Citizen Services in a Smart City New Paradigm

Prof. H. M. Shivanand Swamy

Executive Director, Centre of Excellence in Urban Transport CEPT University, Ahmedabad



Smart City Essentials

A 'smart' economy is about people thinking and working smarter, generating new ideas and getting more for less right across the economy



Smart City - Premise

'By having right information at the right time, citizens, service providers, and city governments alike will be able to make better decisions that result in an increased quality of life for urban residents and the overall sustainability of the city' (Mostashari et al.,2011)

Two fold impacts:

- It allows service providers (such as utilities and transit companies) and city government to provide more efficient and sustainable services (top down), and
- It shifts the social behavior of citizens towards a more efficient and sustainable utilization of city resources (bottom up)

Smart City – Surveillance Society

- All significant infrastructures including roads, bridges, tunnels, rail, subways, airports, seaports, communication infrastructure, water, power, and major buildings – are monitored in order to maximize the services available to residents (including security services) while optimizing the use of resources (Hall, 2000)
- In practice, residents will live in a 'surveillance society'; that is, where societies are connected but completely unknown to one another (Aus et al)

Smart City is not just about Smart Tech

To be able to use smart technology, we need



Technology needs to essentially align with organizational ability and people needs



Diversity of Application in a Smart City



Some Relevant Example of Smart Citizen Services

- Transportation Planning
- Traffic Management
- User Interface
- Benchmarking
- Smart Participation

The Commuter



- Multi Modal Travel Planning and Ticketing
- Real Time Information & Routing Options

The Controller



- Problem anticipation
- Systemic Control
- Real Time Feedback



- Dynamic View of City's changing travel patterns
- Complex "what if" modelling of system wide impacts.

Smart City – Transport Planning

- Transport Modelling leading to strategic and operational management decisions
- City Big data leading to smarter decisions
- Public transport dynamic service scheduling



Variety | Volume | Veracity | Velocity

Smart City – Dynamic Traffic Management

- Use of communication and mobile technology to predict real time traffic patterns
- Advanced Traveller information
- Ability to deliver decision capable information to traffic managers
- Aid policy decisions



Dynamic Traffic Management

Traffic Movement

✓ Classified Volume Count (Unreliable, Static)

Traffic Monitoring

- ✓ Traffic Congestion
- ✓ Junction Improvement
- ✓ Area Traffic Control

Parking Sensor



Static Traffic (Strategic Planning)



Dynamic - Traffic Monitoring & Control

Smart City – Urban Transport Benchmarking

- Data driven model to scientifically evaluate service levels
- Aid Long term strategies Medium term investment plans Short term operations management



Total buses on road offering stage-carriage services (public & private buses)

767.00

	10 C	222	100 1000	
	lotal	Source	Month/Year	
Private	0.00	BRTS Janmarg	Jan-11	
Public (STU)	96.00	BRTS Janmarg	Jan-11	
Public (SPV)	0.00	BRTS Janmarg	Mar-13	
Public (municipal service)	671.00	BRTS Janmarg	Jan-11	

Total buses on road by Public undertaking/STU/SPV (Organized PT system)

767.00

www.utbanchmark.in

Smart City – Peoples connect (AMC's Janseva)

A Comprehensive Service Delivery Framework which is

- Easily accessible
- Responsive to citizens needs
- Enable quick decision capability
- **Connect** all stakeholders with right kind of information in the quickest possible timeline
- Allows all stakeholders clear visibility and communication

\∠ Top 10 Problems	Today - May 06, 2013 Today - May 06, 2013		13			
Encroachment Dangerous Building		South	25 Within Beyond SLA SLA	Close	Ward at a glance Open On-H	Hold Re-Open
Storm Water Road Public Building Footpath		Behrampura Kankaria	05 00 05 00	Engineering Contact Behrampura	1025Within BeyondWithin BeyondSLASLASLASLA05000500	00 00 ad Within Beyond Within Beyond SLA SLA SLA SLA SLA 00 00 00 00 00
158 Complaints	All Central New - West South West E	Khokhra Maninagar	05 00 05 00	Kankaria Indrapuri	05 00 05 00 05 00 05 00	00 00 00 00 00 00 00 00 00
		Central East	30 10	Khokhra Maninagar	05 00 05 00 05 00 05 00	00 00 00 00 00 00 00 00 00
Re-Open Close Open Hold	 East North 	Single	point of con	Garden tact for al	10 30 I types of	00 00

Transport System Maturity Model (IBM)

		Level 1 Silo	Level 2 Single Mode Integrated	Level 3 Partially Integrated	Level 4 Multimodal Integrated	Level 5 Multimodal Optimized
Strategic planning	Planning	Functional Area Planning (single mode)	Project-based Planning (single mode)	Integrated agency-wide planning (single mode)	Integrated corridor-based multimodal planning	Integrated regional multimodal planning
	Performance Measurement	Minimal	Defined metrics by mode	Limited integration across organizational silos	Shared multimodal system-wide metrics	Continuous system-wide performance management
	Customer Relationships	Minimal capability, no customer accounts	Customer accounts managed separately for each system/mode	Multi-channel account interaction per mode	Unified customer account across multiple modes	Integrated multimodal incentives to optimize multimodal use
nation bility	Data Collection	Limited or Manual Input	Near real-time for major routes	Real-time for major routes using multiple inputs	Real-time coverage for major corridors, all significant modes	System-wide real-time data collection across all modes
nforr capal	Data Integration	Limited	Networked	Common user interface	2-way system integration	Extended integration
-time i eation	Analytics	Ad-hoc analysis	Periodic, Systematic analysis	High-level analysis in near real-time	Detailed analysis in real-time	Multimodal analysis in real-time
cre	Payment Methods	Manual Cash Collection	Automatic Cash Machines	Electronic Payments	Multimodal integrated fare card	Multimodal, multi-media (fare cards, cell phones, etc)
	Network Ops. Response	Ad-Hoc, Single Mode	Centralized, Single Mode	Automatic, Single Mode	Automated, Multimodal	Multimodal real-time optimized
tervention	Incident Management	Manual detection, response and recovery	Manual detection, coordinated response, recovery	Automatic detection, coordinated response and manual recovery	Automated pre-planned multimodal recovery plans	Dynamic multimodal recovery plans based on real-time data
Real –time in capab	Demand Management	Individual static measures	Individual measures, with long- term variability	Coordinated measures with short-term variability	Dynamic pricing	Multimodal dynamic pricing
	Traveller Information	Static Information	Static trip planning with limited real-time alerts	Multi-channel trip planning and account based alert subscription	Location-based, on journey multimodal information	Location based, multimodal proactive re- routing

Transport System Maturity Model (IBM) Ahmedabad and Global Practice

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Ahmedabad	Global Leading Practice	Yet to Initiate
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Conclusion

- We need smart organizations and smart people to collectively produce, deliver and consume services – Capacity Building (Organistations & People)
- Smartness index is ever evolving and hence capacity and innovation capabilities become the most critical factor for sustenance
- Influencing People Behavior as key factor
 - Tools- Voice to people by enhancing communication connect via easy accessible apps & communication services.
 - Outreach system to ensure wider participation.
 - Holistic connect process to engage all section of society (Universal wifi!)
 - Ensuring framework to enable citizens participation.
- Collaborative effort Long term collaborations needs encouraged
 - Technology Providers
 - A framework for collaborations with universities/educational institutions, People Organistaions needs to be developed

Influencing People Behavior as key factor

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- Outreach system to ensure wider participation.
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Thank You...!

Public Transport Plannir

✓ PT Network Planning

- ✓ PT Mode selection
- ✓ Routes Planning
- ✓ Service / Frequency planning
- ✓ Performance Monitoring
 - ✓ Bunching Monitoring

Public Transport Network - Alternative Prantij To Vadasar To Vadasar TATA Daskrol Daskrol **Pass Flows**

