



सत्यमेव जयते

Department of Electronics & Information Technology
Government of India

E-Governance -Digital India

**A programme to transform India into a digitally
empowered society and knowledge economy**

15 July 2015



National Institute for Smart Government

What is Digital India?

- Digital India is a Programme to prepare India for a knowledge future.
- The focus is on being transformative – to realize IT + IT = IT
- The focus is on making technology central to enabling change.
- It is an Umbrella Programme – covering many departments.
 - It weaves together a large number of ideas and thoughts into a single, comprehensive vision so that
 - each of them is seen as part of a larger goal.
 - Each individual element stands on its own. But is also part of the larger picture.
 - It is coordinated by DeitY, implemented by the entire government.
 - The weaving together makes the Mission transformative in totality
- The Programme:
 - Pulls together many existing schemes.
 - These schemes will be restructured and re-focused.
 - They will be implemented in a synchronized manner.
 - Many elements are only process improvements with minimal cost.
- The common branding of programmes as Digital India highlights their transformative impact.

Vision of Digital India

CENTERED ON 3 KEY AREAS

- Digital Infrastructure as a Utility to Every Citizen
- Governance & Services on Demand
- Digital Empowerment of Citizens

Vision Area 1: Infrastructure as a Utility to Every Citizen

- High speed internet as a core utility
- Cradle to grave digital identity -unique, lifelong, online, authenticable
- Mobile phone & Bank account enabling participation in digital & financial space
- Easy access to a Common Service Centre
- Shareable private space on a public cloud
- Safe and secure Cyber-space

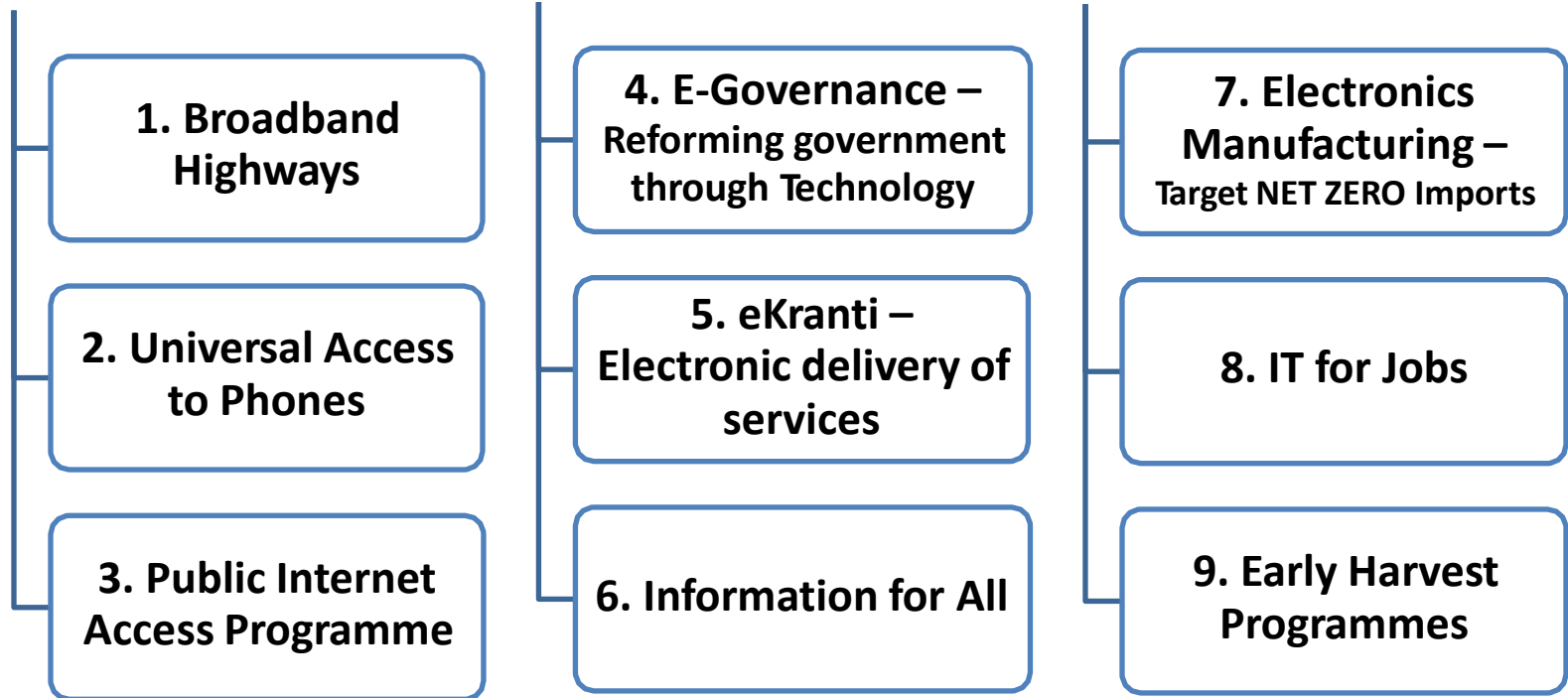
Vision Area 2: Governance & Services On Demand

- **Seamlessly integrated** across departments or jurisdictions
- Services **available in real time** from online & mobile platform
- **All citizen entitlements** to be available on the cloud
- Services digitally transformed for improving Ease of Doing Business
- Making **financial transactions electronic & cashless**
- Leveraging GIS for **decision support systems & development**

Vision Area 3: Digital Empowerment of Citizens

- Universal **Digital Literacy**
- Universally accessible **digital resources**
- **All documents/ certificates to be available on cloud**
- Availability of digital resources / services in **Indian languages**
- **Collaborative digital platforms** for participative governance
- **Portability** of all entitlements through cloud

Nine Pillars of Digital India



Pillar 1. Broadband Highways

Broadband for all Rural

- Coverage: 250,000 GP
- Timeline: December 2016
- CAPEX: Rs 32,000 Cr
- Nodal Dept: DoT

1yr: 50,000 GP
2yr: 100,000 GP
3yr: 100,000 GP

Broadband for all Rural

- Virtual Network Operators for service delivery.
- Mandate communication infrastructure in new development and buildings.

Changes in Rules to facilitate.

National Information Infrastructure

- Coverage: Nationwide
- Timeline: March 2017
- Cost: Rs 15,686 Cr
- Nodal Dept: DeitY

Integration of SWAN, NKN, NOFN. To be implemented in 2 years

Pillar 2. Universal Access to Mobile Connectivity

Universal Access to mobile connectivity

- Coverage: Remaining uncovered villages (~ 42,300 villages)
- Timeline: FY 2014-18
- Cost: Rs 16,000 Cr
- Nodal Dept: DoT

Ongoing Programme
Increased network
& Penetration &
Coverage of gaps

Pillar 3. Public Internet Access Programme – National Rural Internet Mission

CSCs – made viable,
multi-functional
end-points for
service delivery

- Coverage: 2,50,000 villages (now 130,000)
- Timeline: 3 Years - March 2017
- Cost: Rs 4750 Cr
- Nodal Agency: DeitY

Ongoing Programme
Reach of Govt.
services to all GPs

Post Offices
to become
Multi-Service
Centres

- Coverage: 1,50,000 Post Offices
- Timeline: 2 Years
- Nodal Agency: D/o Posts

This should be
long term vision for
POs

Pillar 4. e-Governance: Reforming Government through Technology

- Government **Business Process Re-engineering** using IT to improve transactions
 - Form Simplification, reduction
 - Online applications and tracking, Interface between departments
 - Use of online repositories e.g. school certificates, voter ID cards, etc.
 - Integration of services and platforms – UIDAI, Payment Gateway, Mobile Platform, EDI
- **Electronic Databases** – all databases and information to be electronic, not manual
- **Workflow automation** inside government
- **Public Grievance Redressal** - using IT to automate, respond, analyse data to
- identify and resolve persistent problems – largely process improvements
- **To be implemented across government - critical for transformation.**

Pillar 5. eKranti - Electronic Delivery of Services

- **Technology for Education – e-Education**
 - All Schools connected with broadband
 - Free wifi in all schools (250,000)
 - Digital Literacy program
 - MOOCs – develop pilot Massive Online Open
 - Courses
- **Technology for Health – e-Healthcare**
 - Online medical consultation
 - Online medical records
 - Online medicine supply
 - Pan-India exchange for patient information
 - Pilots – 2015; Full coverage in 3 years
- **Technology for Planning**
 - • GIS based decision making
 - • National GIS Mission Mode Project
- **Technology for Farmers**
 - Real time price information
 - Online ordering of inputs
 - Online cash, loan, relief payment with mobile banking
- **Technology for Security**
 - Mobile Emergency Services
- **Technology for Financial Inclusion**
 - Mobile Banking
 - Micro-ATM program
 - CSCs/ Post Offices
- **Technology for Justice**
 - e-Courts, e-Police, e-Jails, e-Prosecution
- **Technology for Security**
 - National Cyber Security Co-ordination Center

Ongoing Programme (NeGP) – will be revamped to cover these elements

Pillar 6. Information for All

- **Online Hosting of Information & documents**
 - Citizens have open, easy access to information
 - Open data platform
- **Government pro-actively engages through social media** and web based platforms to inform citizens
 - MyGov.in
 - **2-way communication** between citizens and government
- **Online messaging** to citizens on special occasions/programs
- **Largely utilise existing infrastructure** – limited additional resources needed

Pillar 7. Electronics Manufacturing Target NET ZERO IMPORTS by 2020

- **Target NET ZERO Imports is a striking demonstration of intent**
- **Ambitious goal** which requires coordinated action on many fronts
 - Taxation, Incentives
 - Economies of Scale, Eliminate cost disadvantages
 - **Focused areas – Big Ticket Items**
 - FABS, Fab-less design, Set top boxes, VSATs, Mobiles, Consumer & Medical Electronics, Smart Energy meters, Smart cards, micro-ATMs
 - Incubators, clusters
 - Skill development
 - Government procurement
- There are many ongoing programs which will be fine-tuned.
- **Existing Structures inadequate to handle this goal. Need strengthening.**

Pillar 8. IT for Jobs

Train people in smaller towns & villages for IT sector jobs

- Coverage: 1 Crore students
- Timeline: 5 years
- Cost: Rs 200 Cr for weaker sections
- Nodal Agency: DeitY

New Scheme

IT ready workforce

IT/ITES in NE

- Scope: Setting up of BPO per NE State
- Coverage: NE States
- Nodal Agency: DeitY

ICT enabled growth in NE

Train Service Delivery Agents to run viable businesses delivering IT services

- Coverage: 3,00,000
- Timeline: 2 Years
- Nodal Agency: DeitY

Ongoing
Skilled VLEs and Viable CSCs

Telecom service providers to train rural workforce to cater to their own needs

- Coverage: 5,00,000
- Timeline: 5 Years
- Nodal Agency: DoT

Telecom ready workforce

Pillar 9. Early Harvest Programmes

IT platform for messages

- Coverage: Elected representatives, All Govt employees
- 1.36 Cr mobiles and 22 Lakh emails
- Mass Messaging Application developed

Targeted Mass messaging since July 14

Government Greetings to be e-Greetings

- Basket of e-Greetings templates available
- Crowd sourcing of e-Greetings thru MyGov
- e-Greetings Portal ready by 14 August 2014

1st e-Greeting from PM on 15th Aug 2014

Biometric attendance

- Coverage: All Central Govt. Offices in Delhi
- Operational in DeitY & Initiated in Urban Development
- On-boarding started in other depts
- Procurement of devices – tender issued

To be completed by Oct 2014

Pillar 9. Early Harvest Programmes

Wi-fi in All Universities

- Scope: All universities on NKN
- 400 additional Universities
- Cost: Rs 790 Cr

Approval - Oct 2014
Implementation
done by Dec 2015

Secure email within government

- Phase I upgradation for 10 Lakh employees done
- Ph II for 50 Lakh employees by March 2015
- Cost: Rs 98 Cr

Email to be primary
mode of
communication

Standardize government email design

- Standardised templates under preparation

To be ready by
October 2014

Pillar 9. Early Harvest Programmes

Public wifi hotspots

- **Coverage:** Cities with pop > 1 Mill., tourist centres
- **Nodal Agency:** DoT/ MoUD

Digital Cities
Completed by Dec
2015

School Books to be eBooks

- **Nodal Agency:** MHRD/ DeitY

Completed by Mar
2015

SMS based weather information, disaster alerts

- **DeitY's Mobile Seva Platform ready**
- **Nodal Agency:** MoES (IMD) / MHA (NDMA)

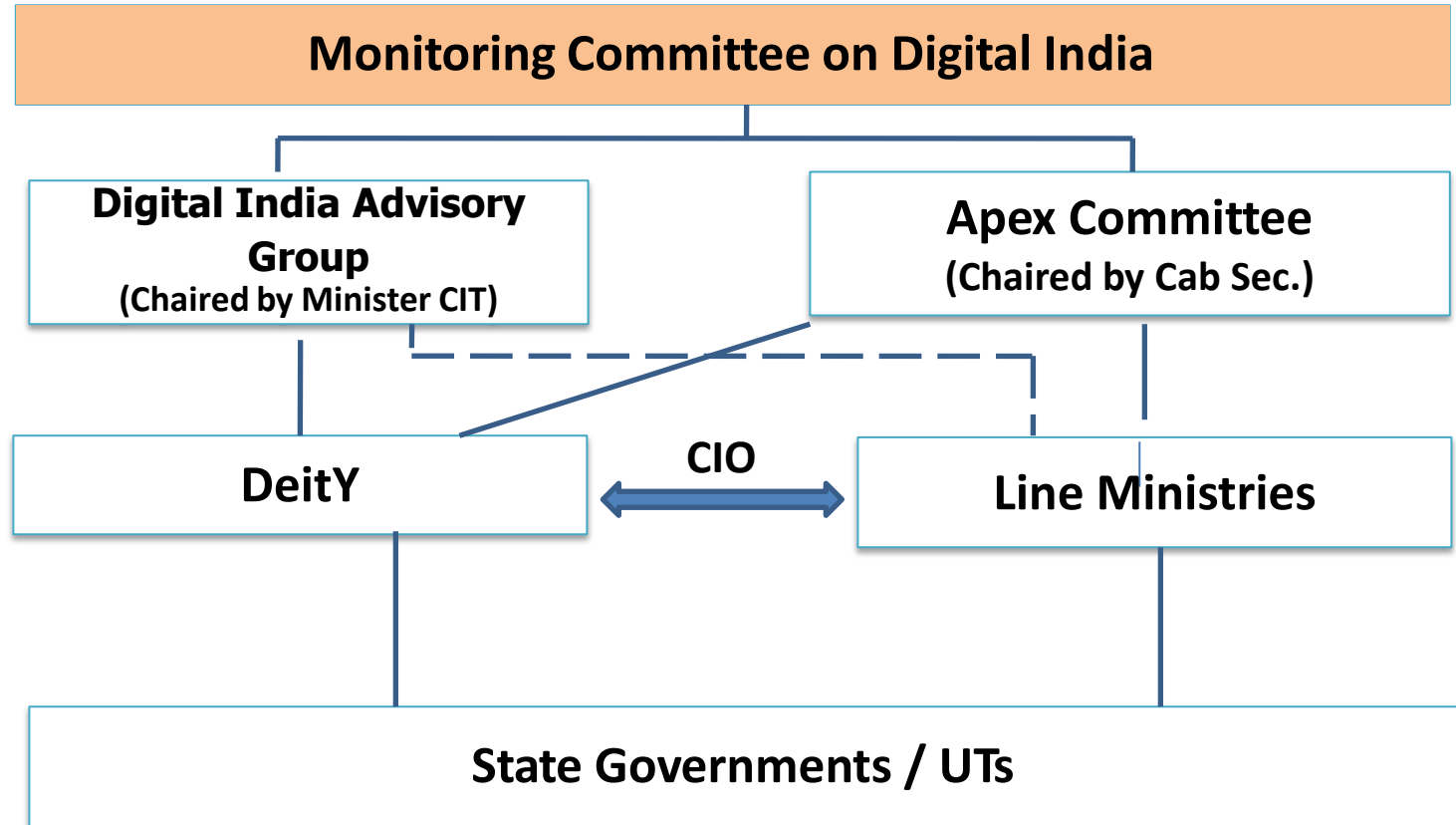
In place by Dec
2014

National Portal for Lost & Found children

- **Nodal Agency:** DeitY/ DoWCD

Completed by
May 2015

Institutional Mechanisms at National Level



Composition of Monitoring Committee on Digital India

- **Prime Minister – Chairman**
- Finance Minister
- Minister of Communications & IT
- Minister of RD
- Minister of HRD
- Minister of Health

Special Invitees:

- Principal Secretary to PM
- Cabinet Secretary
- Secretaries of Expenditure, Planning, DoT and Posts
- Secretary, DeitY – Convener

MINISTER
(Communications & IT)

SECRETARY
(DeitY)

Reorganisation of NIC

CIOs in important Ministries

Addl. Secretary
(e-Gov)

Joint Secretary
(Electronics Hardware
Manufacturing)

Joint Secretary
(Personnel, Admn. &
Industry Promotion S/W)

Addl. Secretary
(Digital India)

Electronic Manufacturing –
Target Net Zero Imports

Joint Secretary
(e-Gov)

Joint Secretary
(Infrastructure
Development)

Joint Secretary
(Capacity Building &
Digital Enablement
of Citizens)

Joint Secretary
(IT applications in un-
covered areas &
Process Re-engineering)

Electronic Delivery of
Services - eKranti

Public Internet Access
Programme

Technology for Jobs

Information for All

E-Governance: Reforming
Government through
Technology

Estimated Costs and Impacts

■ Overall Costs of Digital India

- ~ Rs 100,000 Cr in ongoing schemes (only DeitY, DOT & not incl. those in other line Ministries)
- ~ Rs 13,000 Cr for new schemes & activities

■ Impact of Digital India by 2019

- Broadband in 2.5 lakh villages, universal phone connectivity
- Net Zero Imports by 2020
- 400,000 Public Internet Access Points
- Wi-fi in 2.5 lakh schools, all universities; Public wi-fi hotspots for citizens
- Digital Inclusion: 1.7 Cr trained for IT, Telecom and Electronics Jobs
- Job creation: Direct 1.7 Cr. and Indirect at least 8.5 Cr.
- e-Governance & eServices: Across government
- India to be leader in IT use in services – health, education, banking
- Digitally empowered citizens – public cloud, internet access

Challenges & Changes Needed

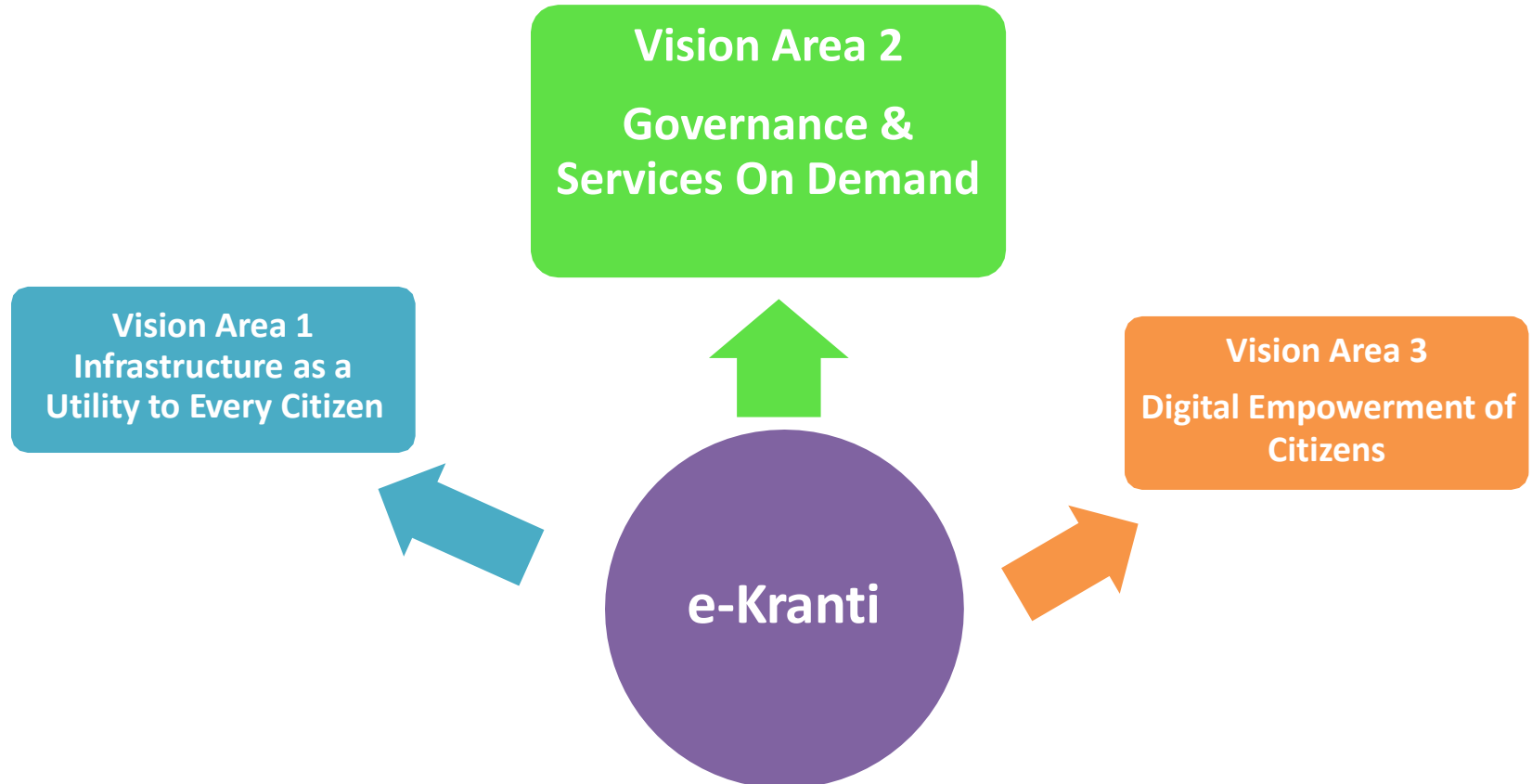
- **Program on this scale never conceived**
- **Each Pillar/program has own challenges**
- **Human Resource Issues**
 - NIC - not equipped for a fraction of this task (obsolesce) - needs revamping & restructuring
 - DeitY – needs program managers – at least 4 more officers at senior levels
 - **Ministries – Need a Chief Information Officer / Chief Technology Officer (CIO/CTO)**
 - Could begin with CIOs 10 major Ministries
 - Can be anyone – from within or outside government
 - To be patterned as AS & FAs – dual reporting
- **Financial Resource Issues**
 - Mostly structured around ongoing programs : Better focus, need some restructuring
 - Some others are process improvements or better utilisation of resources
 - A few new programs may be needed – particularly in Electronics manufacturing and Skill Development
- **Coordination Issues**
 - Program covers many other departments
 - Need commitment and effort
 - Leadership and support critical for success



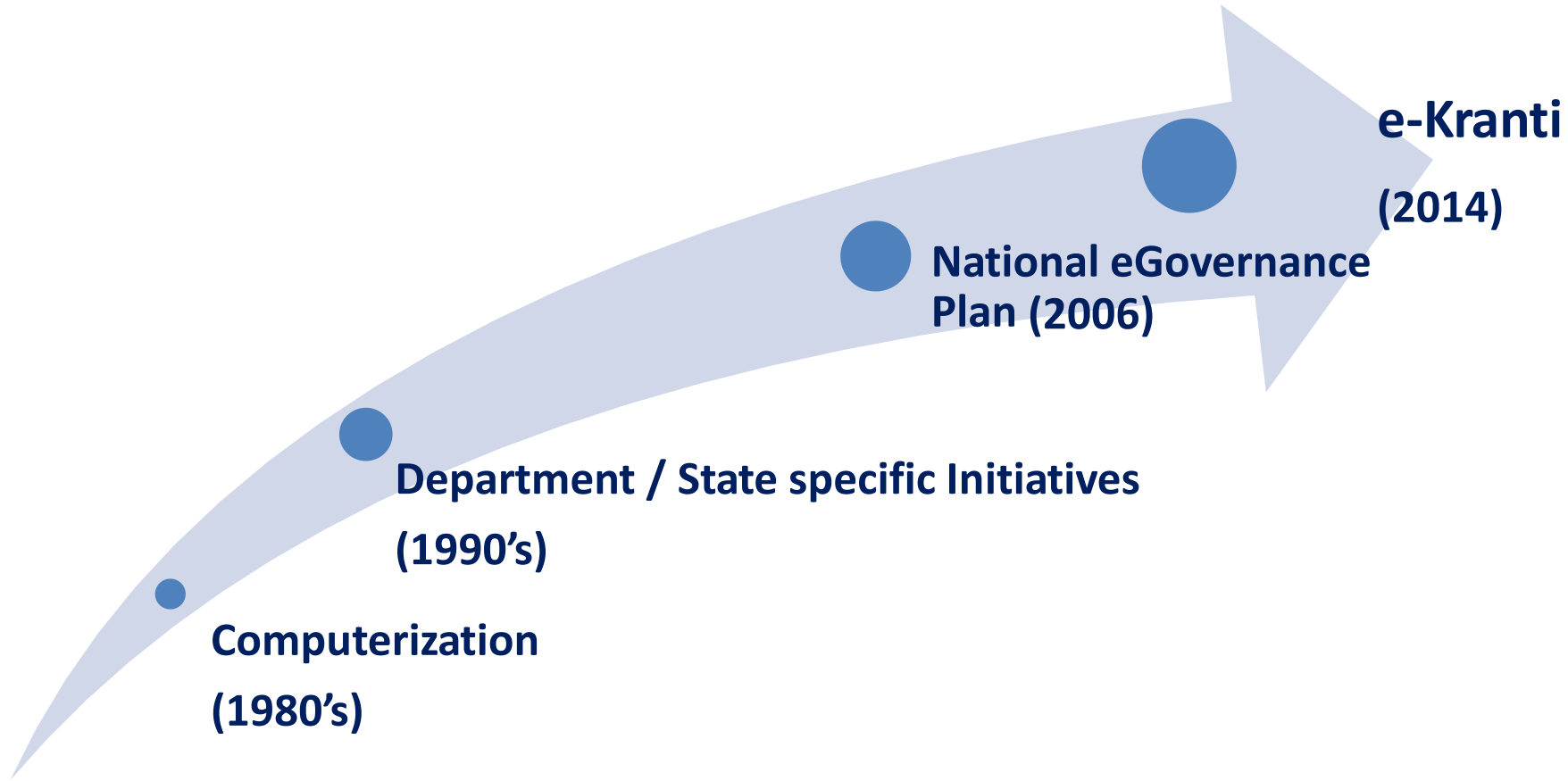
e-KRANTI

National eGovernance Plan 2.0

Digital India and e-Kranti



Evolution of e-Governance in India



National eGovernance Plan

“Make all Government services accessible to the **COMMON MAN IN HIS LOCALITY**, through Common Service Delivery Outlets and ensure **EFFICIENCY, TRANSPARENCY & RELIABILITY** of such services at **AFFORDABLE COSTS** to realise the **BASIC NEEDS** of the common man”

Key Components of NeGP

[May 2006]



- [Integrated Service Delivery Platform](#)
- [Mission Mode Projects](#)
- [Core ICT Infrastructure](#)
 - State Data Centre (SDC)
 - State Wide Area Network (SWAN)
 - [Common Service Centers](#) (CSCs)
 - [State Portal and State Service Delivery Gateway](#) (SSDG)
- **Supporting Components**
 - Core Policies
 - Standards
 - HRD & Trainings
 - Awareness and Assessment

Strengths

- ✓ General Awareness on eGovernance
- ✓ 25 out of 31 MMPs gone live
- ✓ Basic IT Infrastructure available
- ✓ Significant increase in political support
- ✓ Catalyzed movement towards citizen right on time bound delivery of services
- ✓ Supplemented various eGov projects

Weaknesses

- ✓ Lack of attainment in desired impact
- ✓ Significant time overruns
- ✓ Weak Standards and interoperability
- ✓ Low degree of process-reengineering
- ✓ Lack of mission approach on implementation
- ✓ Weak monitoring & evaluation system
- ✓ Problem of last mile connectivity
- ✓ Sub optimal use of Core IT Infra

NeGP

Opportunities

- ✓ Huge advancements in the Technology
- ✓ Advent of the Cloud
- ✓ New business models
- ✓ Capacity Building
- ✓ Radical process re-engineering
- ✓ Leapfrog in the quality & nature of citizen services offered through eGov

Threats

- ✓ Losing appeal for Transformation
- ✓ Some eGov Projects obsolete or inefficient
- ✓ A large number of islands of IT activity
- ✓ Competitive disadvantage vis-à-vis Other countries

Need for redefining and revamping NeGP

- Incremental approach Vs. Transformational approach
- Consequence of SWOT Analysis
- New Image – Brand / Impact Index
- New Priorities – MMPs / Platforms / Policies
- Integrated Service Delivery
- Global Leadership – Competitive Advantage

NeGP

- **Processes**
 - Computerization without mandatory Process Reengineering
 - Quantity versus Quality of Services
- **People**
 - Limitation in terms of skilled manpower
- **Technology**
 - Application development lacked integration and interoperability
 - Creation of infrastructure / hardware vis-a-vis infrastructure on demand
 - Emerging Technology like Cloud, Mobile not used as first choice
- **Business Models**
 - CAPEX
 - Less focus on PPP

e-Kranti

- **Processes**
 - Process Reengineering Mandatory
 - Impact Index
- **People**
 - [CITOs](#) | Virtual IT Cadre
- **Technology**
 - Cloud by default
 - Mobile First
 - Common Application Software
 - Mandatory eGovernance Standards
- **Business Models**
 - Infrastructure on Demand
 - OPEX
 - PPP / PPPP

TRANSFORMATION

Why eKranti : NeGP 2.0 ? (1/2)

- **To achieve vision of Digital India programme**
 - Governance and Services on Demand | Digital Empowerment of Citizens | Infrastructure as a core utility
- **For enhancing portfolio of Citizen Centric Services**
 - To cover all citizen centric services / Social Sector Schemes
 - Long gestation period of MMPs (Health, Education, e-Posts)
- **Desirability of optimum usage of Core Infrastructure**
 - SDC – 23* SWAN – 34* SSDG – 23* CSCs – 1,39,696* ***Operational**
 - MSDG, NSDG and Payment Gateway Operational
- **For rapid Replication and Integration of eGov Applications**
 - Lack of integrated services
 - Lack of Government Process Reengineering
 - Lack of end to end automation
 - Lack of interoperability among existing eGov applications
 - Lack of replication of successful eGov applications across States and UTs

Why eKranti : NeGP 2.0 ? (2/2)

- **Need to exploit Emerging Technologies**
 - Cloud – IaaS, PaaS, SaaS
 - Mobile Platform- Smart phones, Tablets
 - Geo-Spatial Information System (GIS)
 - Software Defined Network (SDN)
 - Big Data Analyticsetc
- **Avoid risk of obsolescence**
- **Need for introducing more agile implementation models**
 - Common Application Software with configurable modules
 - Integration through Open APIs

Vision of e-Kranti

“Transforming e-Governance for Transforming Governance”

Mission of e-Kranti

“To ensure a Government wide transformation by delivering all Government services electronically to the citizens through integrated and interoperable systems via multiple modes, while ensuring efficiency, transparency and reliability of such services at affordable costs”

Principles of e-Kranti

- Transformation and not Translation
- Integrated Services and not Individual Services
- GPR to be mandatory in every MMP
- Infrastructure on Demand
- Cloud by Default
- Mobile First
- Fast Tracking Approvals
- Mandating Standards and Protocols
- Language Localisation
- National GIS
- Security and Electronic Data Preservation

Institutions and Instruments

- National e-Governance Academy
- e-Governance Knowledge Portal
- Create e-Governance Impact Index
- Effective use of Social Media

Implementation & Delivery

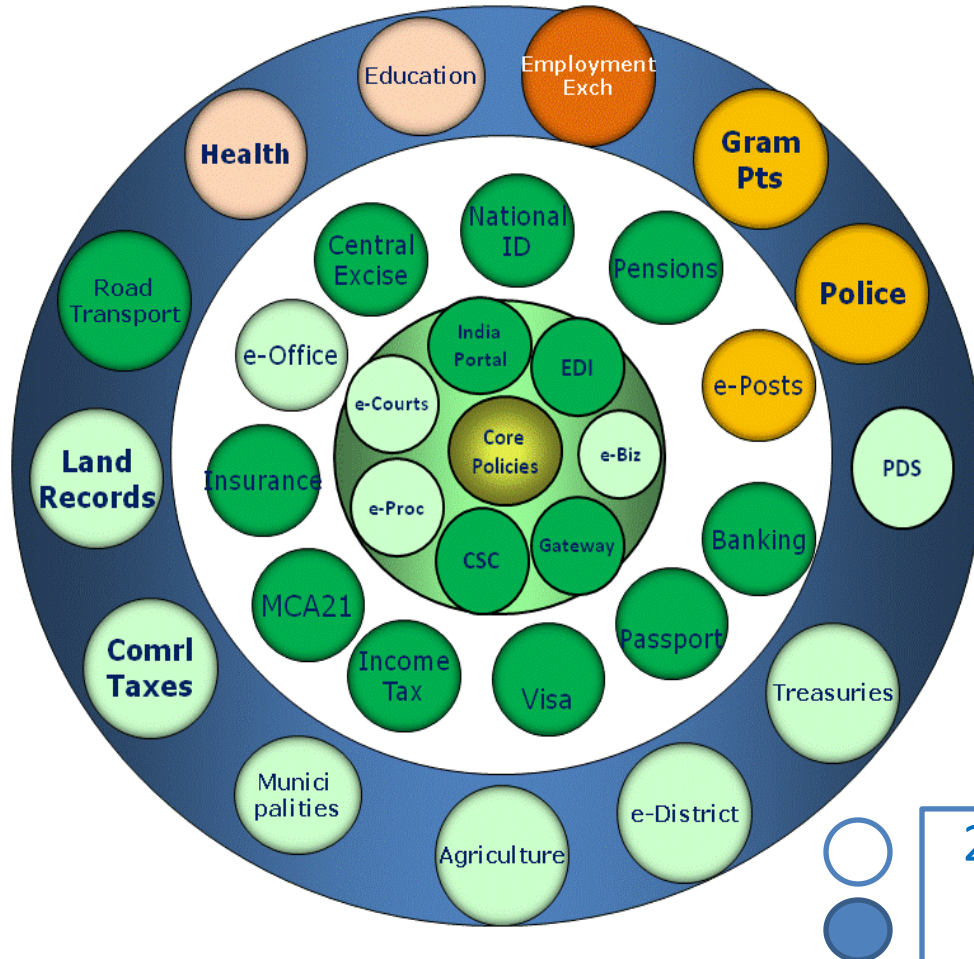
- Transforming the Delivery Channels
- Awareness and Communication
- Introduce New Business Models
- International Co-operation

Status Update

- Cabinet Note on e-Kranti approved by Union Cabinet on 25.03.2015
- Programme Management Structure and Implementation Approach aligned with Digital India Programme
- Inclusion of [13 new MMPs](#)
- Financial Details to be worked out and approval taken project wise by the Line Ministry / Department / State Government

All Central Ministries/ Departments and All States/UTs are being communicated

National e-Governance Plan

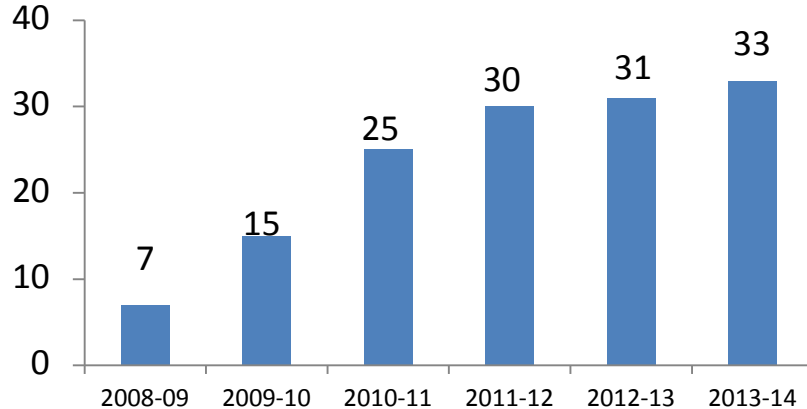


- 14** Providing Services
- 11** Providing services partially
- 3** Under Implementation
- 1** Design & Development
- 2** At DPR/EFC Stage ←

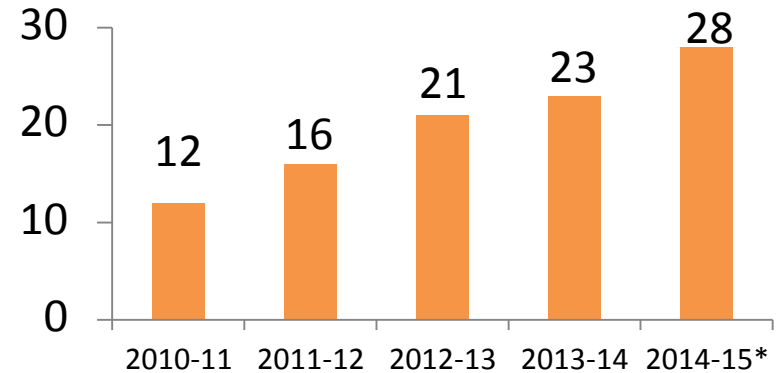
27.74 Cr Txns per month (during last 6 month ending on 28.02.2015)

Core Infrastructure under NeGP

State Wide Area Network

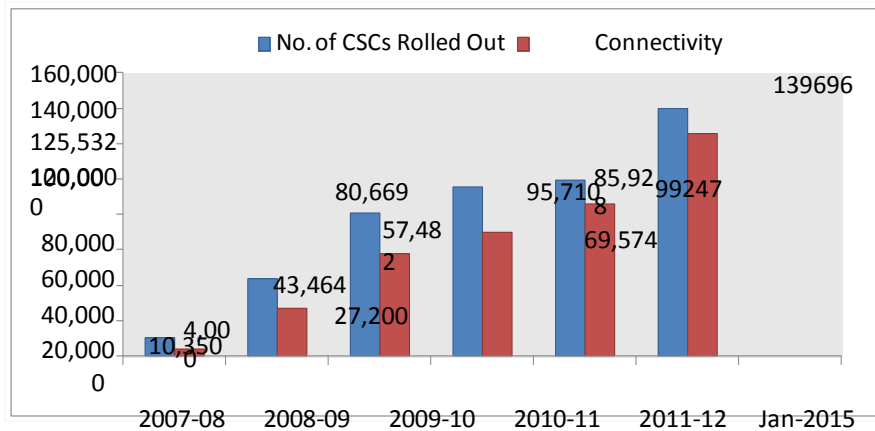


State Data Center

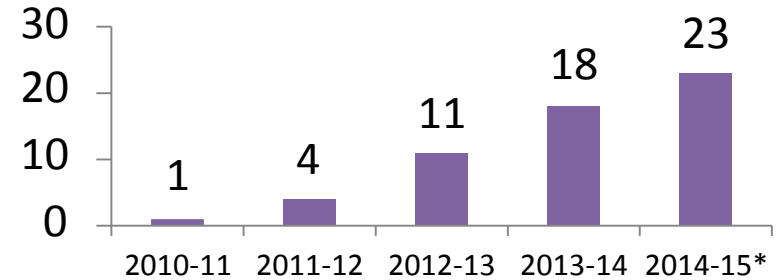


Core Infrastructure under NeGP

Common Service Centers



SSDG and State Portal



* Target

S.N.	New MMPs	Owner Dept	Key Components
1	e-Sansad	Parliament of India, Lok-Sabha Secretariat	Bills, Gazette notifications, Budget, Parliamentary Questions database, Parliamentary proceedings, Publications
2	e-Vidhaan	Parliament of India, Lok-Sabha Secretariat	as above for State Legislatures -
3	Financial Inclusion	Financial Services	Strengthening Banking & Insurance services in the rural areas through strategic use of ICT
4	Roads and Highways Information System (RAHI)	M/o Road Transport & Highways	Integrated citizen centric services related to roads and highways
5	Agriculture 2.0	D/o Agriculture	Sector specific services for Horticulture and Fisheries, Governance & citizen-centric services for Co-operatives and Fertilizer testing labs

S.N.	New MMPs	Owner Dept	Key Components
6	NGIS	D/o Science and Technology	Integrated GIS Platform
7	Rural Development	D/o Rural Development	A portfolio of rural development services including NREGA
8	Social Benefits	M/o Social Justice and Empowerment as the leader and other welfare departments as co-owners	Online Benefit Schemes, Integrated eServices for NGOs
9	Women and Child Development	M/o Women and Child Development	Integrated Child Development Scheme, Integration with Health MMP
10	Common IT Roadmap for Para Military Forces	MHA	

S.N.	New MMPs	Owner Dept	Key Components
11	e-Bhasha	DeitY	Language Localization
12	NMEICT	D/o Higher Education	Various ICT projects at UG and PG levels
13	Urban Governance	M/o Urban Development	ICT in leakage of water, solid waste management and GPS enablement in vehicles of municipalities

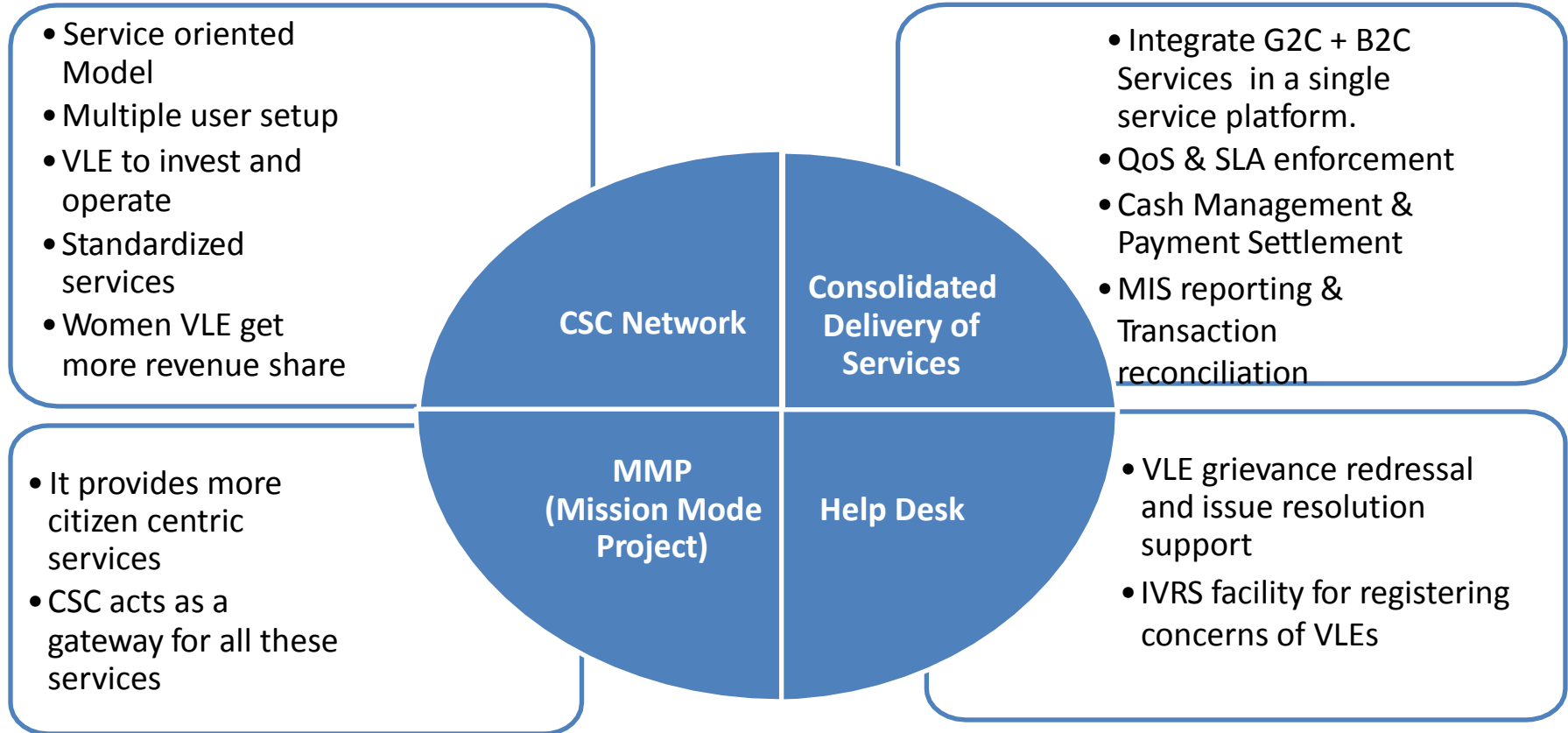
Rationale for State MMPs

- Strategic
 - Centralized Planning and Decentralized Implementation
 - Common Application Software – single / multiple instances
 - Productisation & Replication of best domain specific applications with Configurable Modules
 - Integrated Service Delivery
- Economic
 - National Saving in terms of utilization of Common Infrastructure, Common Platforms, Common Applications, Common Databases
- Social
 - Helping States/UTs to adopt solutions on par with the best
 - Flexibility to States to include and implement additional projects based on their socio-economic needs

CSC 2.0: The Proposal

- To establish 2.5 lakh CSC centres at Gram Panchayat level
- To act as citizen interface for online delivery of various citizen centric services, leveraging the existing State/UT infrastructure in form of SSDG, e-District, SWAN, SDC etc
- It is envisaged to have one CSC at each Gram Panchayat
- Objectives:
 - Non-discriminatory access to e-Services to rural citizens
 - Operationalizing CSC Network
 - Enablement and consolidation of online services under one portal
 - Dedicated manpower support at National, State and District level
 - 250,000 CSCs- one per Gram Panchayat, Integrate existing 1,00,000 CSCs
 - Upgrade and relocate CSCs as needed,
 - Making operational 1,50,000 additional CSCs

CSC 2.0: Key Scheme Components



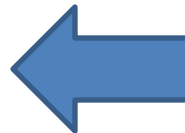
State Portal and SSDG

- Project conceived to provide electronic delivery of services to Citizens.
- Easy, anywhere, anytime access to Government Services
- Enable integrated service delivery by
 - Online/offline e-filing of application available at CSCs through State Portals
 - Intelligent routing of forms to destination field office by Middleware
- Assured electronic delivery, acknowledgement and status tracking of application
- Facilitate online payments through Centralized Payment Gateway (National PayGov)
- Facilitate status information/tracking through centralized Mobile Seva platform

State Portal and SSDG

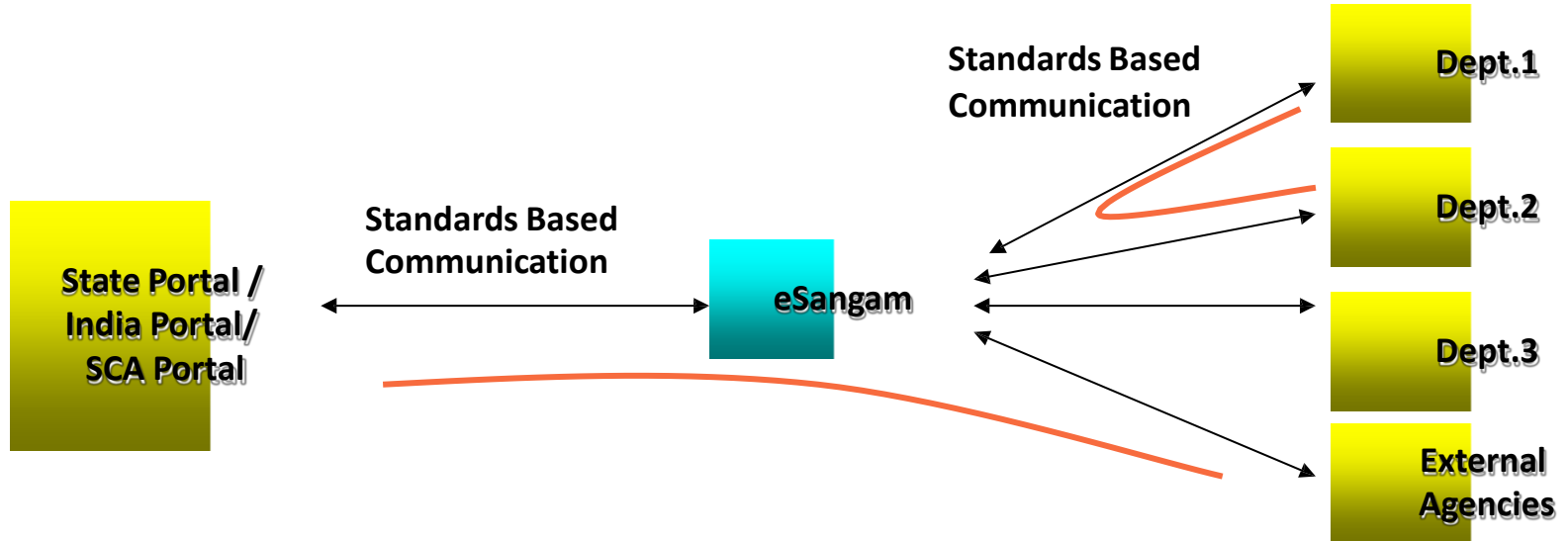
Current Status :

- ❑ Project approved in Dec 2008
- ❑ Proposal approved for 34 states/UTs.
- ❑ 31 states/UTs have floated the RFP for the selection of the Implementing Agency for the project.
- ❑ Out of these 31 RFPs:-
 - ❑ 2 States/UTs are in process of IA selection.
 - ❑ 6 States/UTs are in the implementation phase.
 - ❑ 23 States have gone live.



Sl No	State	Application Received [13-Mar-15]
1	Tamil Nadu	34,09,126
2	Goa	74,180
3	Manipur	1,905
4	Nagaland	39,49,232
5	Himachal Pradesh	1,705
6	Meghalaya	0
7	Uttar Pradesh	2,43,37,831
8	Jammu & Kashmir	17,375
9	Puducherry	385
10	Mizoram	313
11	Sikkim	15,547
12	Assam	5,104
13	Andhra Pradesh	22,36,756
14	Arunachal Pradesh	21
15	Madhya Pradesh	236
16	Rajasthan	3,26,158
17	Chhattisgarh	0
18	Bihar	78,520
19	Tripura	76
20	Kerala	179
21	ANI	59
22	Punjab	0
23	West Bengal	4,007
		3,44,58,715

e-Gov Exchange - eSangam

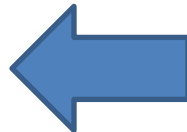


- Core in the e-Governance application architecture
- Standards Supported IIS/IIP (based on XML & SOAP), SOAP, REST
- Functioning as a cluster at the National level & State level

e-Gov Exchange - eSamgam

Benefits

- Developed using open source technology; no vendor locking
- Scalable architecture
- Standardized Communication (IIP/IIS), SOAP, Rest
- Legacy systems join the SOA with minimal effort
- Security - PKI, Digital certificates
- Connectors – Java and Dotnet
- Guaranteed Delivery & Transaction Log
- Time-stamping & Status Tracking
- Shared common services – UID, Payment Gateway, MSDG, etc



Number of Services

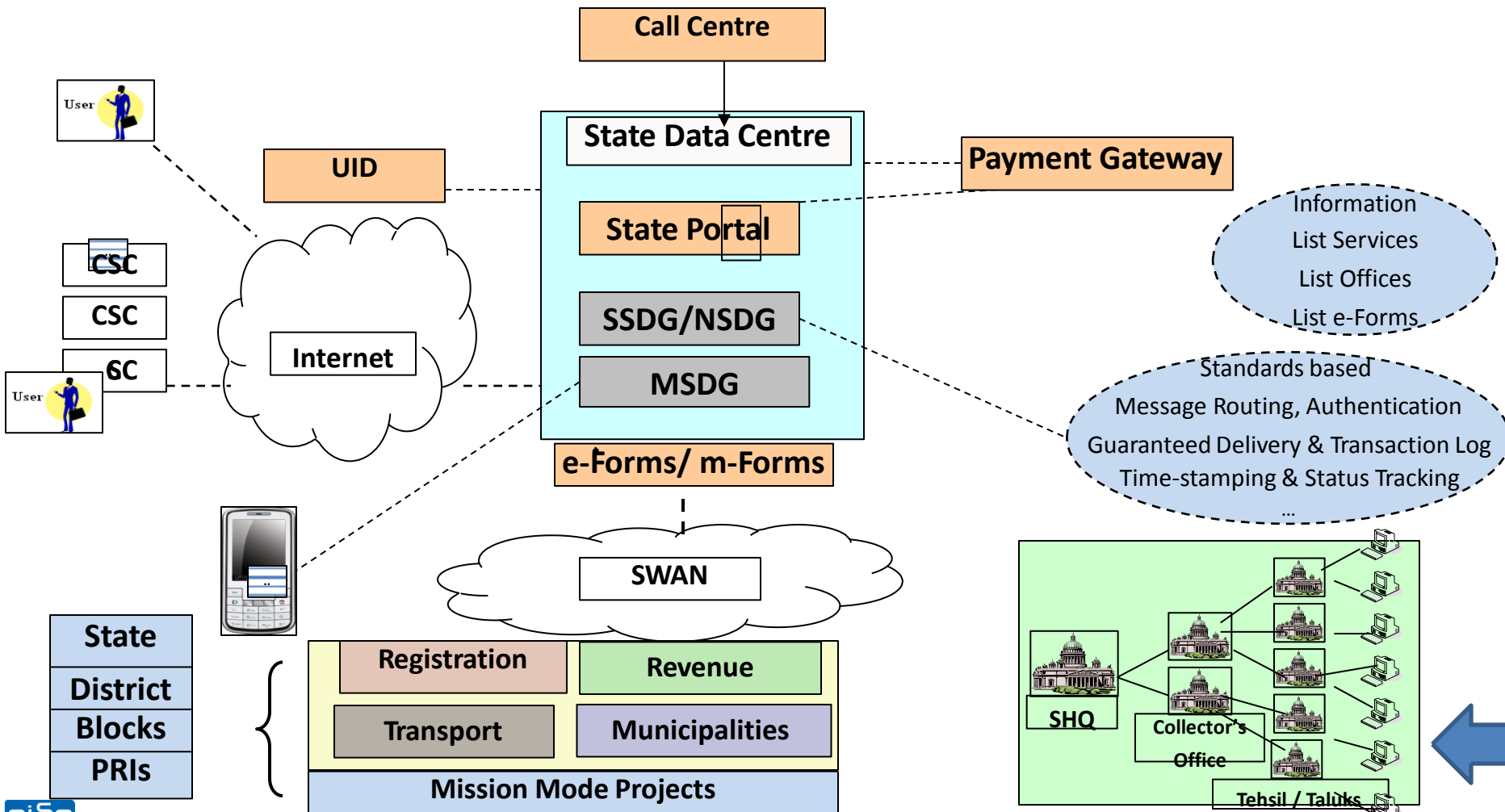
S. N.	Department Services	No of Services
1	DIPP: eBiz	16
2	CBDT: PAN Verification	1
3	NSDL: PAN & TAN Allocation	2
4	UTITISL: PAN Allocation	1
5	RBI	3
6	EPFO	1
7	NSDL Payment Gateway	1
8	PESO	1
9	eDistrict UP	1
10	DIPP: Trademark	1
11	MCA	4
12	J&K State	7
13	DGFT: IEC	1
	Total services	40

Chief Information Technology Officer(CITO)

- Under Digital India programme, positions of Chief Information Technology Officers (CITOs) to be created in at least 10 key Ministries so that various e-Governance projects could be designed, developed and implemented faster.
- CITO positions at the level of Additional Secretary/Joint Secretary with over-riding powers on IT in the
- respective Ministry.
- CITO shall be responsible to the Secretary of the Ministry for alignment of ICT with the Ministry's priorities
- & directions and to the Secretary, DeitY with respect to compliance with Government strategy, policies and standards for Information Management and Information Technology.
- CITO will have a solid line relationship with the Secretary, DeitY for alignment of the technology related
- issues and dotted line relationship with the Secretary of the Administrative Ministry.

Chief Information Technology Officer(CITO)

- APAR of the CITO's will be jointly written by the Secretary of the Administrative
- Ministry concerned and the Secretary, DeitY.
- CITO will be supported by a Chief Technology Officer (CTO)/ Head Technology, an
- Expert Team, the NIC Team already present in the Ministries and a small core
- Secretariat to be created, which will form part of the Electronic Services Division.
- The draft Cabinet Note for the creation of 33 posts of CITO's has been approved by
- Hon'ble MCIT.
- The copies of DCN have been sent to the Cabinet Secretariat and PMO before it is
- submitted to the Cabinet for approval





Introduction to CCTNS **(Crime & Criminal Tracking and Network System)**

Agenda

1. About CCTNS
2. Background of Police Systems in India
3. Overview of CCTNS
4. CCTNS Application and Functionality
5. CCTNS Implementation Framework
6. Ongoing and successful initiatives from some States

About CCTNS

Crime and Criminals Tracking and Network System (CCTNS)

- CCTNS has evolved as a **Mission Mode Project (MMP)** for State Police under National eGovernance Plan
- Ministry of Home Affairs (MHA) has conceptualized CCTNS as a comprehensive and integrated system for enhancing the efficiency and effectiveness of policing through adoption of principles of e-Governance
- CCTNS aims at creation of a nationwide networked infrastructure for evolution of IT-enabled state-of-the-art tracking system around “investigation of crime and detection of criminals” in real time

CCTNS Scheme

- Central Sector Scheme with 100% funding by GOI
- Planning Commission approved an outlay of Rs. 2000 Crore for the Scheme in 11th Five-year Plan period
- Aims to cover the following within this plan period:
 - 14000 Police Stations
 - 6000 higher offices including Circle/ Sub-Division/ District/ Range/ Zone/ Commissionerate/ State Headquarters
 - National Crime Records Bureau (NCRB) and State Crime Records Bureaus (SCRB)
 - Critical interfaces with:
 - Citizens
 - Government and non-government entities such as intelligence agencies, passports, road transport authorities, etc.

Background of Police Systems in India

Background of Police Systems in India

- There have been several initiatives in the past – some led by GOI and some by States
- Extent and level of automation has been highly variable across States
- Many of the earlier applications were stand-alone systems, not facilitating sharing of data across police stations, districts and States (also accentuated by a lack of standardization)
- Adoption and success of these applications has varied for several reasons

Common Integrated Police Application (CIPA)

- Initiated by MHA in 2004-05 to be implemented across India as a “Police Force Modernization” project
- CIPA is a standalone application with focus on automating the workflow at the Police Stations covering:
 - Registration, Investigation, Prosecution of Cases
 - Related Reports
- Implemented in about 20% of police stations across India
- CIPA Technology
 - Client–Server architecture
 - NIC-Linux is the client o/s
 - Java & Postgres SQL technology

Factors underlying the inadequate adoption of some of the past efforts

- Limited utility at the Police Station, which is the primary data generation point:
 - Generally considered data sinks with lots of input and little output
 - Little reduction in the necessity for repetitive, manual tasks; and little reduction in the need to enter each data item multiple times
 - Inadequate local language support
- Usually were standalone systems that did not share data with other police stations and other police formations
- Applications not adequately user-friendly
- Inadequate Capacity Building and Handholding at police stations
- Inadequate vendor management support at State/District/Police station levels (varying from system to system)

Overview of CCTNS

CCTNS: A Holistic Approach towards Police Applications

- New and holistic approach with the following salient features:
 - Networked application that enables sharing of key crime and criminals data between police stations, between police stations and higher offices, other police formations and between police systems and external entities including citizens
 - States and Union Territories to drive the deployment and subsequent management of the system
 - Greater focus on:
 - Capacity Building
 - Change Management
 - Vendor Management

Objectives of CCTNS

- Provide **Enhanced Tools** for Investigation, Crime Prevention, Law & Order Maintenance & Traffic Management
 - Utilize IT for efficiency and effectiveness of core police operations
 - Provide information for easier and faster analysis
- **Increase Operational Efficiency**
 - Reduce redundancy
 - Improve the communication
 - Automate back-office functions
- Create a platform for **sharing crime and criminal information** across the country
 - Improved investigation and crime prevention
- Create a platform for **sharing intelligence**
- Improved **service delivery to the public/ citizen**
 - Access to police services in a citizen-friendly manner
 - Provide alternate modes of service delivery such as internet

Project Overview & Scope

Nation-wide environment for real-time sharing of crime and criminal information and providing online services to the citizens of the Country

Cabinet Note approved on 19th June 2009 for implementation under the 11th Five Year Plan (2009 – 2012)

100% Centrally funded Scheme

Centralized Funding &
Decentralized
Implementation

CCNTS

Project Overview & Scope

One of the largest MMPs in terms of project implementation reach

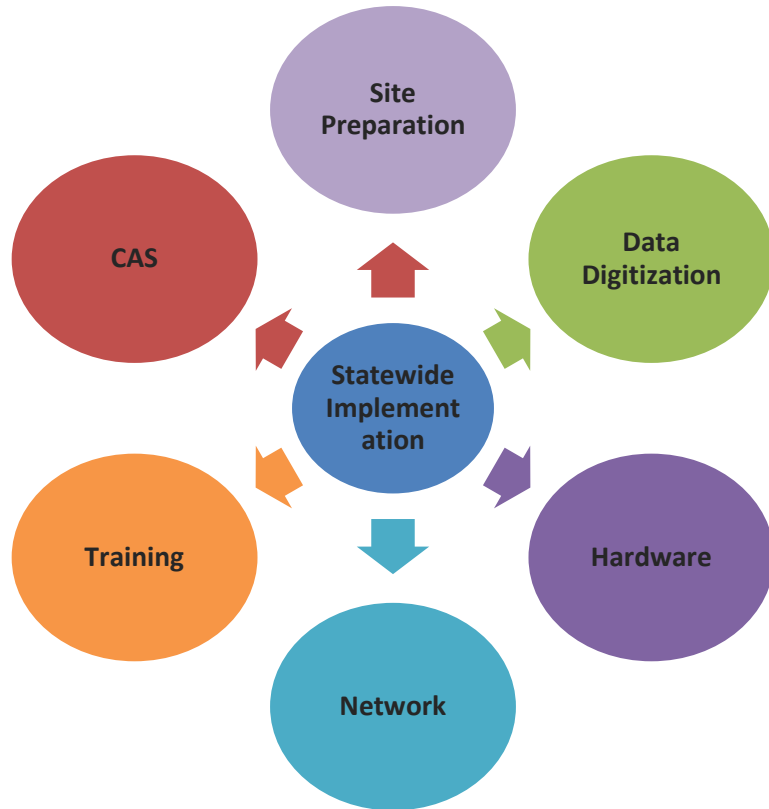
Total outlay of Rs 2000 Crores for project implementation

Implementation across all 35 States and UTs

Covers over 21000 Police Stations and Higher Offices

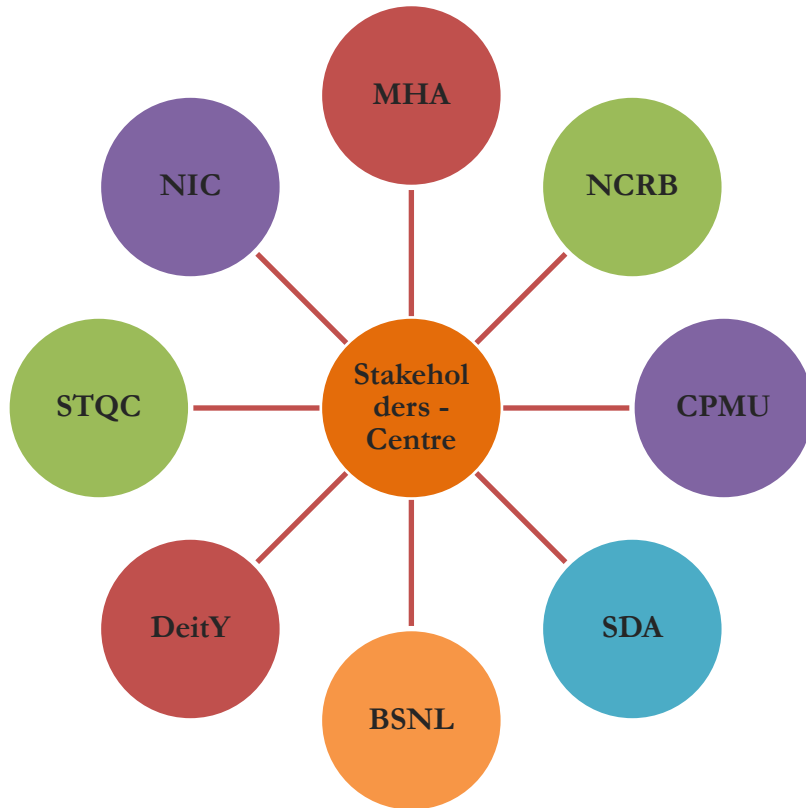
Involves capacity building and change management of more than 1 Million Police Personnel

Implementation - Key Project Components



- Police Stations/ Higher Offices/ Training Centres
- Manual/CCIS/ CIPA data
- SWAN/VPNoBB/WiMax/VSAT
- Basic IT/ Role Based
- Offline/Online

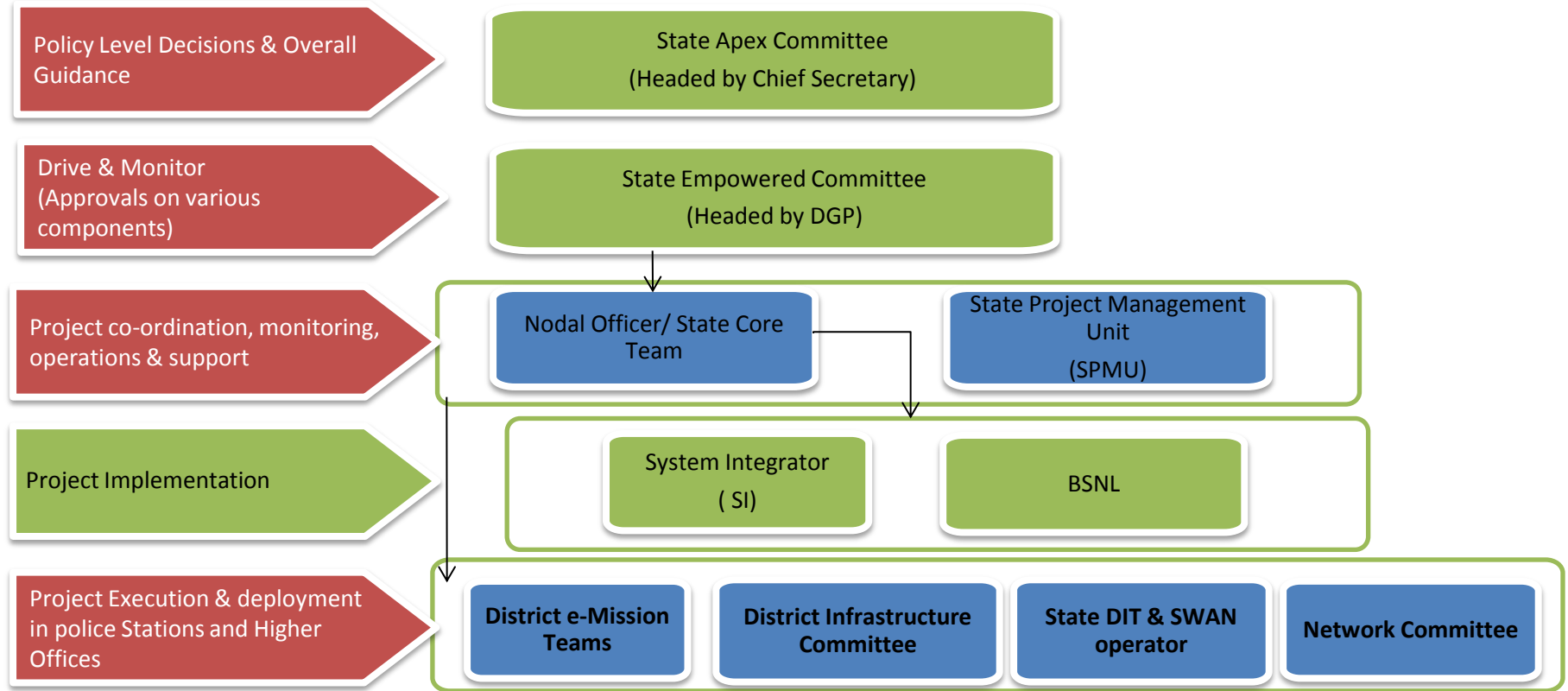
Stakeholders and Governance Structure - Center



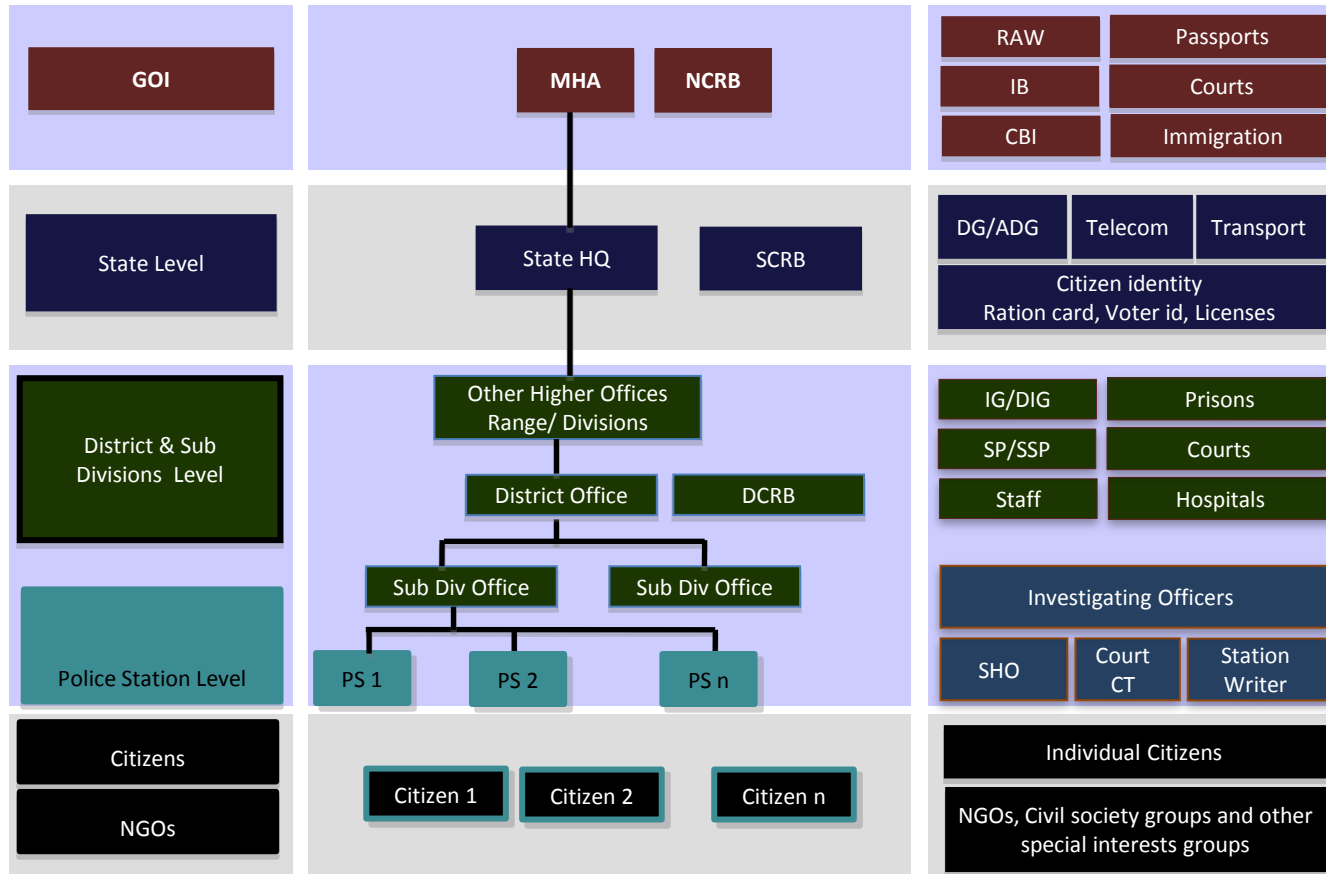
Project Governance

- Project Monitoring & Review Committee
- Empowered Committee
- Process Advisory Group
- Central eMission Team
- SDA Steering Committee
- Central Technical Committee

Stakeholders and Governance Structure - State



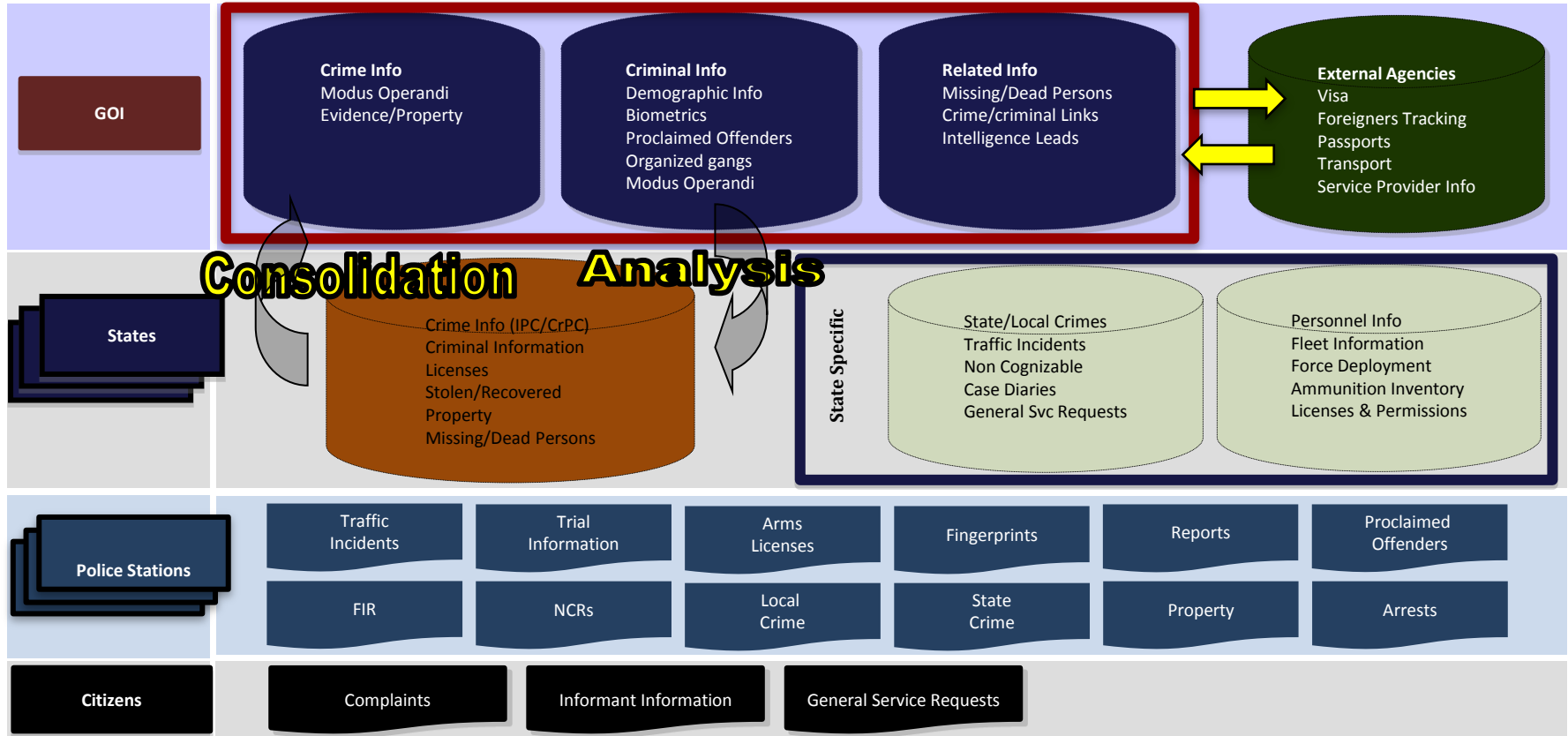
Multiple Stakeholders for CCTNS



Goals and Expectations from CCTNS

<p>GOI</p>	<p>Criminal Info Fingerprint, DNA, Biometrics, Suspects, Arrests, Known criminals, Organized gangs, terrorist orgs</p>	<p>Crime Info Modus Operandi, Missing/Stolen Vehicles, Dead Bodies, Accidents</p>	<p>Property Weapons, Arms, ballistics, Communication devices, equipment, Missing/Stolen/Recovered</p>	<p>Intelligence Information leads, integration with immigration, passports, visas etc.</p>	<p>Nexus Arms, Counterfeit, hawala, human trafficking, financial instruments, smuggling</p>
<p>State Level</p>	<p>State Database Criminals, Crime, Case Banks, Property, Traffic, Non-cognizable</p>	<p>Handling Law and Order Situations</p>	<p>Disaster /Crisis Management</p>	<p>Feed Analysis to Police Stations</p>	<p>Monitoring</p>
<p>District & Block Level</p>	<p>Improved Law and Order</p>	<p>Clearances Passport, Arms Licenses</p>	<p>Monitoring & Reporting</p>	<p>Emergency Response</p>	
<p>Police Station Level</p>	<p>Improved Investigation</p>	<p>Data for Crime Prevention</p>	<p>Reduced Redundancy</p>		
<p>Citizens</p>	<p>Easy access to police services</p>	<p>Enhanced visibility</p>			

CCTNS will address a key need for collating Crime and Criminal information centrally



CCTNS Application

Functionality of CCTNS Core Application Software (CAS)

1. Methodology to Determine Functionality
2. Learning and Best Practices
3. Framework to Determine scope of CAS
4. Functionality of CAS

NISG Study: Scientific Approach to Assessment – 1/1

- Visits to Police Stations and Higher Offices
 - Police Stations – in Andhra Pradesh, Delhi and Karnataka
 - Office of the Senior Superintendent of Police, Ghaziabad District, UP and Hyderabad, AP
 - State Crime Records Bureau, Bangalore, Karnataka
 - NCRB Office, New Delhi
 - Higher Officer in Andhra Pradesh
- Interviews and discussions with Police Staff
 - Police personnel from covering the following designations and roles – DIG, SSP, SP, SHO, IO (Inspector and Sub Inspector level), Station writers, Head Constable, Constable
 - Director and other senior officers of NCRB
 - Specialists in police applications such as e-COPS, Police IT and CIPA
 - Informal discussions with several CIPA nodal officers from different states during the CIPA nodal officers' workshop hosted by NCRB in New Delhi

NISG Study: Scientific Approach to Assessment -2/2

- Focus Group Discussion (FGD) with Investigating Officers from different states
 - Held a FGD with Investigation Officers (IO) from New Delhi, Uttar Pradesh and Haryana at the NCRB office in New Delhi
 - Held detailed panel discussion and breakout sessions to understand their experience with police automation systems including CIPA and their expectations and requirements from a system such as CIPA
- Study of existing police applications in India
 - CCIS
 - CIPA
 - Police IT (Karnataka)
 - E-COPS (Andhra Pradesh)
- Discussions with Officers in MHA and NCRB

Evolution needed for CCTNS

Present Applications

- Focus on data entry
- Limited acceptability at the police station
- Driven by Sequential steps (Workflow driven)
- Standalone application
- Overly centralized management

CCTNS

- Focus on delivering value at the Police Station level
- Focus on usability & ease-of-use of the application
- Event and role driven; Actions on a case can be taken as required without rigid sequence
- Focused on maximising the utility of crime/criminal related information
- Ability to view and exchange data amongst PS, between PS and other police formations and with key external entities (including citizens)
- Central facilitation and coordination
- Driven and owned by States

Guiding Principles for CCTNS Functions (1 of 2)

Focus on functionality that improves outcomes in the area of
“crime investigation and criminals detection”

- Greater insight and intelligence on Crime and Criminals
 - Powerful search, query, reporting functionality
 - Easy access to relevant and useful reporting
 - Vertical and horizontal linkages to other police stations and formations that enhance data availability and utility
 - Role-based views and data access that provides relevant view to maximize benefit for each user group
- Digitization of existing police records
 - Availability of existing police station records to CCTNS Search and Query facilities to render them truly useful in investigation and citizen services

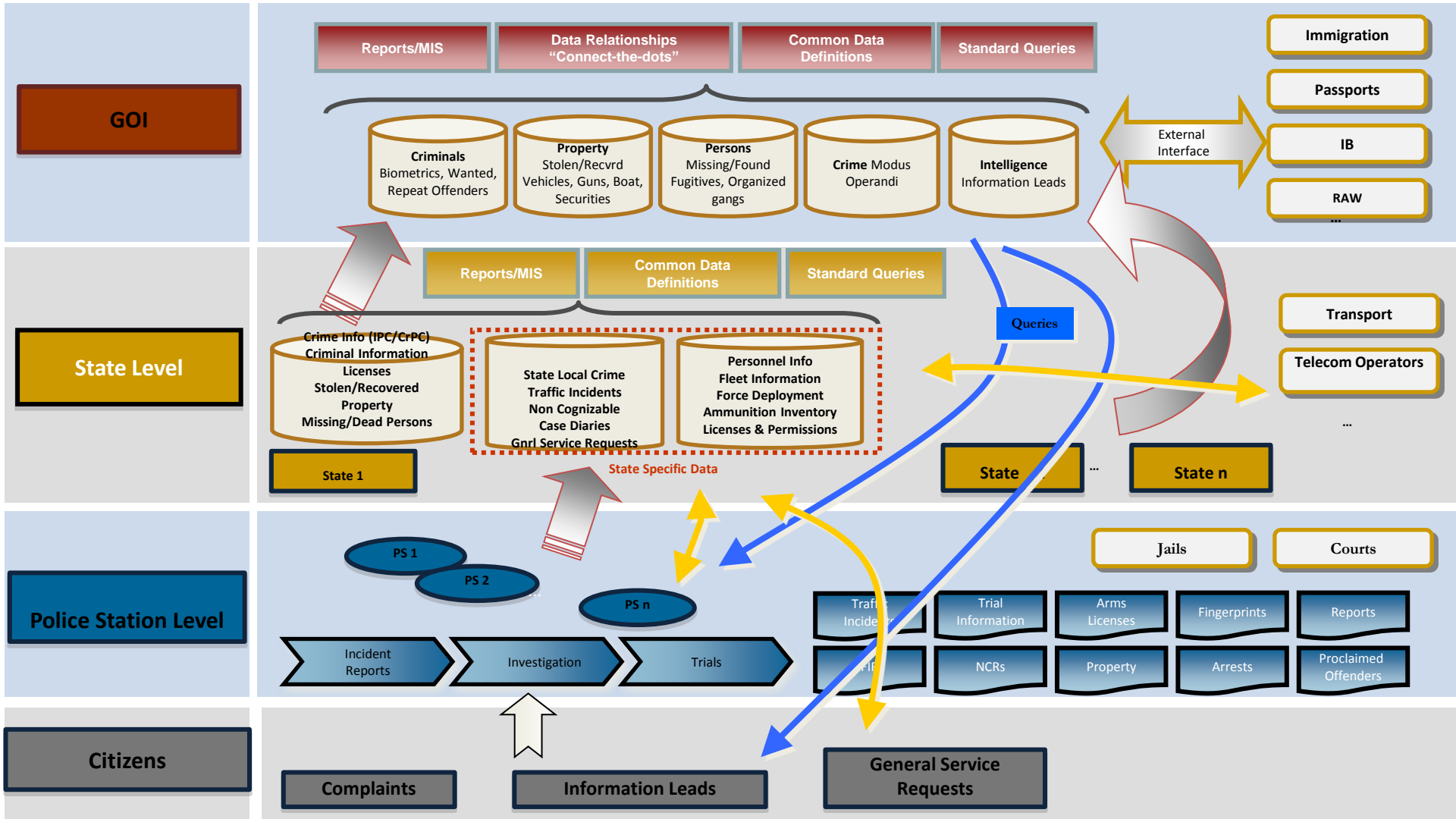
Guiding Principles for CCTNS Functions (2 of 2)

Time & resources freed from low value tasks to core, high impact activities at Police Stations

- Eliminate redundancy by avoiding multiple entry of same data at Police Stations
- Intuitive and user-friendly User Interface (UI) that helps users accomplish their tasks with minimal effort and reduces the barriers for adoption
- Align the function flow and navigation of IT systems to police staff functioning and operations
- Event- and content-driven functionality that better aligns CCTNS to police station roles and activities

Focus on functionality that facilitates communication and flow of information

- Enhance Citizen Service Delivery
- Provide citizen interface for simple queries and service requests
- Better search facilities for police staff to service citizen requests quickly and more accurately



CCTNS Application Suite

- CCTNS application suite would comprise the following:
 - CCTNS Central Core Application Software (central CAS) that is developed by and deployed at National Crime Records Bureau (NCRB)
 - CCTNS State Core Application Software (State CAS) that would be developed centrally and provided to States for customization, enhancement and deployment
 - Configurations, customizations and enhancements to the State CAS performed at the State level before deployment. This is unique for each State and Union Territory
- Ownership
 - Central CAS and State CAS would be owned and managed by GOI at NCRB
 - CCTNS State applications would be owned and managed by each State

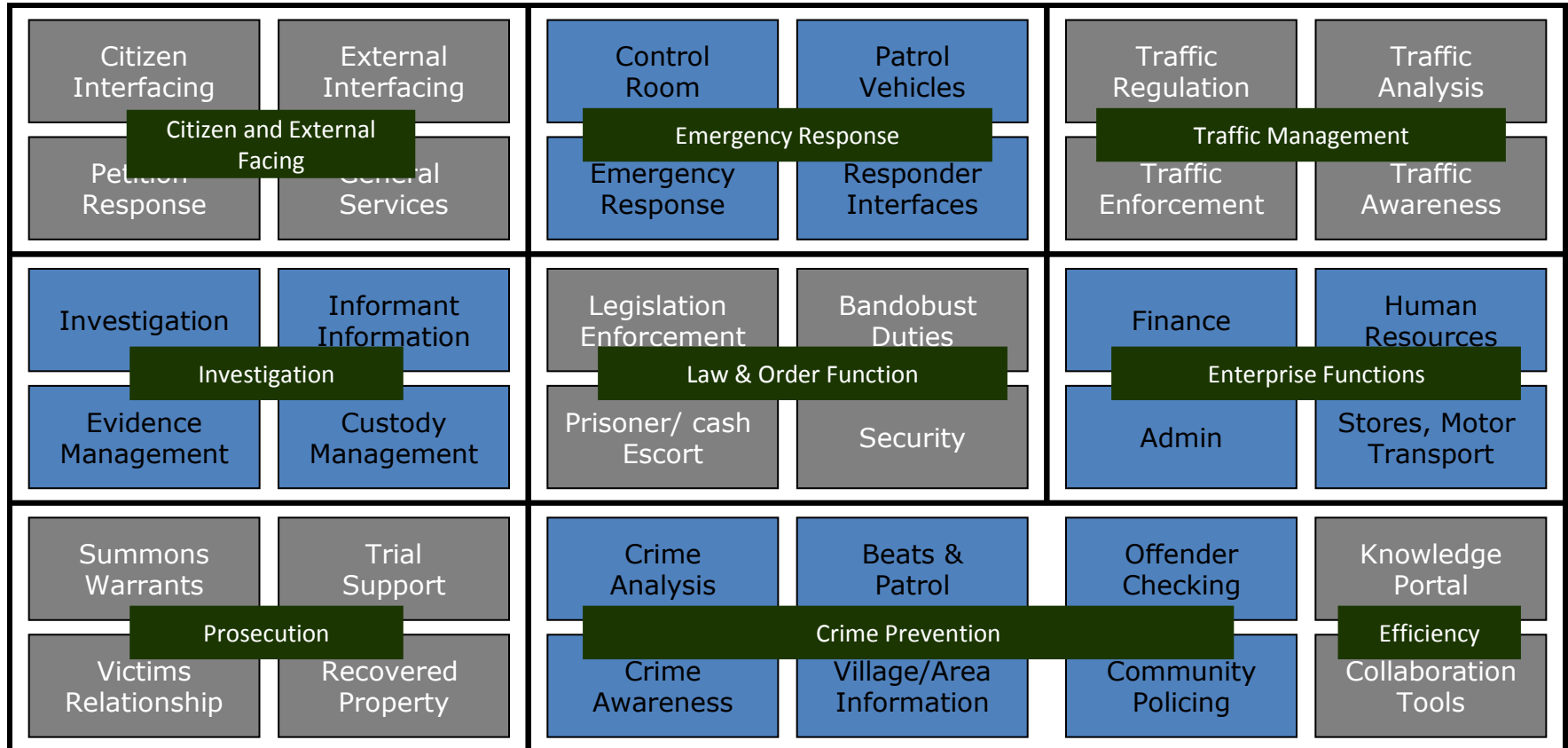
CCTNS Application Components

- CCTNS Core Application Software (CAS) would consist of a Central Application to aid NCRB in data collation and analysis and a minimal State Core Application to be delivered to the States
 - This would ensure uniformity of data standards, schemas and protocols for interoperability, sharing and communication between formations
 - The collated data can be used for information exchange among various agencies on need basis
- MHA will guide States and participate in implementation till the Core Application is implemented in every State.
 - This would ensure a level of consistency in terms of minimum needed functionality; basic building architecture; and a reasonable uniformity of implementation timelines for the first version

CCTNS Application Development Strategy

- NCRB will be the nodal agency with the ownership of the CCTNS Core Application Software (CAS)
 - Institutional mechanism in accordance with NeGP guidelines will be setup at NCRB to develop and manage the CCTNS Core application
 - NCRB will retain the strategic ownership of the application
- CAS will be developed through a Software Development Agency at the Center
 - Leverage the learning & assets of successful police applications in India
 - Help all states achieve a minimum threshold level
 - GOI will provide only the CCTNS Core functionality, rest to be left to the States;
 - CAS would provide the states with the flexibility to build their state specific applications
 - Align the implementation with the NeGP principle of centralized planning and decentralized implementation
 - Minimize technology and vendor lock-in and ensure ownership and control of GOI/ States over CCTNS
 - Minimize the time to deployment without sacrificing quality

Various Functions of a Police Station



Possible Categories of IT Solutions for the Policing Functions

Citizen & External Facing Solutions	Emergency Response Solutions (Command & Dispatch)	Traffic Management Solutions	
Investigation Solutions	Law & Order Solutions	Enterprise Functions	
Prosecution Solutions	Crime Prevention Solutions		Communication & Collaboration
Search, Query, Reporting, MIS, Analysis, Business Intelligence Tools			

Various Modules of Solution Components

<p><u>Citizen & External Facing Solutions</u></p> <ul style="list-style-type: none"> •Citizen Portal •Case Management System •Police Service Center System •Citizen Grievance Redressal •External Interfacing Solutions (Prosecutors, Courts, Jails, Hospitals, Service Providers) 	<p><u>Emergency Response (Command & Dispatch) Solutions</u></p> <ul style="list-style-type: none"> •Caller Identification •Dial-100 Network •Command & Dispatch System •Automatic Vehicle Locators •GPRS-enabled Patrol Vehicles •Mobile Data Terminals 	<p><u>Traffic Management Solutions</u></p> <ul style="list-style-type: none"> •Traffic Complaints System •Integrated Challan System •Traffic Incident Reporting •Traffic Incident Analysis •Accident Reconstruction •Campaign Planner •Digital Enforcement System 	
<p><u>Investigation Solutions</u></p> <ul style="list-style-type: none"> •Criminal Information System •Information Registers •Fingerprint Identification •Surveillance Management •Intelligence Management •Reporting Tools 	<p><u>Law & Order Solutions</u></p> <ul style="list-style-type: none"> •Bandobust Management 	<p><u>Enterprise Functions</u></p> <ul style="list-style-type: none"> •HRMS •Duty Allocation •Finance •Administration •Stores •Motor Transport 	
<p><u>Prosecution Solutions</u></p> <ul style="list-style-type: none"> •Trial Management System •Summons & Warrants System •Victim Relationship Management 	<p><u>Crime Prevention Solutions</u></p> <ul style="list-style-type: none"> •Crime Analysis Tools (Business Intelligence) •Beats Management System •Jail Information System 		<p><u>Communication & Collaboration</u></p> <ul style="list-style-type: none"> •Bulletin Board •Email •Messaging Tools •Case Bank
<p>Search, Query, Reporting, MIS, Analysis, Business Intelligence Tools</p>			

Criteria for determining Components of CAS

- Critical for information related to crime and criminals
 - Critical in enhancing outcomes in the areas of Crime Investigation, Criminals' Tracking
- Functionality is common to all states
 - Such as IPC, CrPC
- Information is required to be collated at the state and/or central level
- Critical to operations of Police Stations for internal efficiency
 - e.g. Police Messaging Systems, Search/Query/Reporting tools
- Utility to the main and critical users of CCTNS
- Requires intervention at the central level for determining standards and/or specifications
 - e.g. Specifications for AFIS (Automated Fingerprint Identification System)

Focus of CAS

<p><u>Citizen & External Facing Solutions</u></p> <ul style="list-style-type: none">• Citizen Portal• Case Management System• Police Service Center System• Citizen Grievance Redressal• External Interfacing Solutions (Prosecutors, Courts, Jails, Hospitals, Service Providers)	<p><u>Emergency Response (Command & Dispatch) Solutions</u></p> <ul style="list-style-type: none">• Caller Identification• Dial-100 Network• Command & Dispatch System• Automatic Vehicle Locators• GPRS-enabled Patrol Vehicles• Mobile Data Terminals	<p><u>Traffic Management Solutions</u></p> <ul style="list-style-type: none">• Traffic Complaints System• Integrated Challan System• Traffic Incident Reporting• Traffic Incident Analysis• Accident Reconstruction• Campaign Planner• Digital Enforcement System
<p><u>Investigation Solutions</u></p> <ul style="list-style-type: none">• Criminal Information System• Information Registers• Fingerprint Identification• Surveillance Management• Intelligence Management• Reporting Tools	<p><u>Law & Order Solutions</u></p> <ul style="list-style-type: none">• Bandobust Management	<p><u>Enterprise Functions</u></p> <ul style="list-style-type: none">• HRMS• Duty Allocation• Finance• Administration• Stores• Motor Transport
<p><u>Prosecution Solutions</u></p> <ul style="list-style-type: none">• Trial Management System• Summons & Warrants System• Victim Relationship Management	<p><u>Crime Prevention Solutions</u></p> <ul style="list-style-type: none">• Crime Analysis Tools (Business Intelligence)• Beats Management System• Jail Information System	<p><u>Communication & Collaboration</u></p> <ul style="list-style-type: none">• Bulletin Board• Email• Messaging Tools• Case Bank
<p>Search, Query, Reporting, MIS, Analysis, Business Intelligence Tools</p>		

Central CAS

- To be hosted at NCRB
- Would receive crime and criminals related and other required data from states
- Would perform the analysis required and facilitate:
 - Creation of intelligence required by NCRB, MHA and other intelligence agencies
 - Report creation (standard and on-demand reporting)
 - Answering parliament questions and other inquiries
 - Sharing of crime and criminals data across states as required

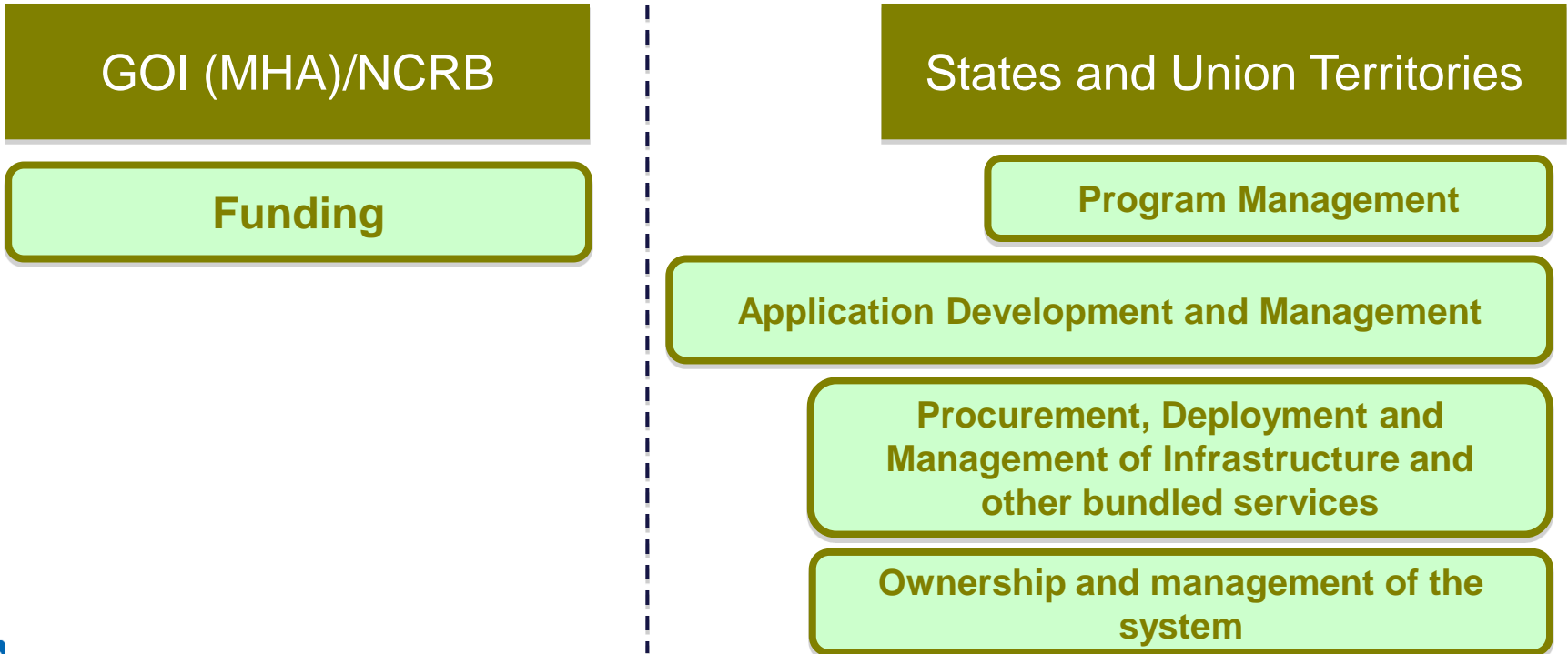
State CAS

- To be given to States for customization, extension and deployment
- Types of CAS Customizations at State level
 - State, District and Police Station information
 - Local Acts and Section information
 - Local community, castes and tribe information
 - Change in functional flow for Special and/or Local Laws e.g. additional screens required to capture extra information
 - Local language support
 - Interface with external agencies not included in Central CAS
- Types of Extensions to State CAS
 - Additional Modules such as HRMS, Finance, Stores & Inventory management, Law & Order, etc.
- Application to Go-Live at State level once it is ready for deployment

Implementation Framework

CCTNS Implementation Framework Overview

Planning: Centralized at GOI and State Levels Implementation: Decentralized



Overview of Implementation Strategy (1 of 3)

- Adopt holistic approach for introduction of ICT systems for police/ internal security
 - States & UTs will have a lead role in the implementation
 - Focus on Capacity Building and Business Process Re-engineering
 - Redesign the program on an OpEx Model as against a CapEx Model
 - Re-package the implementation on a Service Provision Model, as a ‘bundle’ of responsibilities to be entrusted on a turn-key basis
 - A product-based approach and plan the rollout only after the application software is certified for functionality, security, scalability & usability
- Enhanced functionality to offer ready and critical utility to police force
 - Core, common, critical functionality to be provided to States by GOI
 - States to customize and enhance the core according to their unique requirements

Overview of Implementation Strategy (2 of 3)

- States are the main owners of the project
 - States to be given the lead role in implementing the project
 - Centre only defines the Basic Core Architecture (core functionality), Standards and Protocols and creates the core
 - Implementation led by State Designated Agency/ Special Purpose Vehicles (SDA/ SPV)
- Adopt NeGP framework for implementation of such projects. Centralized planning and decentralized implementation.
- All services (with clearly defined SLAs) bundled to ensure easier SI/ Vendor and performance management and accountability to the States
- Phased implementation in introduction of various modules (to be implemented in 14 – 18 months)
- MHA to select a software development agency (SDA) to assist in the application development

Overview of Implementation Strategy (3 of 3)

- States to select & manage Single System Integrator (or two system Integrators) responsible for “**bundle of services**” comprising:
 - Application Software (customization and enhancement)
 - Networking
 - Hardware (supply and installation)
 - Digitization of legacy/ existing data
 - Consumables
 - Capacity Building
 - Handholding
- Roll-out on a turnkey basis at State/UT level
- Ensures vendors’ accountability to the states
- Payments to System Integrator (SI) linked to performance on staggered basis as per implementation milestones

Procurement, Deployment and Management of Infrastructure and rest of Bundled Services

- States would own and lead the activities of procurement, deployment and management of Infrastructure and other bundled services (listed in the following slide)
- States would procure the “Bundle of Services” through a single (or two) Systems Integrators (SI) that they would choose
- The choice of the SI would be on the basis of competitive bidding process in response to an RFP issued by the States
 - NCRB would assist the States by providing them with a model RFP that the States would suitably customize and float in the market
- The chosen SI(s) would be responsible for meeting the SLA (Service Level Agreements) pre-determined by the States and their payment would be linked to their performance

“Bundle of Services” to be Owned and Managed by States

- Capacity Building
- Application Development/ Deployment/ Enhancement/ Maintenance
- Handholding Support
- Digitization/ Data migration of existing information
- Monitoring and Coordination
- Advanced Applications
 - Automated Fingerprint Identification Systems (AFIS)
 - Computer Aided Dispatch (CAD) in Police Control Rooms
- Bundled Infrastructure
 - Computers and peripherals at the remaining Police Stations (approximately 11,000 locations)
 - Computers and peripherals at higher Offices – Districts, State HQ, GOI (approximately 6000 locations)
 - Mobile Computing facilities for Investigation officers
 - Data Centre Infrastructure (wherever possible State Data Centre to be used)
 - Networking infrastructure (wherever possible SWAN to be used)
- Project Management Consultancy/ Unit to assist in implementation

System Ownership and Management

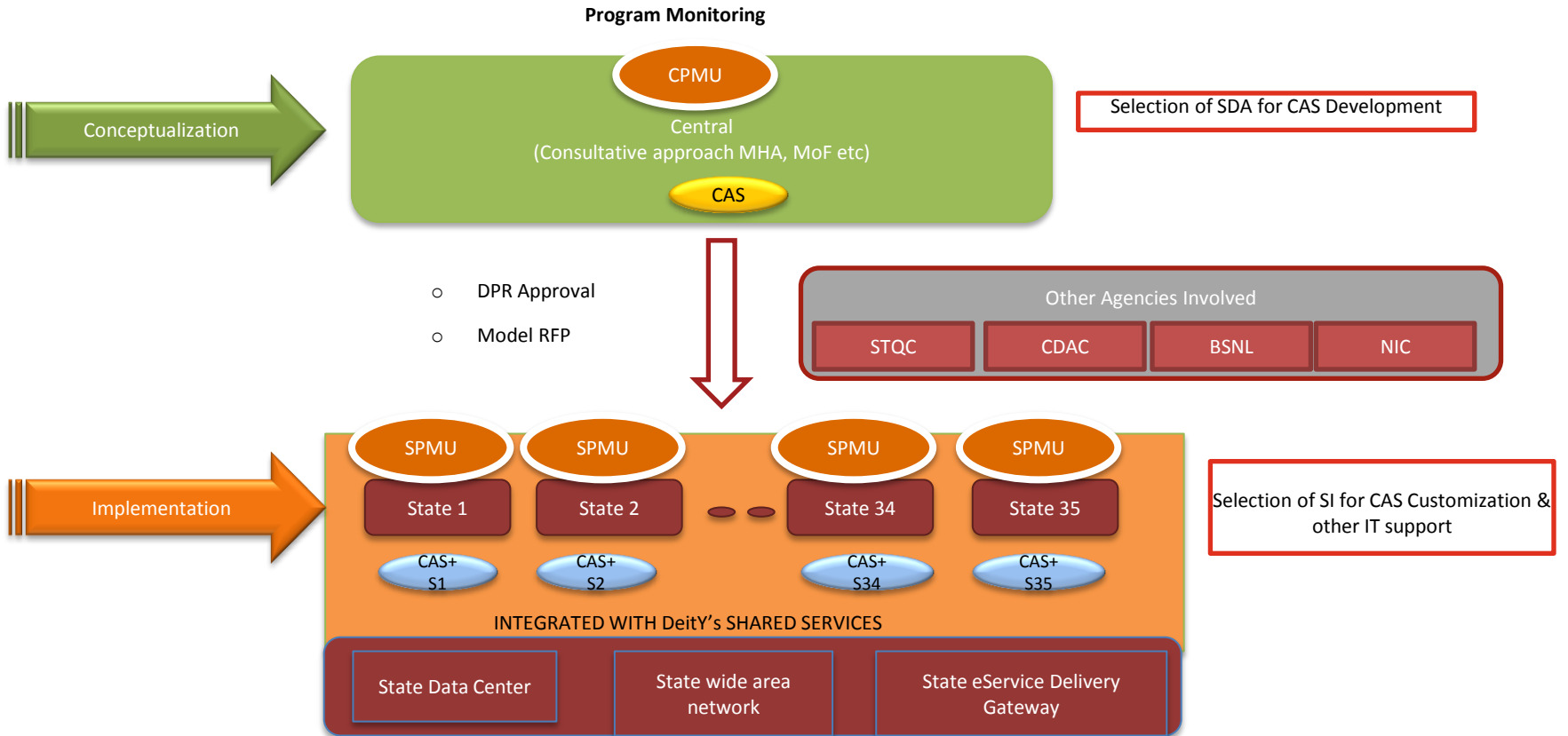
- The system ownership, post-deployment, lies entirely with the States and would cover the following:
 - Application enhancements, customizations and maintenance (except for the CAS that would be maintained by NCRB)
 - Infrastructure maintenance, replacement and expansion
 - Continued efforts into Capacity Building, Training, Change Management, etc.

Ongoing and Successful Initiatives from some States

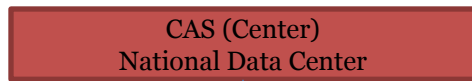
Ongoing and Successful Initiatives from States

- E-COPS in Andhra Pradesh
 - E-Cops running in all districts of AP spanning 1600 police stations
 - Developed with specific focus on police stations and investigation tools
 - Cases have been solved by access to vehicle information or crime information
- Police IT in Karnataka
 - Police IT application running in 100 police stations across 3 districts
 - Taken an enterprise view of the police department; includes enterprise functionality such as HRMS, Finance and Stores
- HD IITS in Gujarat
 - Gujarat has built an integrated application that includes police stations and several other departments under the Home Ministry

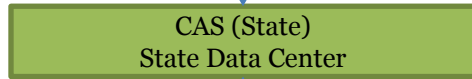
Implementation Approach



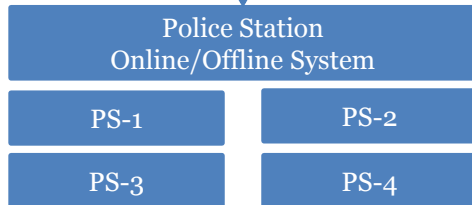
Implementation Approach



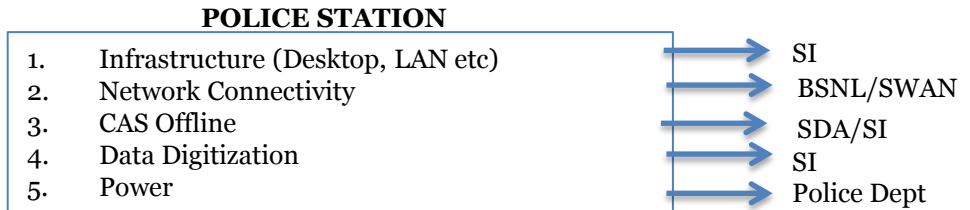
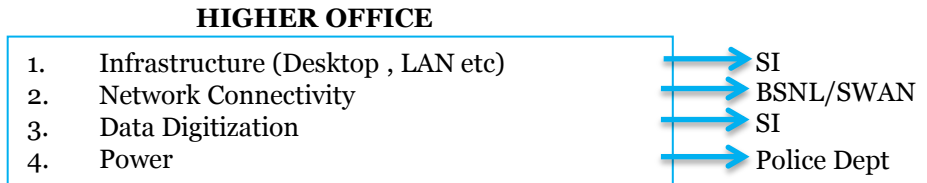
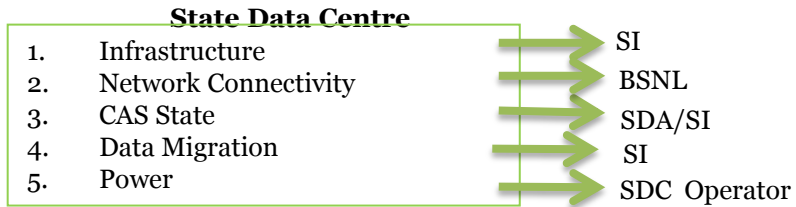
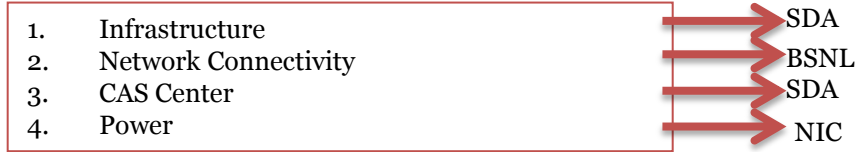
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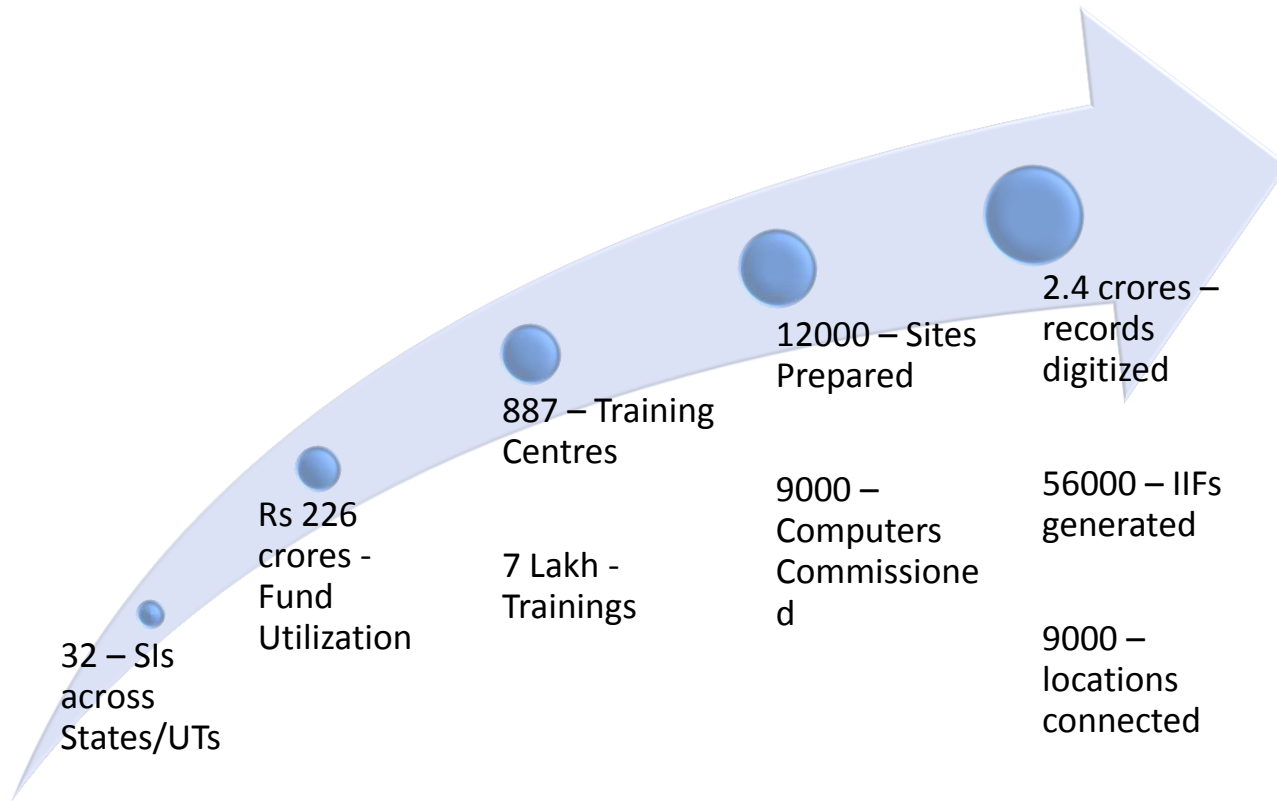
Higher Office



Project Milestones

Software Development Agency (M/s Wipro) on board	Jun 2010
Central Program Management Unit (M/S PwC) on board	Sep 2010
BSNL on board for network connectivity	Oct 2011
System Integrators Onboard	Starting Sep 2011
STQC on board for Third Party Certification	Dec 2011
CAS Release to All State/UTs for Study Purpose	Dec 2012
CAS Pilot Launch by Hon'ble Union Home Minister	Jan 2013
<i>Certified CAS Release to all States/UTs</i>	<i>Aug/Sep 2013</i>

Project Implementation Status



Key Challenges

Implementation

- Delay in hardware procurement by SIs
- Lack of coordination of SI - State, SPMU, BSNL
- Insufficient personnel – SI and SPMU
- Network connectivity problems
- Ageing CIPA sites and hardware

People

- Lack of sufficient police personnel for training/deployment
- Strong resistance due to lack of information/ sufficient training/ change management
- Lack of handholding staff or IT cadre

Key Challenges

Miscellaneous

- Network bandwidth issues
- Site preparation issues at CIPA Phase 1 locations
- Frequent change requests by SIs
- High dependence on SWAN and SDC
- Lack of connectivity with training units/ FSL/ FPB/ PCR
- Lack of Network Monitoring System
- Integration with advance States
- Integration of various wings of criminal justice system (Courts/ Jails)
- Integration with other MMPs

Some Best Practices

Change Management posters

Webinars for conducting training

Six Monthly training calendars

Mobile hardware verification teams

Project awareness through zonal crime meetings

Online assessment system for police personnel

Group mail ID for all officials

Domain related training of SI staff prior to deployment

Way Forward

- CAS certification by STQC by Aug/Sep 2013
- Release of certified CAS to States/UTs by Aug/Sep 2013
- Go-Live of CCTNS across all States/UTs by end of 2013
- Launch of Citizen Portals across all States/UTs by end of 2013
- Implementation of AFRs and Multilingual features in CAS by end of 2013
- Selection of vendors for implementation of Specialized solutions by end of 2013

Thank You

srinath.chakravarthy@nisg.org

Tel: 9885919305