Administrative Staff College of India

Leveraging the power of ICT for Good Urban Management

Smart Cities

From Good to Smart …Transforming Urban Management in India

ICT for Effective City Management

- ICT synergizing with Emerging Technologies is transforming businesses and societies in a significant way.
- ICT is bypassing cities and the way cities are managed.
- JnNURM 1 has promoted e-governance – focusing on 8 areas
  - B&D certification, property tax, payroll and personnel, e-procurement, *building plan approval,* water and utility payments, SWM, grievance system, trade licenses, project and ward works
  - Benchmarks are defined
- Large scale investments needed in urban sector (HPEC, 12 FYP) – Innovations are a must
- Innovation through ICT – improving service, reducing costs, process time, productivity gains etc
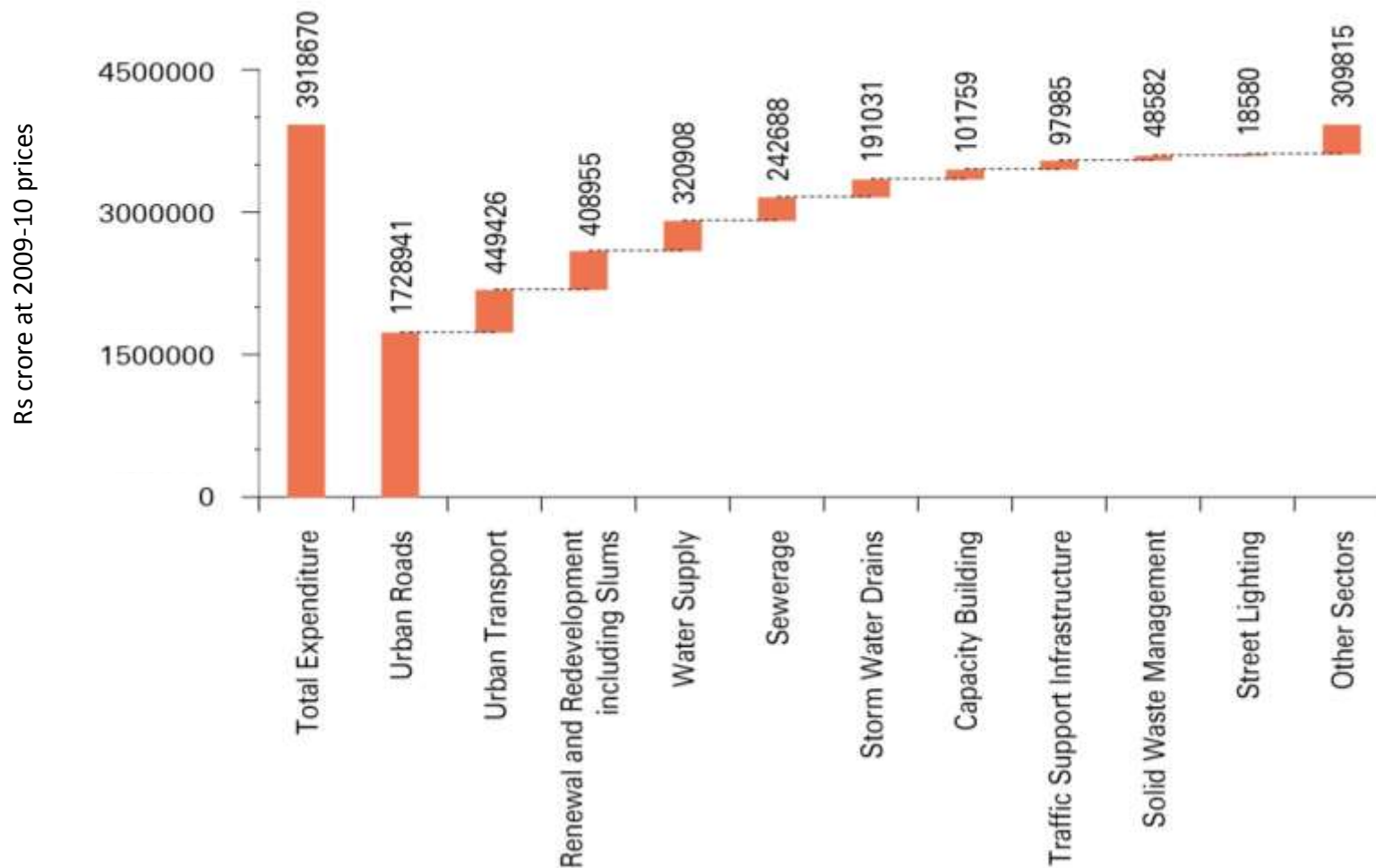- Capitalizing ICT revolution for better urban governance and service delivery

Mobile Subscription

Mobile Subscriptions by GDP per Capita Category

Internet usage

Internet Usage by GDP per Capita Category
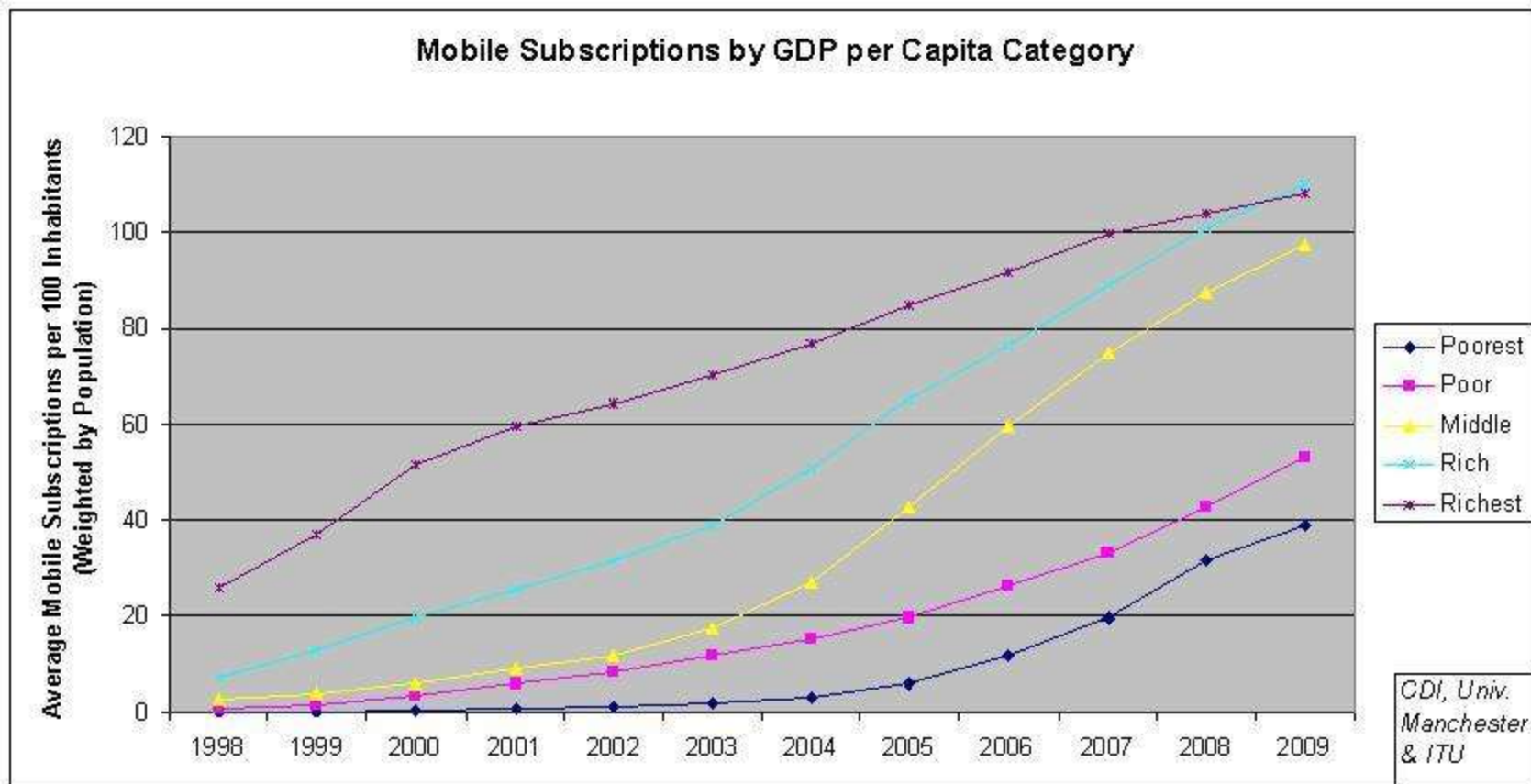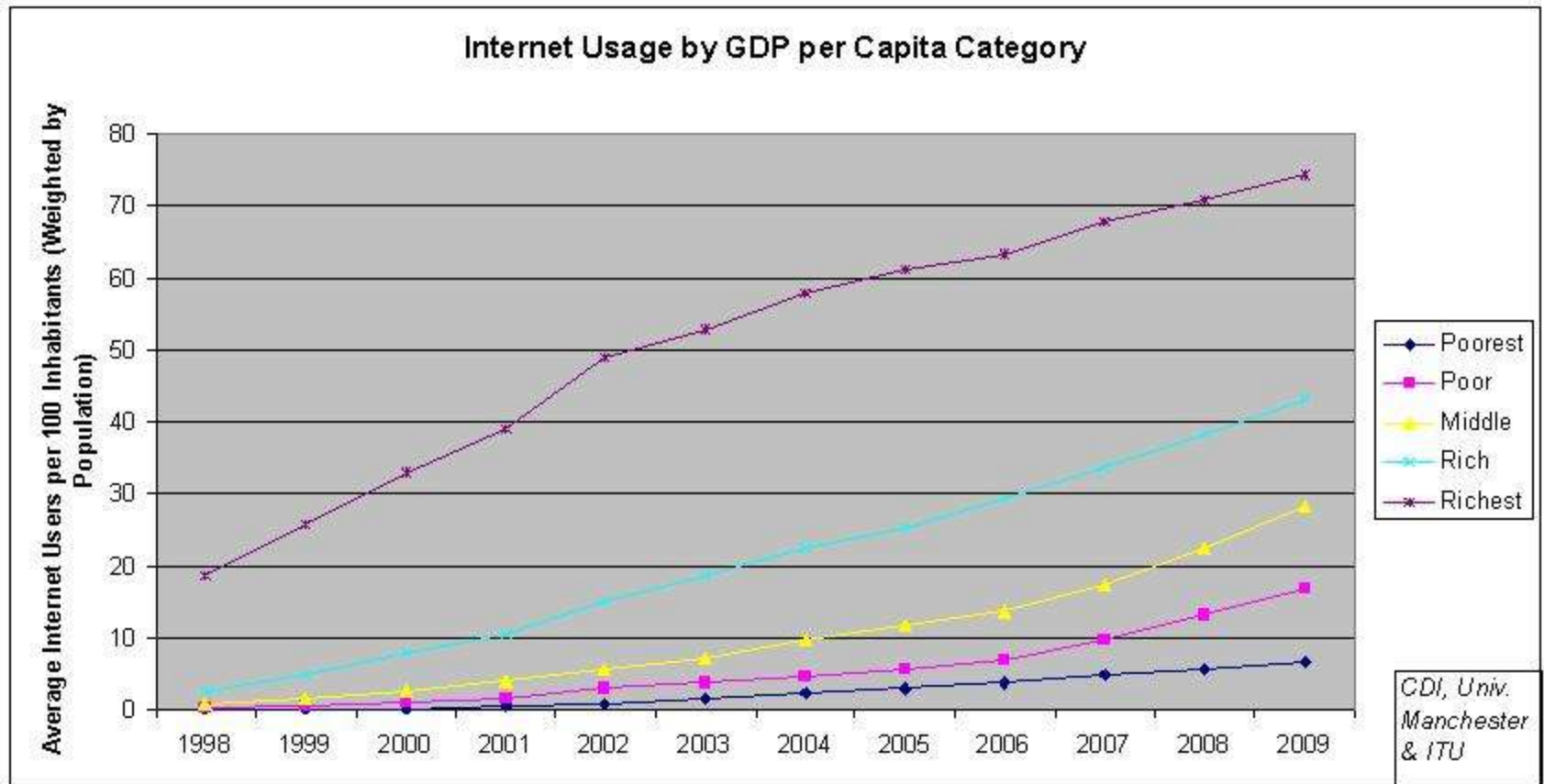
Urban Infrastructure investment requirement of Rs. 39.2 lakh crore over 20 years.
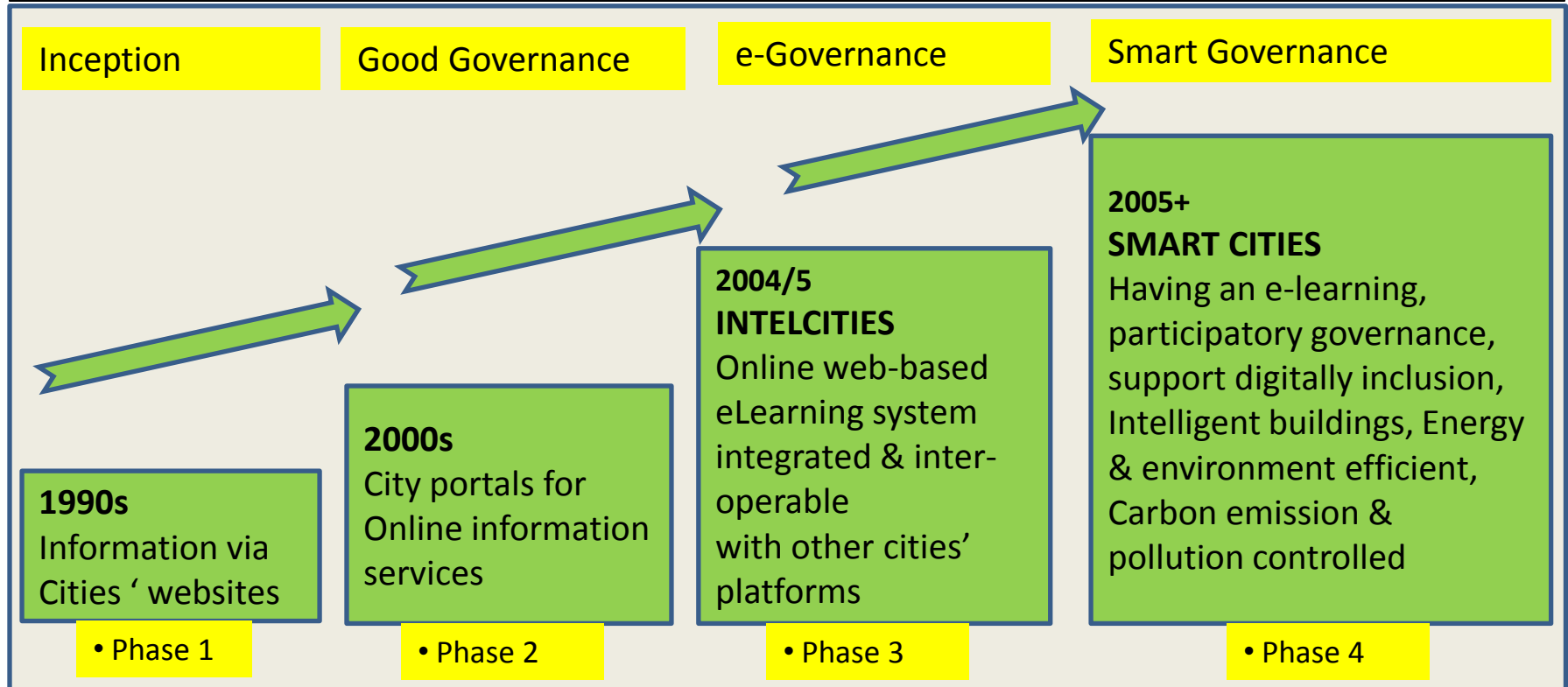

- Additional **Rs 20 lakh crore** for operation and maintenance of assets – old and new
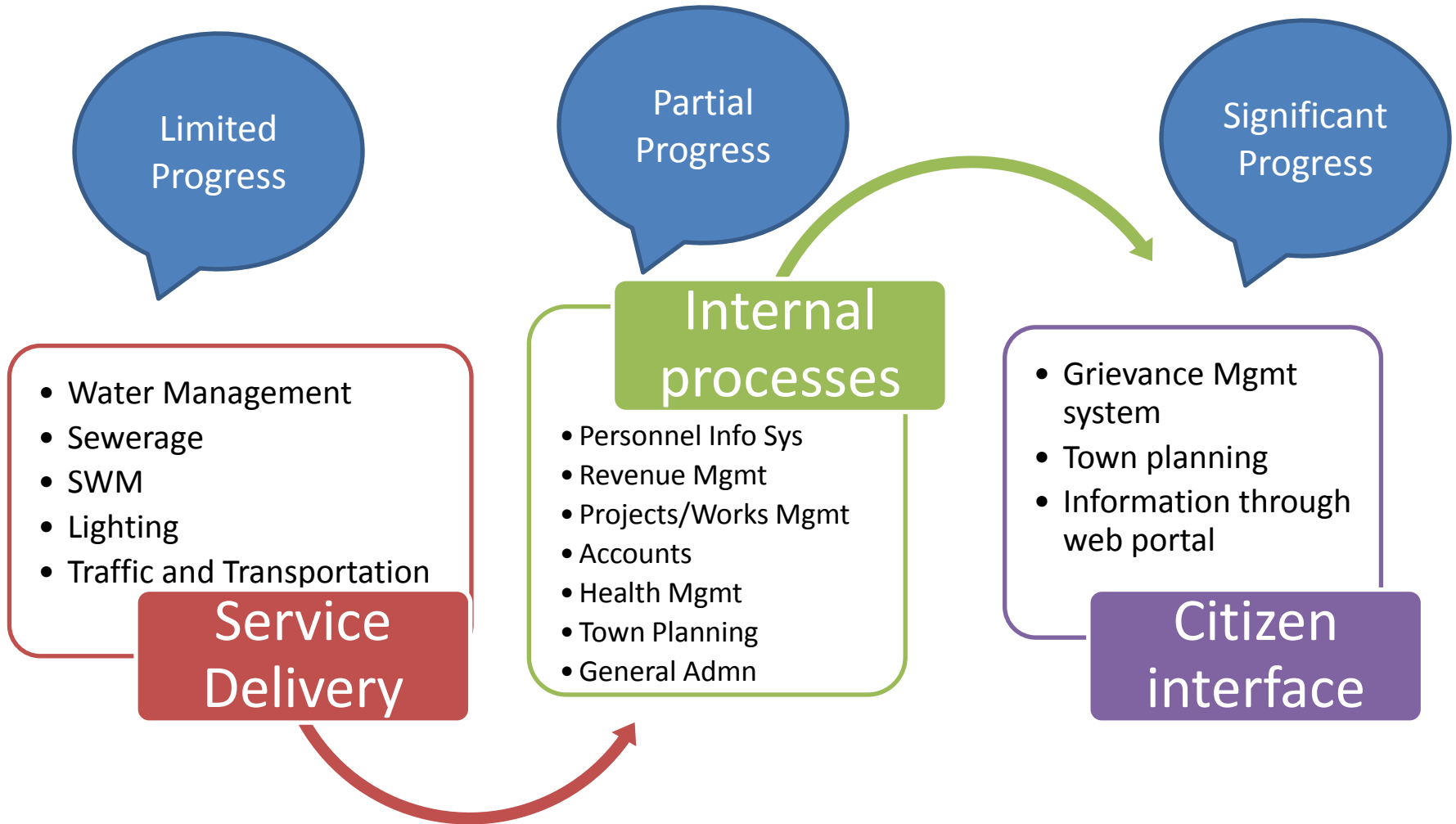
ICT for Effective City Management

- Imperative to promote ICT – for cost efficiency and service delivery improvement
- ASCI in partnership with Ministry of Urban Development , GOI and technology thought leaders is promoting ICT innovations in City Management
  - Efficiency improvement
  - Transparency
  - Cost reduction

Evolution …… From "Good" to "Smart"

- Early phases focused on "IT for Computerization"
- Next phase looked into integration as adaptive and intelligent cities using "ICT for e-Governance"
- The current generation cities look at "ICT with Emerging Technologies for building Smart Cities" (ICT, Electronics and Sensor based, GIS, GPS based, Real-time Systems, Mobile, Analytics based etc)

| Inception | Good Governance | e-Governance | Smart Governance |

2005+
SMART CITIES
Having an e-learning, participatory governance, support digitally inclusion, Intelligent buildings, Energy & environment efficient, Carbon emission & pollution controlled

2004/5
INTELCITIES
Online web-based eLearning system integrated & inter-operable with other cities' platforms

2000s
City portals for Online information services

1990s
Information via Cities ' websites

- Phase 1
- Phase 2
- Phase 3
- Phase 4

Potential ICT Application Areas in Urban Management

Water Supply	Waste Water	Solid Waste Management	Municipal Services	Revenue & Management
Water Resource Management	Plant Management	Attendance Monitoring	Birth & Death Certificates	Property Tax
Distribution Management	Collection & Distribution	Bin Tracking System	Building Plan Approval	e Procurement
Internal Business Process	Billing and Collection	Vehicle Tracking System	Grievance Management	Accounting system
Water Quality Management	Internal Business Process	Waste Collection & Transfer	Utility Bills	Personnel Management
Billing & Collection	Grievance Handling	Treatment and Disposal	Licenses	
Grievances Handling		Internal Business Processing	Traffic	
		Citizen's Grievances	Street Lights	
			Flooding	

Smart Cities

Smart cities are built around six dimensions integrating all aspects of Urban Management
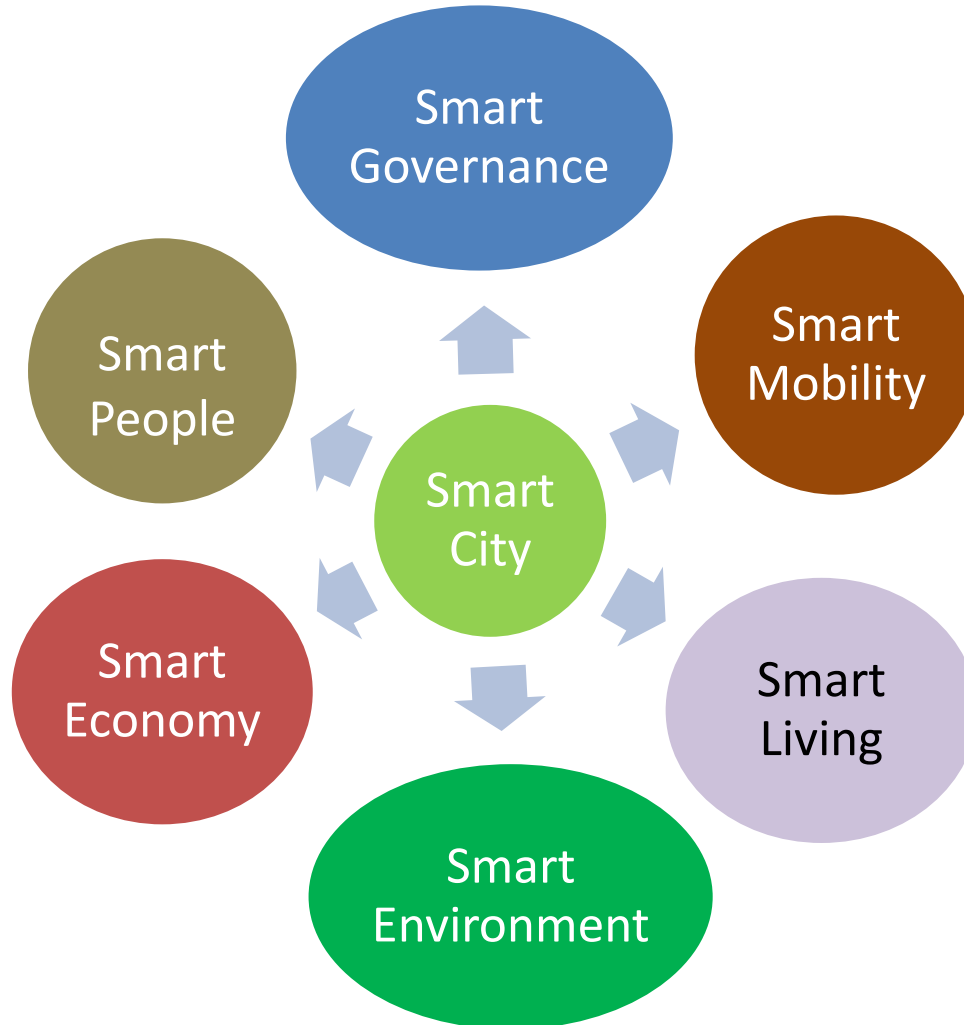
Aspect	Smartness
Parking	Identifying Free parking slots, Navigating to a parking thru Maps
	Booking for slots based on travel plan, Payment from your Mobile
	Proactive Creation of Parking spaces
Solid waste	Free of garbage, Auto Alerts on Garbage to pick-up trucks
	to inform the administration if they are not cleared
	enforcement for unauthorized garbage dumping
Parks and lakes	Walk ways, Green lawns watering regularly,
	Alarms on tress-passing, smart lighting based on ambient light, garbage maintenance
Toilets	Locating Toilets thru maps, Auto flushing, paid toilets
Streets	Lighting solar, Pollution information, Free corridors
	Signage and bulletin boards
Governance	Single sign-on, citizen participation in policy
Safety , security and Disaster management	Acoustic video Surveillance and noise based titling camera
	ID, device and access security,
	Bulletin boards and broadcasting systems for alerts, alarms
	Surveillance on thefts and chain snatching and disaster
Utilities (Water, Electricity etc)	Information, Alerts. Payments, service timings, shutdown
Communication	Connected , wifi etc, Ubiquitous access to internet
Information	Access to information about almost anything
Mobility	Info on public transport, booking, traffic situation / congestion

Some smart initiatives

- Smart mobility – HTRIMS, Hyderabad; Bangalore
  - Bicycle sharing program, Trivandrum
  - Bus information system over mobile
- Water efficiency through SCADA – Pimpri Chinchward
- Building approval system – AUTO DCR – about 30 cities
- Integration of services and governance – Hyderabad
- Smart toilets – sensor based community toilets – Trivandrum
- Automatic meter reading – Mumbai, Hyderabad
- Solid waste information system - GHMC

Smart Initiative by Hyderabad Traffic

Hyderabad Traffic Context

- 29 lakh vehicles on road in Hyderabad, fourth largest in India

- 600 vehicles added every day

- Almost no foot paths

- Hyderabad has only 8% of city as road area as against 14%-18% in other metros

- Vehicle density 723 vehicles / km, second largest in the country

- Average speed at 12 kmph against country average of 20 kmph

Smart Initiative by Hyderabad Traffic

HTRIMS Highlights

- 221 signals to be automated with central intelligent command center

- 221 signals enabled with Virtual loop cameras for Adaptive Traffic Control and synchronized signals

- Automatic adjustment of the signal timings based on the traffic flows and Adaptive Traffic control

- Automatic signal brightness control based on ambient light
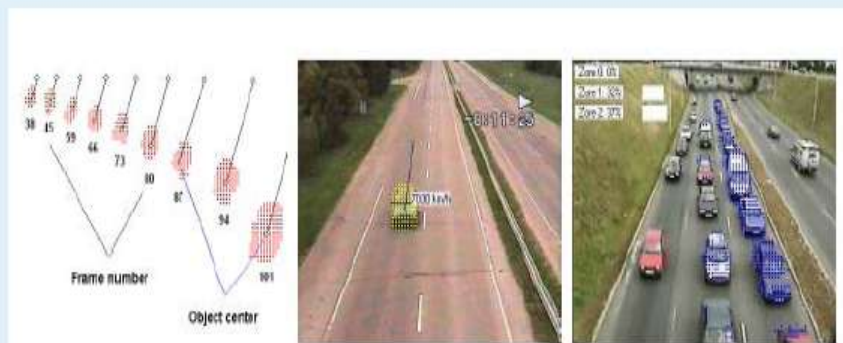
Virtual loops
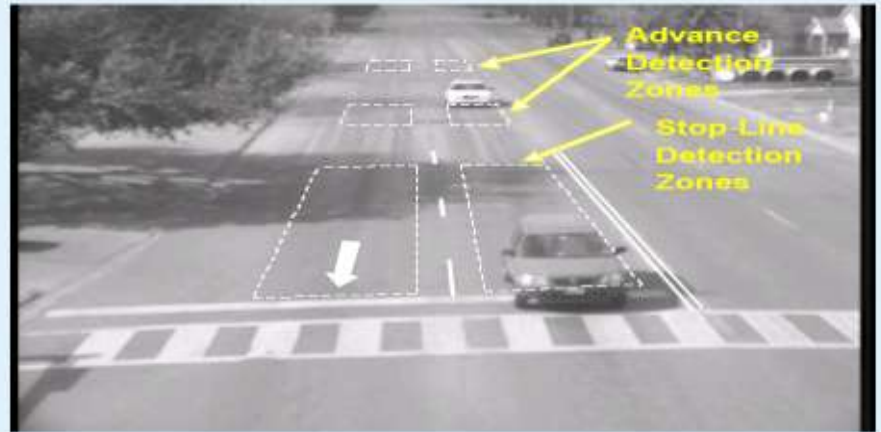
Speed detection

Fig. 14. Object tracking (a), speed estimation (b) and jam detection (c) by motion detection method.

Smart Initiative by Hyderabad Traffic

HTRIMS Highlights

- Integration in surveillance on violations

- Variable Message system to alert the citizen on traffic flows and congestions

- Pedestrian controlled signals

- SMS based alerts to citizens

- Optimized traffic flow

Integrated Surveillance
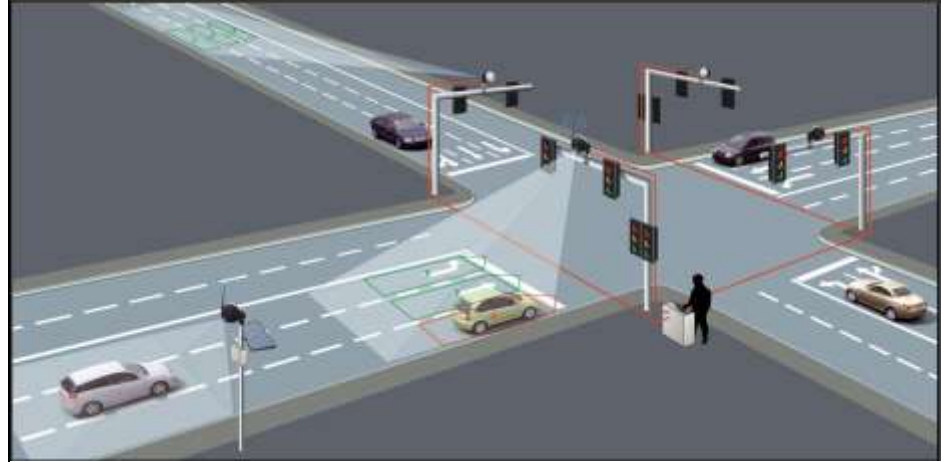
VMS: Variable Message Sign

- Key element for safety and traffic control purposes.
- VMS is the only system that can guarantee real time communication with drivers.

CURVA HACIA LA DERECHA

TESTING TRAFFIC PANEL
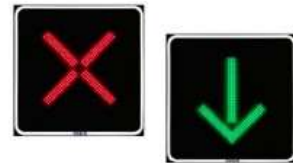
SMS – Static Message Signs

- Usually composed of one module, that can show a limited number of signs.
- Replaces static signs by improving visiblity.

VMS – Variable Message Signs

- Modular design to adapt customer's needs: alphanumeric + graphics modules.
- Full matrix – full colour Panels.
- Supports multiple control devices (cameras, sensors…) on it.

Smart Initiative by Hyderabad Traffic

HTRIMS Highlights

- Corridor Synchronization for optimized traffic flow

ARVIND SUPER BAZAAR JUNCTION
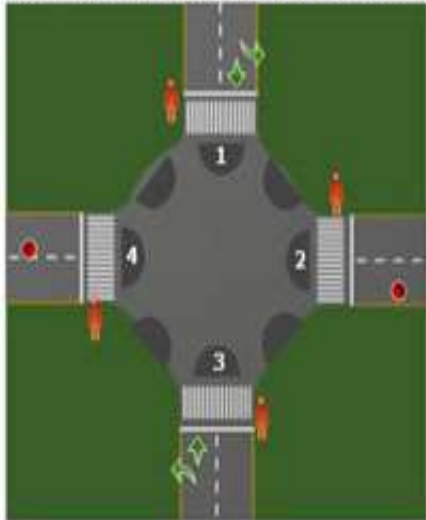
ASC JUNCTION

BEL CIRCLE
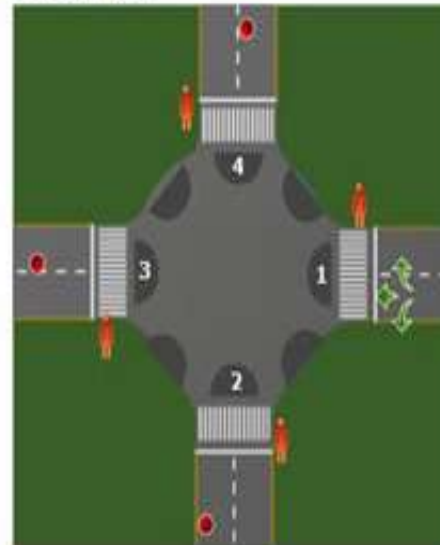
ATTIGUPPE CHANDRA LAYOUT

Note : International experience demonstrates Signal synchronization has
1. Improved average travel speed by 50%
2. Reduced delays in road network by 35%
3. Reduced fuel consumption by 22%

AUTODCR – INNOVATION IN BUILDING PLAN SCRUTINY AND APPROVAL

Enabling citizen centric building plan approval through innovative technology

AutoDCR
a SoftTech product

The key issues and challenges

Impact of the challenges

Are the hand-offs between multiple agencies causing inordinate delays in approvals?
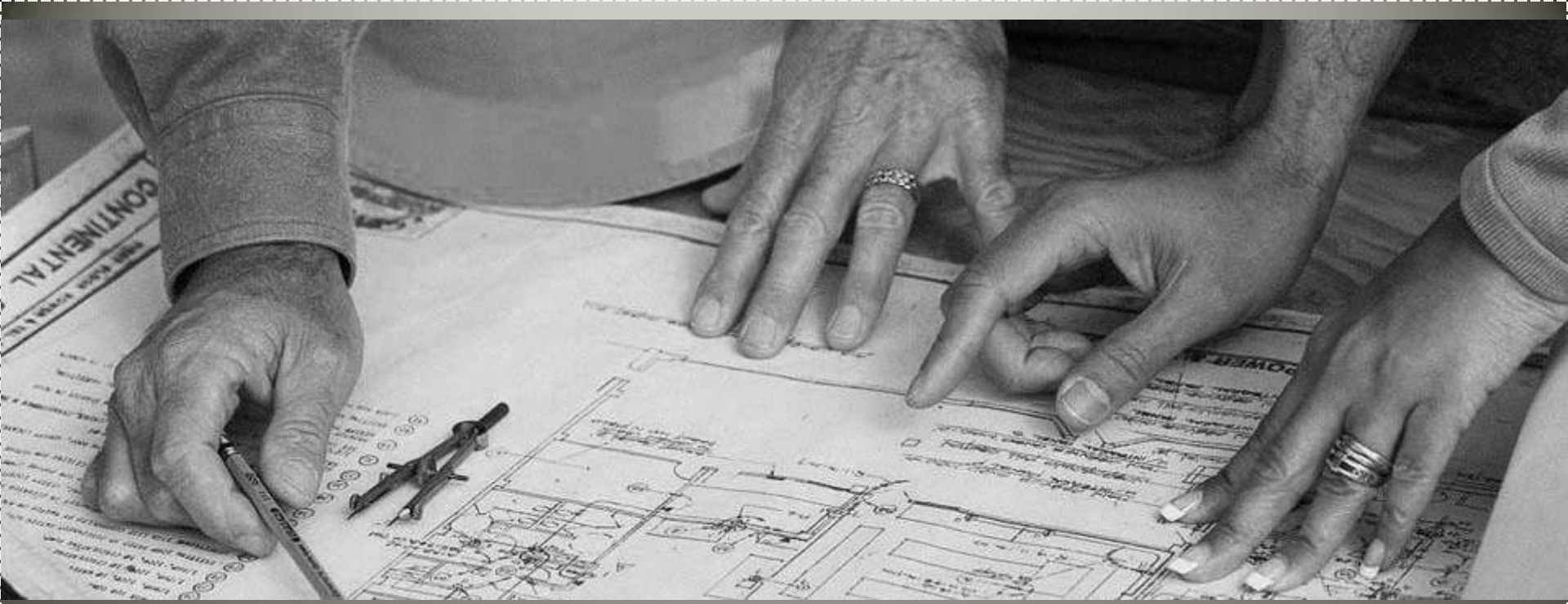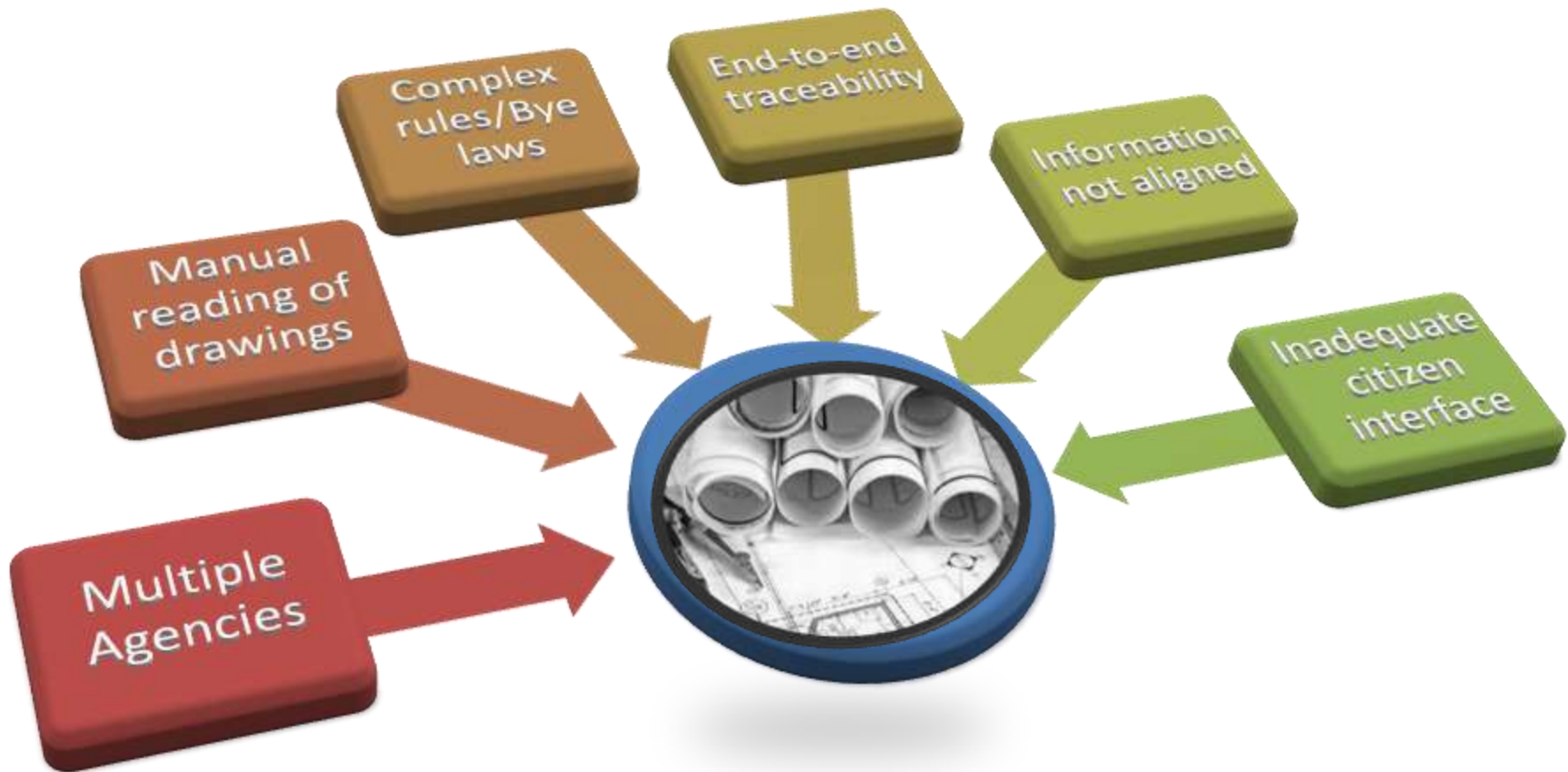
Is manual reading of drawings increasing the probability of omission of important checks?

Are the interpretation of DC rules / Building bye laws becoming subjective?

Multiple Agencies

Manual reading of drawings

Complex rules/bye laws

End-to-end traceability

Information not aligned

Inadequate citizen interface

Is inadequate traceability standing in the way of accountability and transparency?

Is a misaligned information flow preventing systemic alerts for corrective/preventive actions?

How is lack of transparency and citizen interface affecting the image of the corporation?

AutoDCR framework

MIS Reports

Higher Authorities

AutoDCR™

ACCEPTED

REJECTED

Architect

Submits application online

Views status online

Views Reports online

Final Drawing in .pdf format

Corporation

1 **Document Approval**
Verify the submitted document

2 **Site Visit Approval**
Site Inspection Report

3 **Drawing Approval**
Drawing scrutiny report generated by AutoDCR™

View sanctioned details

Citizens

eGovernance
an efficient way to meet
citizen's expectation

m

Address:
Computer Department,
Rajkot Municipal Corporation,
Dhebar Road,
Rajkot (Gujarat) - INDIA

Tele Phone : +91-281-2230920

Fax : +91-281-2224258

URL : www.rmc.gov.in

Rajkot Municipal Corporation

Vaccination

Property Tax Transaction

Professional Tax Transaction

Birth & Death Registration

Bill Payment to Venders/Contractors

Awas Yojna Installment Transaction

Cheque Return Alert

Property Tax Outstanding Dues

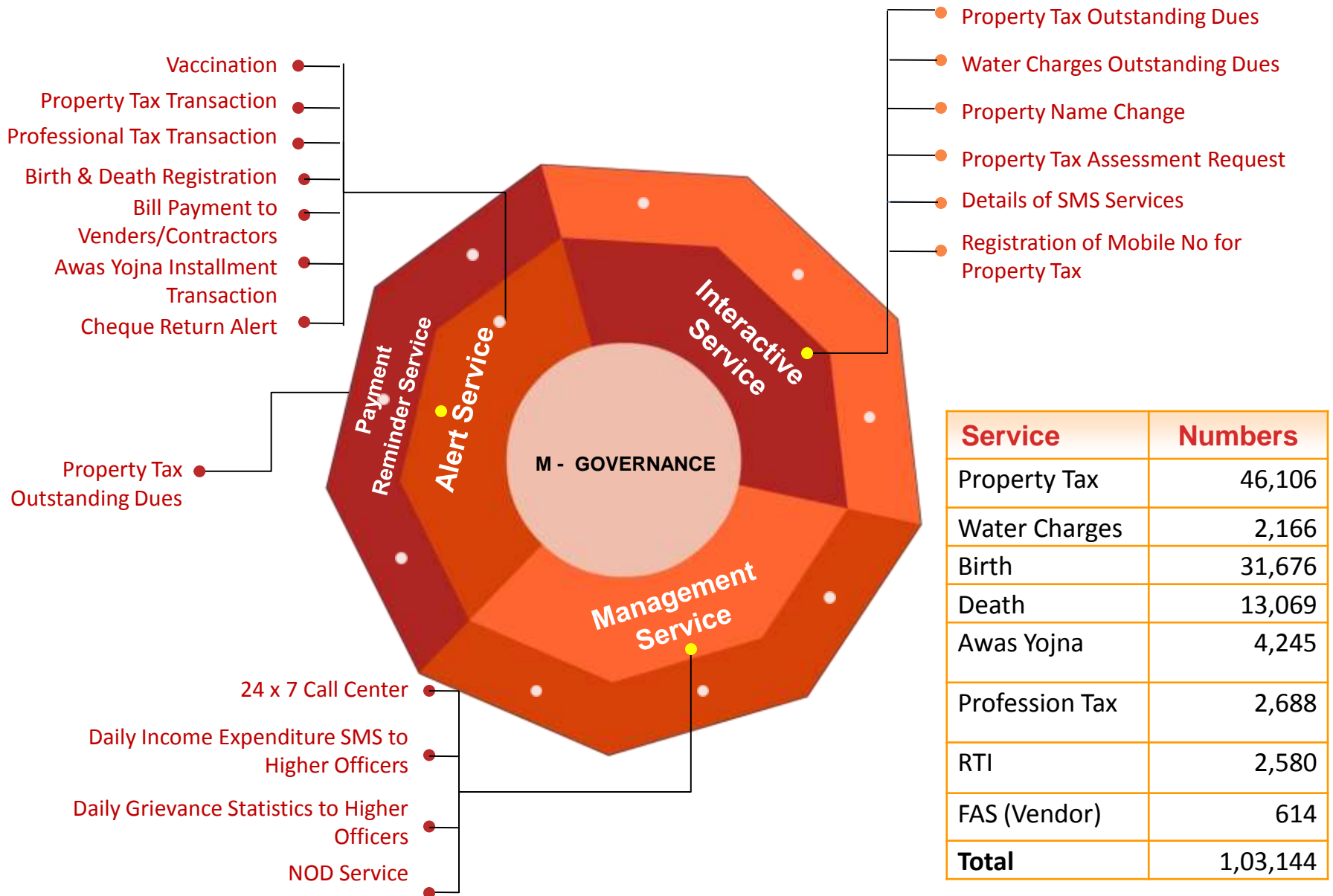24 x 7 Call Center

Daily Income Expenditure SMS to Higher Officers

Daily Grievance Statistics to Higher Officers

NOD Service

M - GOVERNANCE

Payment Reminder Service

Alert Service

Interactive Service

Management Service

Property Tax Outstanding Dues

Water Charges Outstanding Dues

Property Name Change

Property Tax Assessment Request

Details of SMS Services

Registration of Mobile No for Property Tax

Service	Numbers
Property Tax	46,106
Water Charges	2,166
Birth	31,676
Death	13,069
Awas Yojna	4,245
Profession Tax	2,688
RTI	2,580
FAS (Vendor)	614
Total	1,03,144

m-Governance

Process to Access m-Governance Services

Interactive Service

1. Light <Pole No>
2. Property Tax Due Bill <17 Digit Property No>
3. Water Charges Due Water <13 Digit Water Connection No>
4. Name Change Name <17 Digit Property No>
5. Assessment Request Assess <Name and Address of Property>
6. Complain Status Status <complain no>

Send SMS to 9624096241

Alert Service

1. Property Tax Register on www.rmc.gov.in
2. Professional Tax Register at the time of registration
3. Awas Yojna EMI collection at the time of creation of master record
4. Birth Registration at the time of registration of birth
5. Death Registration at the time of death registration
6. Vendor/Contractor payment at the time of preparation of bills

Management Service

1. NOD Service
2. Daily Income Expenditure SMS to higher officials every day @8.00 PM
3. Daily Complain statics SMS to higher officials every day @9.00 PM
4. Call Center Service
    1. Complain registered send to officer by SMS
    2. Officer has to change status by SMS only
    3. PND to know pending complain
    4. PND <mobile no> to get pending complain of other officer
    5. ID <Complain No> to details of complain
    6. EDP <Complain No> to know complain is sent to which officer

Vaccination

➡ Introduced in Nirogi Bal Varsha   (Healthy Child Year)
➡ Vaccination alert to all registered Birth
➡ Based on National Immunization scheme
➡ From the age of 7 days to 16 years
➡ 156331 alerts sent

Within 7 days of Birth
- BCG

Within 14 days of birth
- OPV-0

At age of 1.5
- DPT-1 & OPV-1

At age of 2.5 Month
- DPT-2 & OPV-2

At age of 3.5 Month
- DPT-2 & OPV-3

At age of 9 months
- Measles & Vitamin-A (Dose 1)

At age of 18 Months
- DPT Booster & OPV Booster

At age of 5 Years
- DT-5

At age of 10 Years
- TT-10

At age of 16 Years
- TT-16

At 9 Months to 5 Year (Each 6 Months)
- Vitamin-A (Dose 2 to 9)

Some Facts and Figures : m-Governance

Mode of Service – Alert Service

Sr	Department	Services for	Beneficiaries
1	Property Tax	Transaction alert through SMS	36211
		Receipt Cancellation Alert	793
		Cheque Return Alert	77
		Name Transfer Alert	2259
2	Professional Tax	Transaction alert through SMS	16608
3	Birth Registration	Birth registration details through SMS	34561
		Vaccination alert through SMS	156331
4	Death Registration	Death Registration details through SMS	14210
5	Awas Yojna Installment	Installment transaction alert through SMS	33381
7	FAS	Account Payment SMS to Vendors and Contractors	3847
	Total		298278

Mode of Service – Payment Reminder

Sr	Department	Services for	Beneficiaries
1	Property Tax	Payment Reminder Service	91,840
	Total		91,840

Smart City Programme – Action Imperatives

- ICT should be an integral component of future infrastructure and service delivery projects under JnNURM 2 etc

- Pilot projects in select cities – four to five
    - DPR preparation for smart city initiatives

- Explore PPP in innovation and implementation

- Creation of repository of applications and innovations and disseminate extensively (ICT4UD.in)

- Workshops with technology players and encouraging startups for incubation

- Establishing smart city innovation centre

Mission

Empowering ULBs through Knowledge Dissemination and Providing knowledge frame work, Advisory, platform for exchange of ideas and interaction with peers on ICT enablement for building smart cities ...

READ MORE

ACTIVITIES

ULBs have an enormous resource constraint of well trained and experienced manpower to enable ICT solutions in their institutions to evolve as smart cities across the nation. Capacity building, Handholding and Research are the primary focus ...

READ MORE

AWARDS & NEWS

Do you want to Share your ICT initiative with your peers? Would you like to know which ICT initiative got an Award. Nominate yourself for a peer level review of your innovations and help in replicating the success stories. Smart cities 2012 conference is scheduled on ...

READ MORE

E-CLASS

Look at the latest of the videos on various lectures and training programs, workshops and seminars conducted on a wide range of topics. Access the latest of the sessions on 'ICT for Urban Management' as a registered member and get to share your experiences and learnings with your peers ...

READ MORE

Knowledge Base

There is an increasing need for a comprehensive Knowledge base and stages of deployment of technology to facilitate people induced planning for smart cities. Urban planners and developers, business establishments and governments can use this knowledge base to transform their cities for enhancing the quality of life of citizens. Effective use of ICT will ensure enforceability and transparency in public service delivery to achieve sustainable urbanizations. An exhaustive search engine driven repository of Case Studies sharing experiences and learnings, Resource Links, Guidelines etc are all under one roof ...

READ MORE

PHOTO GALLERY

6/5.7 degree separation

- World is highly connected through ICT

| Chary | Dr Isher J Ahluwalia, Chairperson, HPEC | Hon'ble Prime Minister |

- Cities are not leveraging this phenomenon

Thank you

Administrative Staff College of India