private ecosystem</td>
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More info about the four models:
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 SAUDI CITIZENS AND STAKEHOLDERS

4 CITIES STUDIED ~100 in-depth interviews

CHATTANOOGA USA (fragmented box)

WUXI CHINA (black box)

ZURICH SWITZERLAND (fragmented Box)

SAUDI ARABIA (black box)

34 IN-DEPTH INTERVIEWS

Business, armed forces, retail, office, education, utilities, finance, domestic

- 5 female
- 29 male
- 20 citizens
- 14 stakeholders
THE CITY
Why put Saudi Arabia’s smart city in the spotlight?
# A Greenfield Development

Broadening opportunities to reduce reliance on petrochemicals

<table>
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<th>THE CITY</th>
<th>THE CHALLENGES</th>
<th>THE SMARTNESS</th>
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<tr>
<td>• A major shift from traditional Saudi cities</td>
<td>• Limited natural resources, e.g. water</td>
<td>• Networked, high-speed computing and internet</td>
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<td>• Focus on knowledge-based economy</td>
<td>• Building infrastructure from scratch</td>
<td>• Smart buildings</td>
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<td>• Estimated to create 500,000 jobs</td>
<td>• Addressing the need to expand investment base to include a wide range of</td>
<td>• Smart transportation</td>
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<td>small and large backers</td>
<td>• E-government, city wide portal</td>
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<td>• Delivering on the promise: creating broad, ample employment opportunities</td>
<td>• E-bulletin boards</td>
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THE CITIZENS
Understanding the missing voice
ECONOMIC, SOCIAL AND ECO-SUSTAINABILITY IN EQUAL MEASURE

Citizens understand the smart city definition, and recognize the resulting economic, social, and eco-sustainability benefits.

• **Economic** – creating a knowledge-based economy for well-educated Saudis who have studied abroad and returned home – building a new, broader economy in Internet, high tech and green tech

• **Social** – opening up new opportunities for all Saudis, men and women. Creating a better way of life

• **Eco** – creating a greener way of life with smart buildings and new energy sources

"I know about smart cities from online advertisements and they are really amazing. I think we should build the best one ever."

Male, administrative employee
IMPROVED QUALITY OF LIFE

Citizens understand the significant cultural and social impact that smart cities bring.

- **Education**: “I believe as a father that schools should send us an SMS if the kid is absent.” Male, administrative employee

- **Entertainment**: “They should provide new, innovative, entertaining activities for families.” Female, housewife

- **Convenience**: “The smart city is better in terms of living standards. We have all our needs without going out.” Female, bank worker

- **Prosperity**: “The smart city should have the features of the smart city such as having huge buildings, more workers, more technology and a highly civilized lifestyle.” Male, businessman

- **Social Quality of Life**: “It is developed, and it has a more open life mode, and everything in this smart city is nice.” Male, businessman
BUILDING ON THE BASICS

Citizens have high expectations, and want services offering benefits on three levels:

**BASIC BENEFITS**
- Better housing; clean water; working sewer systems; access to food; healthcare; education; better telecommunications and Internet

**INNOVATIVE BENEFITS**
- Faster and easier access to government; better healthcare with shorter wait times; safer, friendlier neighborhoods; high-speed Internet; full coverage of network and mobile services

**ULTRA BENEFITS**
- A significant social and cultural shift, evoking emotional well-being, pride and the feeling of being part of something unique

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**Voice of the Citizen**

I imagine that we can create what we wish for, and to do that we will need the best technology in the world – and this is what we want.”

Male, businessman
FOR NEW SERVICES: RELIABILITY AND AFFORDABILITY ARE KEY

Citizens like to have the choice that an open, competitive services market offers.

People want more interaction and better quality:

• Better customer service
• More reliable service: high speed, always-on access
• Flexible payment and finance options

New services must be relevant and applicable to everyday life – from health and education to transport and e-government.

The smart city is different from the ordinary city. Having better and higher technology services is the best motivation.”

Male, energy worker
CONCERNS OVER LIFESTYLE AND TECHNOLOGY

Citizens need to see that the smart city can live up to its promise – without eroding traditional values.

Key concerns revolve around:

• Finding a good job, based on the smart city delivering the broad economy it promises
• Limiting impact on the family-oriented lifestyle
• Handling increased contact with outsiders
• Coping with a busier, more chaotic pace of life
• Attaining the feeling of uniqueness – the ‘ultra benefit’

Ultimately, people want reassurance that their decision to live in the smart city was the right one.

"The only thing I can see is that life can be very hectic and fast when having all advanced technologies with you. We need to make sure that it does not go in that direction."

Male, entrepreneur

"Making an individual feel special and unique is not an easy thing to do. They should pay attention to this aspect to maintain high satisfaction."

Male, businessman
CITIZENS ARE READY TO INCREASE THEIR INVOLVEMENT

Citizens show high interest in boosting engagement with service providers and stakeholders, at both strategic and tactical levels.

**TACTICAL: INDIVIDUAL PROJECTS**
- Citizens are already providing tactical feedback on services
- There is a willingness to work with providers to develop new services

**STRATEGIC: TOP-LEVEL DIRECTION**
- Citizens feel left out today – more engagement channels are required
- Knowledge workers are interested and want to be involved
- People believe that government should take the lead, involving citizens and providers

"To create this community you will need to have support from the citizens... everyone has a role."

Female, bank worker

"I believe that it should be a collaboration between the businessmen and the citizens, because all levels of investments are needed. For example, schools and universities are big investments."

Male, businessman

VOICE OF THE CITIZEN
THE STAKEHOLDERS
How are roles evolving to enable smart development?
SOCIAL AND ECONOMIC MOTIVATIONS DOMINATE

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

Who is involved?

- **Large real estate developers:** enabling services and infrastructure, obtaining investment, acting as a core communication channel
- **Private enterprise:** the dynamo, driving new businesses
- **Government and regulators:** promoting participation, making key decisions, efficient regulating & monitoring

"Citizens care a lot about this place and they would like to develop this area. This is great, and you don’t find it in many places. This is their country and they think that it has very big future, and that’s why they care a lot about it and they would like to develop it.”

Male, developer
BUILDING THE DREAM
Stakeholders need to create an ecosystem that includes the citizen to fulfill the smart city promise.

GRASS ROOTS BUSINESS
Attracting young entrepreneurs who can generate the desired broad economy

GLOBAL PARTNERSHIPS
Forging meaningful, productive relationships with leading universities and enterprises

MIXED INVESTMENT
Balancing short-term and long-term projects that attract both investors and inhabitants

ENGAGING CITIZENS
Adding more channels to enable involvement and to deliver the emotional benefits that citizens expect
THE IMPLICATIONS
Technology can deliver tangible benefits
WHAT CAN WE LEARN FROM SAUDI ARABIA?

• Technology is just the start
• Smart city developers and ecosystem players must deliver rational, emotional benefits that match citizens’ lifestyle expectations
• Citizens should have multiple channels which facilitate involvement and enable them to voice their ideas
• There is a need to balance short-term and long-term planning to overcome investment challenges and generate demand for greenfield cities
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
- Implementation of close-to-personal-life services

- 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

BE A PROMOTER/SPONSOR
- Create new channels for citizen engagement
- Formalize informal channels

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

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

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**

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<td>Electronic record management</td>
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OUR SUPPORT
Alcatel-Lucent can help you realize the smart city vision
EMPOWERING A SMARTER AND MORE SUSTAINABLE COMMUNITY

- Customer premises
- Lifestyle
- Environment
- Healthcare
- Security
- Energy
- Transportation
- Automotive
- Local government
- Industry
- Tourism
- Retail
- Home
- Converged access network
- Converged backbone
- Community operation control center
- High Leverage Network

Converged network
# ALCATEL-LUCENT SUPPORTS SMART CITIES

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<th>TECHNOLOGY, SERVICES AND APPLICATIONS</th>
<th>EXPERIENCE</th>
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| • Research Insights  
• Modeling/consult/design  
• End-to-end project management  
• R&D focused on solutions for social, economic and eco-sustainability challenges | • 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 | • 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

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AT THE SPEED OF IDEAS™