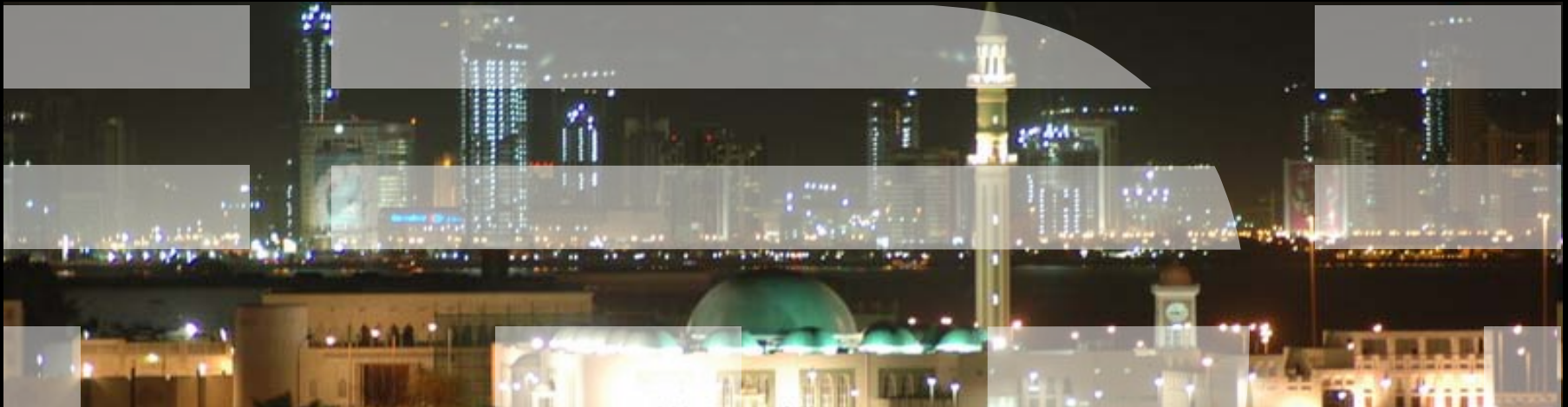




# Smarter Cities

*Unleashing the power of knowing to  
inspire, engage and experience change*

March 2012





Citizens are expecting **more**

**Citizens expect ...**

Security

Access

Opportunity

Prosperity

Progress

*Time*

*Walls,  
Roads*

*Water,  
Energy*

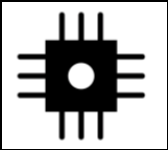
*Jobs,  
Education*

*Lifestyle,  
Culture*

*“Place”*

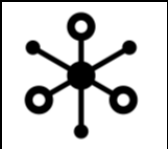
**Leaders deliver ...**





Our world is becoming

**INSTRUMENTED**



Our world is becoming

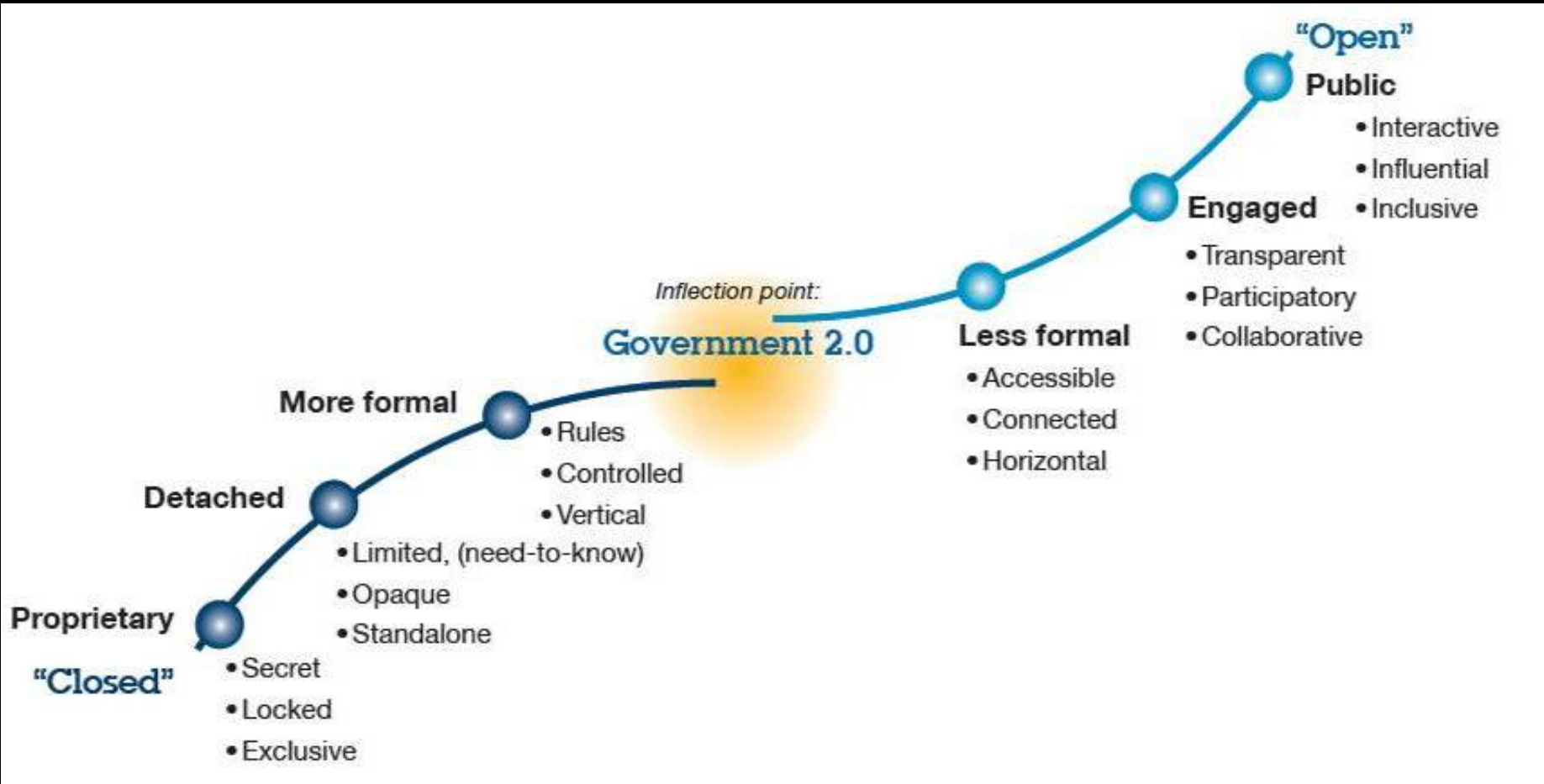
**INTERCONNECTED**



All things are becoming

**INTELLIGENT**

# Societal expectations are shifting



**Source:** *Opening up government: How to unleash the power of information for new economic growth*, IBM Institute for Business Value report, November 2011

# We all have the power to know



Smart traffic systems



Intelligent oil fields



Smart food systems



Smart healthcare



Smart energy grids



Smart retail



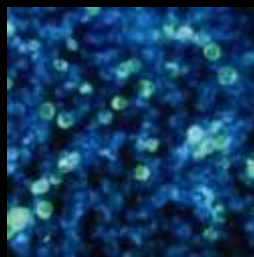
Smart water management



Smart supply chains



Smart countries



Smart weather



Smart regions



Smart cities

***“We will go beyond ... to systems that enable humanity to reach its greatest potential for human creativity, innovation and ingenuity.”***

- IBM Global Technology Outlook 2010, *Frontiers of IT*



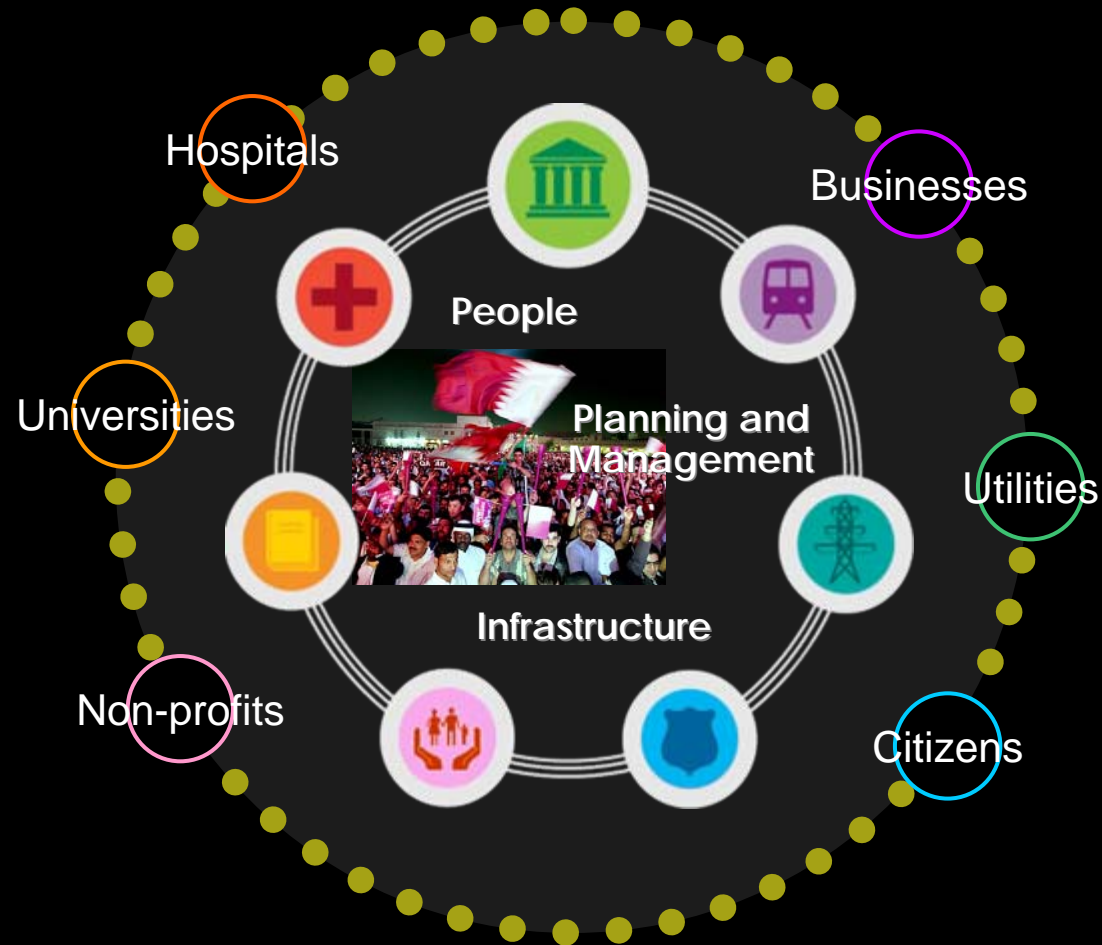
## What is a Smarter City?

- A city or district, metro or urbanizing region, or large property development that uses pervasive and integrated information and ICTs in urban systems to ...

| Address common issues ...                        | ... for shared outcomes                                  |
|--|--|
| Preserving culture while opening up              | A modern platform for Arab voices                        |
| Providing a positive, unique experience          | An attractive place in which to live, work, play, thrive |
| Assuring safety and security                     | “Worry-free” mobility                                    |
| Extending urban infrastructure                   | Infrastructure capacity & longevity                      |
| Balancing today’s growth, tomorrow’s stewardship | Sustainable development                                  |
| Increasing efficiency while reducing costs       | Optimized city services & operations                     |

## What are Smarter Cities doing? Key patterns ...

1. Engaging people to co-define (even co-produce) “what’s important” in context
2. Integrating and leveraging information to make better decisions
3. Coordinating resources to operate efficiently and effectively
4. Anticipating problems to resolve them proactively and manage risk





There are many different visions of a “smart city”



An Accessible City



The Healthy and Safe City



The Sustainable Eco-City



The Cultural-Convention Hub



The City of Digital Innovation



The City of Commerce



## Accessibility ... connecting “users” in context

**Delivery context:**  
**User preferences, device capabilities, environmental data**



**Resources:**  
**Resource and device-specific capabilities, alternative resources**

*With the 2022 World Cup just 10 years away ... a profound opportunity to provide a uniquely Qatari experience for citizens and visitors alike before, during and beyond the Games.*

# 2011's "Access my N.Y.C." pilot



September 23 to October 23, 2011    Lincoln Center on Jaffe Drive, New York

Access My NYC

- Accessible Transportation
- Plan a Route
- Points of Interest
- IBM THINK Exhibit
- Favorites
- Profile

IBM 100    About | Feedback

Home / Menu

IBM 100    Access My NYC

Back    Accessible Trans...    Home

- Public Transportation
- Paratransit (Access-a-Ride)
- Private Transportation
- N.Y.C. Taxi Stands
- Airport Transportation

Accessible Transport

IBM 100    Access My NYC

Back    Transit Route ...    Home

Origin: DoubleTree Metropolitan Hotel

Destination: 66 St-Lincoln Center

Date and Time: 09-27-2011, 5:19pm

Change

List    Map

For each subway or rail station, you can view station details, including entrance/exit details and service messages.

Accessible Transit / Walk Routes

IBM 100    Access My NYC

Back    Points of Interest    Home

Find Points of Interest Near Me

View by:

Category    Borough    Search

- Accommodations
- Aquariums & Zoos
- Architectural Landmark...
- Attraction Discount Pa...
- Cinemas

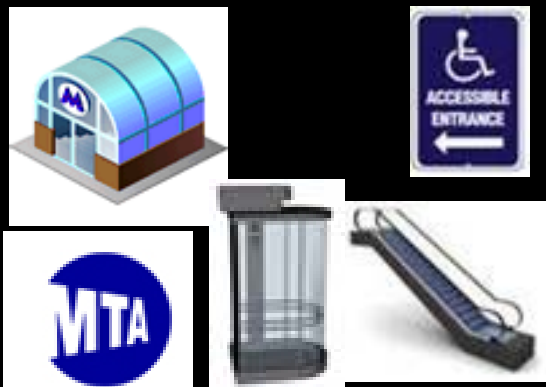
Accessible POIs\*

\* POI = Point of Interest

## Data used in the “Access my N.Y.C.” pilot

### Public Transit

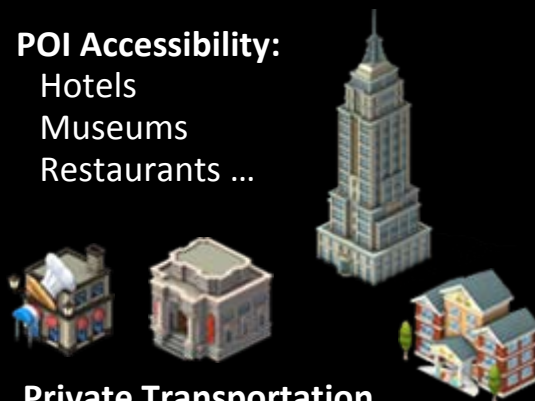
NYC Transit Bus & Subway,  
LIRR, Metro North RR, Long  
Island Bus, Bus Company  
ADA Compliance Status  
Accessible Entrances / Exits  
Real-Time Service, Elevator and  
Escalator Status



**Metro Transit Authority**

### POI Accessibility:

Hotels  
Museums  
Restaurants ...



### Private Transportation

Rentals (e.g. car, van,  
wheelchair)  
Transfers (e.g. airport,  
helicopter, ferry, rail/bus)



**Mayor's Office Disabilities**

### Private Transportation & Taxis

For-Hire Vehicles (black cars,  
luxury limos) and Taxi Stands



**Taxi & Limo Commission**

# Screen shots: "Access my N.Y.C." pilot

Home



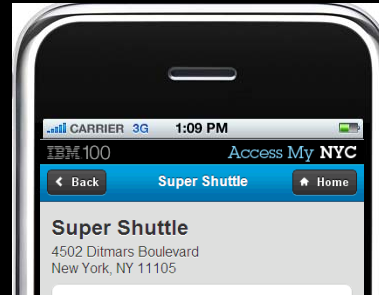
Profile with Ability Finder



Select a filter if you want the app to filter information relevant to specific physical impairments

- ☐ I have a hearing impairment
- ☐ I have a vision impairment
- ☒ I have a mobility impairment
- ☐ I have no physical impairment

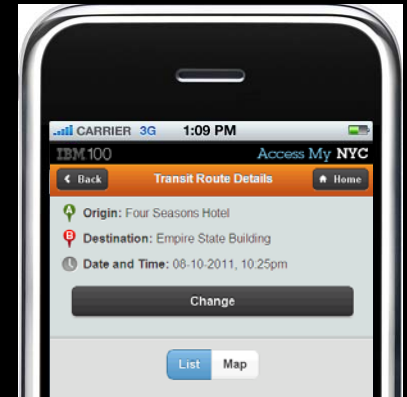
Private transport, airport to hotel



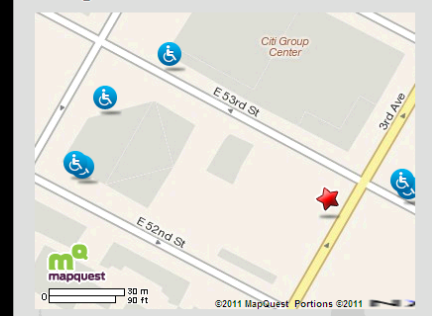
## + Accessibility Information

- SuperShuttle is committed to providing exceptional guest service for our customers with disabilities, including those who use wheelchairs and those who are accompanied by service animals. SuperShuttle does not discriminate against individuals with disabilities in the provision of its services.
- For transportation into airports, customers are required to make advanced reservations. When making an accessible reservation, customers should specify whether or not an accessible vehicle is required or if a service animal will be accompanying the customer.

Route planning



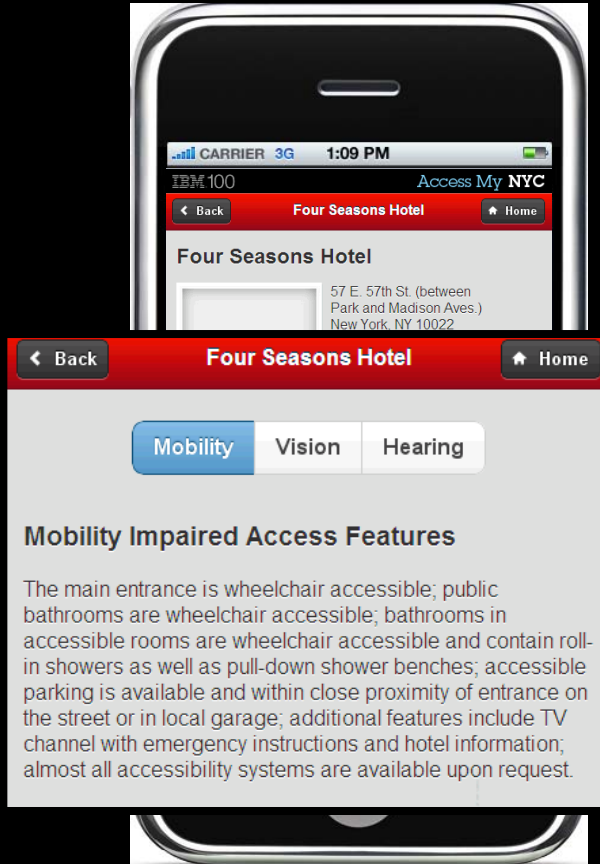
## Lexington Av/53 St



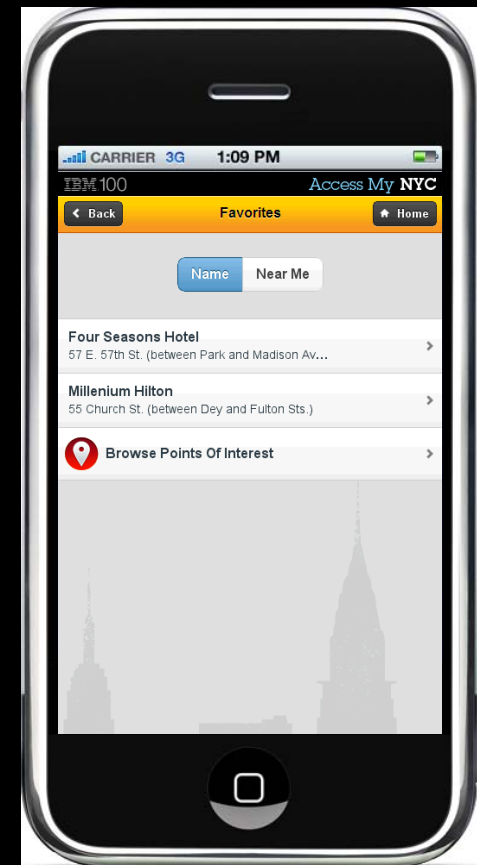
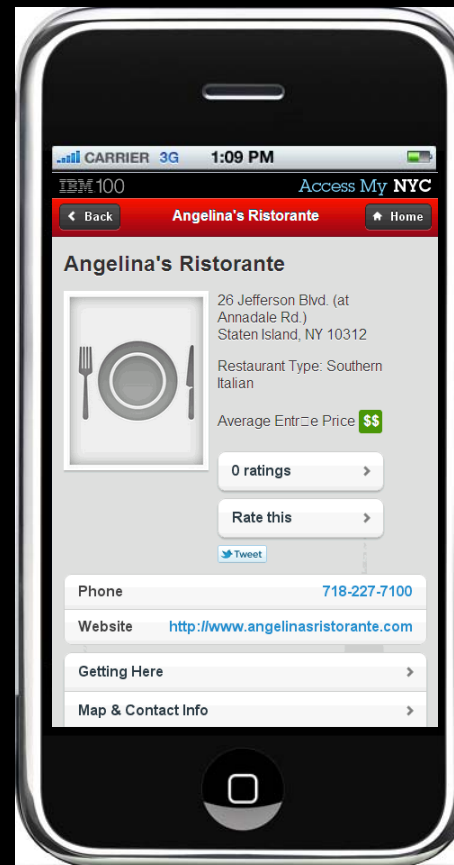


## Screen shots: “Access my N.Y.C.” pilot

Point of interest:  
Hotel accessibility



POIs near me: Ratings, Tweeting



# Innovative leadership in Rio de Janeiro transformed city operations management



- Initial focus - prevent deaths from annual flooding
- Expanded to manage all emergency response situations
- Analyzes weather, energy, building, transportation and water data in real-time
- Nationwide adoption in advance of the 2014 World Cup and 2016 Olympics



# Integrating information within and across physical infrastructure systems is key

## Inspired By



### Public Safety

- Predict, monitor, and mitigate crisis situations
- Coordinate multi-agency responses
- Minimize impact of emergencies



### Transportation

- Improve traffic management
- Optimize roadway capacity
- Enhance travel experience



### Water Management

- Analyze water use and consumption patterns
- Predict asset failures to reduce costs
- Optimize work orders to improve service





# The role of information in Smarter City design

## Role of Information

- “See”, “Discover”
- Understand, learn
- Prioritize
- Make choices
- Catalyze action
- Measure, evaluate
- Tell the story



## Role of ICTs

- Low and high-level mediation within and among urban systems
- Sensing urban system activity
- Visualizing, analyzing, optimizing
- Transparency among people, government, commerce
- New forms of urban infrastructure
- Two-way interaction beyond the portal







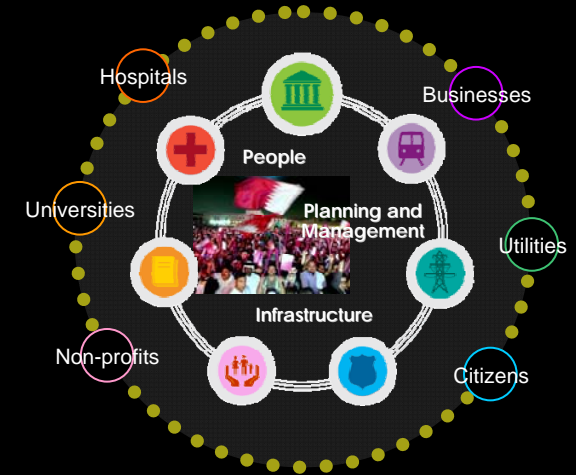
## What is “accessibility”?

- ... Is used to describe the degree to which a product, device, service, or environment is available to as many people as possible
- ... Can be viewed as the "ability to access" and benefit from some system or entity
- ... Is often used to focus on people with disabilities or special needs and their right of access to entities, often through use of assistive technology
- ... Is about making things accessible to all people - whether they have a disability or not

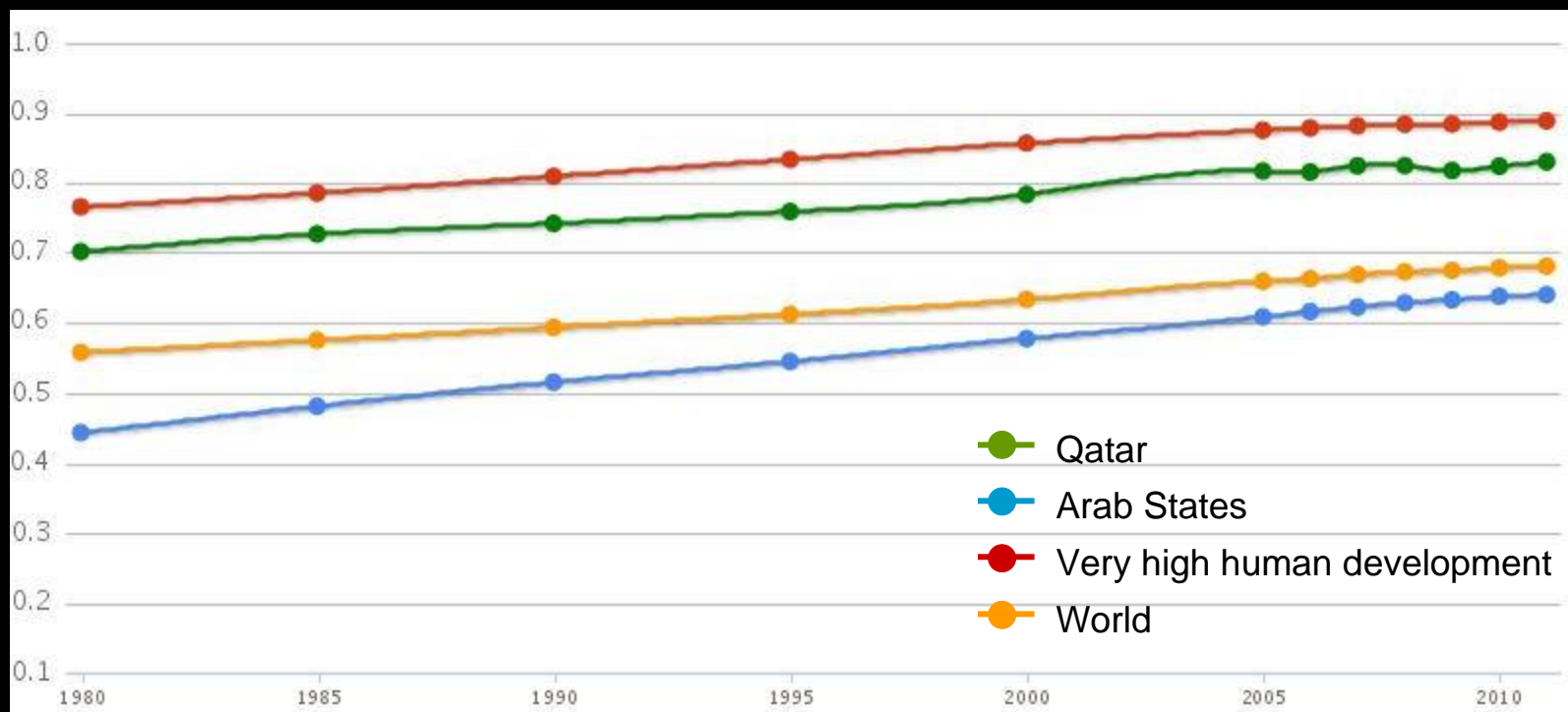
*We believe it's about inclusion*

## How are Smarter Cities doing it? Key patterns ...

1. Engaging people to co-define (even co-produce) “what’s important” in context ...  
infusing design discipline at the point of engagement
2. Integrating and leveraging information to make better decisions ... beyond “city hall”
3. Coordinating resources to operate efficiently and effectively ... using and sharing real-time insights
4. Anticipating problems to resolve them proactively and manage risk ... with data-driven management practices



## Qatar's trajectory



**Source:** UNDP Human Development Report 2011



## Looking now at “accessibility” in a Smarter City ...

- *What’s “important”?* To whom?
- How, when and where does the experience come together *for them*?
- To what degree are our citizens getting sufficient benefits / returns on information?
- To what degree have we leveraged the collective imagination and knowledge of our people?
- How do we know we’re making progress toward desired outcomes? How and who will tell the story?





Shukran

شكرا

Thank you