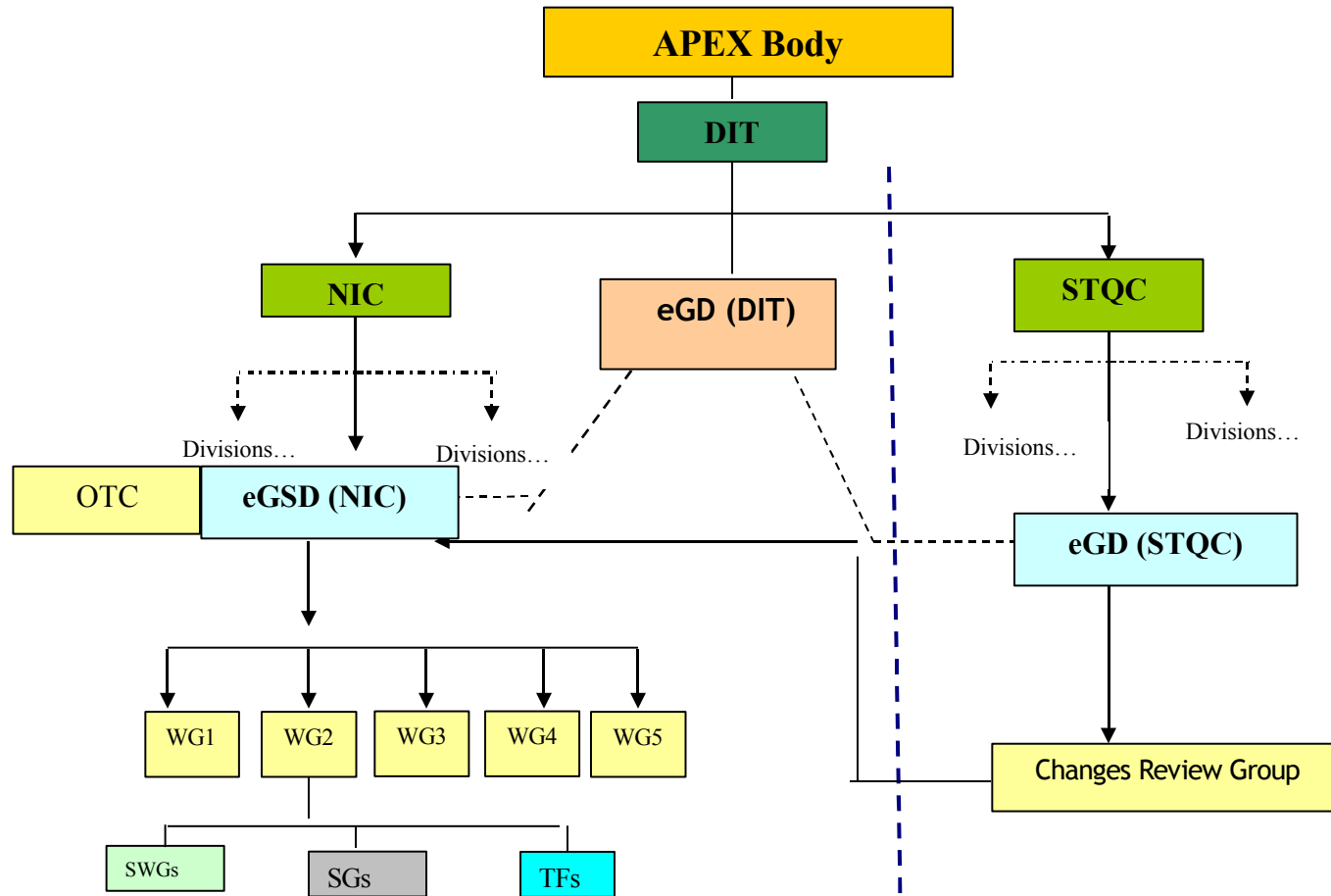


Standards, Interoperability & Challenges in e-Governance Architecture

Renu Budhiraja
Director
Department of Information Technology
Govt. of India

Standards Institutional Mechanism



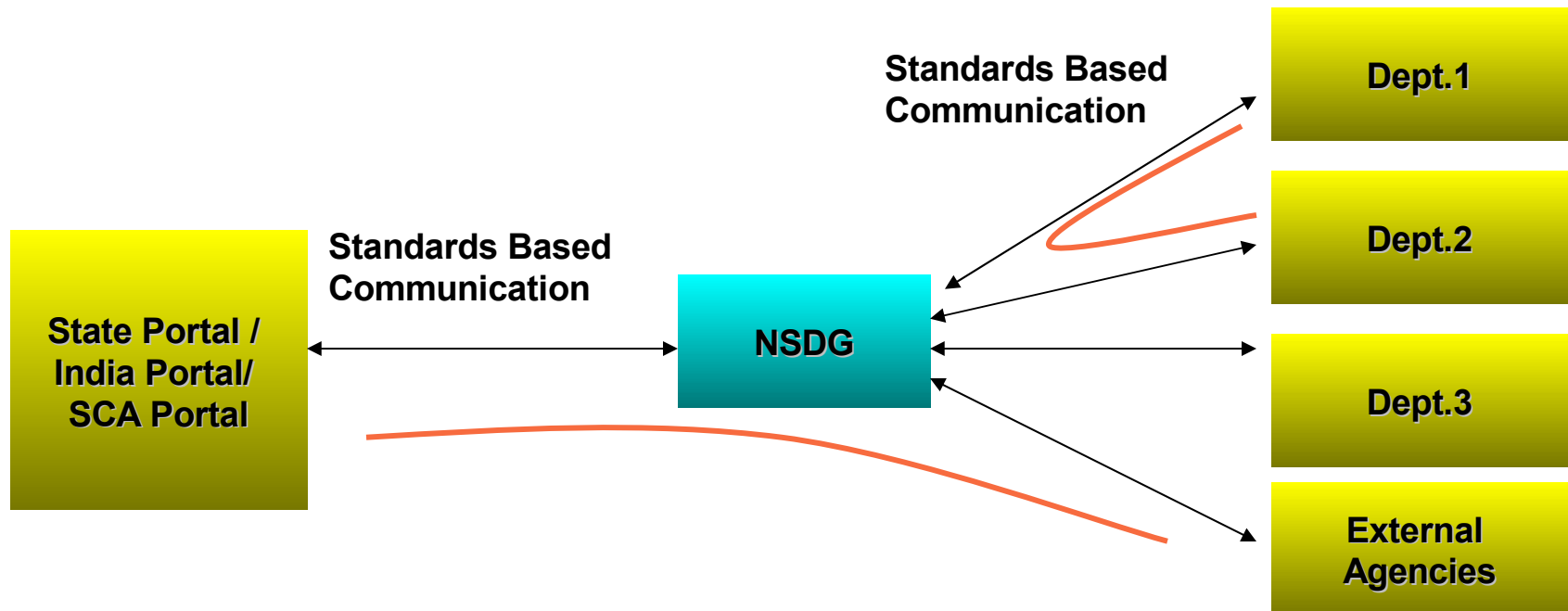
Members drawn from DIT, NIC, STQC, BIS, other relevant Government departments, subject experts from Industry, Academia, NGOs, State Governments representatives etc.

(Formulation of Standards)

(Qty, security, Release, Maintenance & Change Management of Standards, liaison with BIS, 3rd party certification)

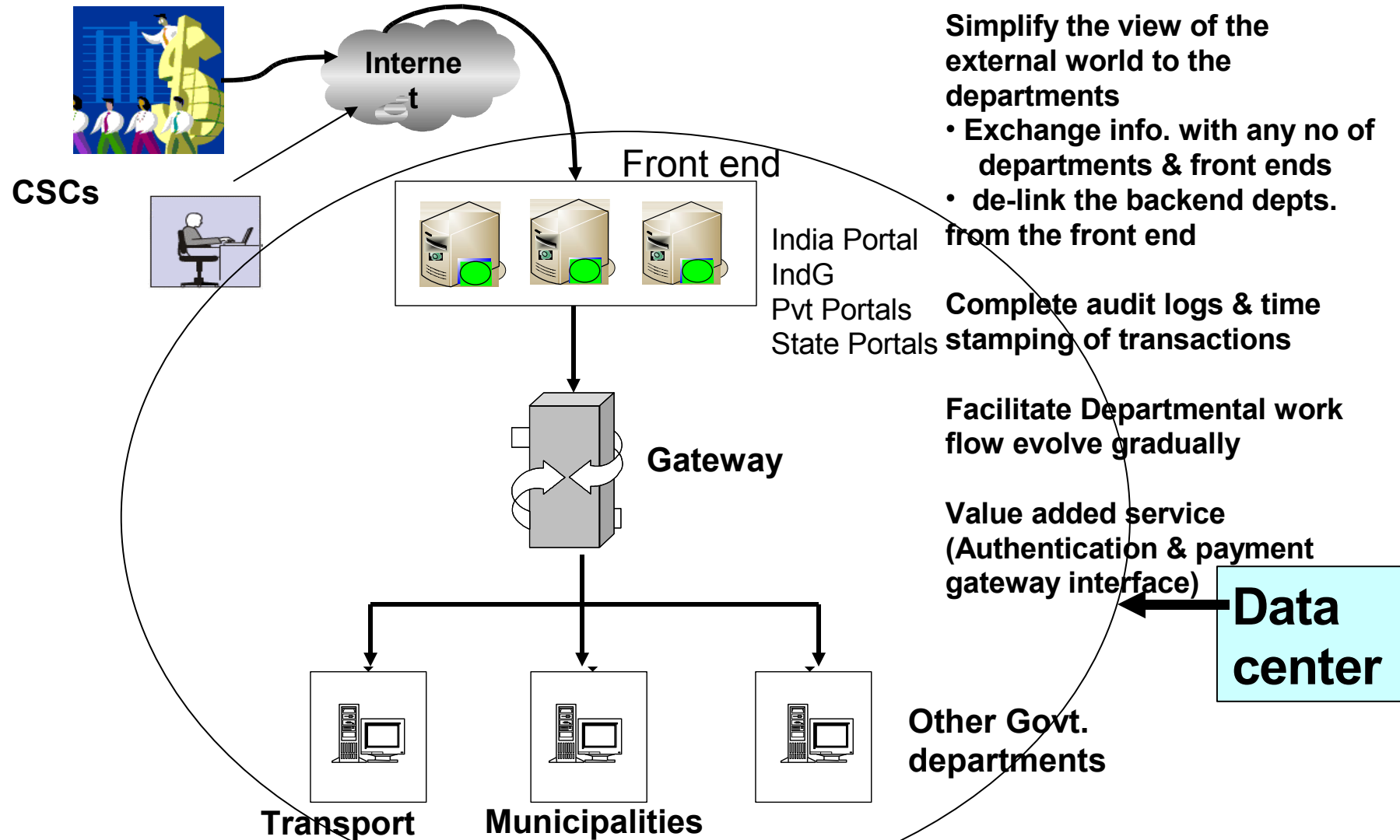
National e-Governance Service Delivery Gateway (NSDG) - MMP

messaging middleware for interoperability

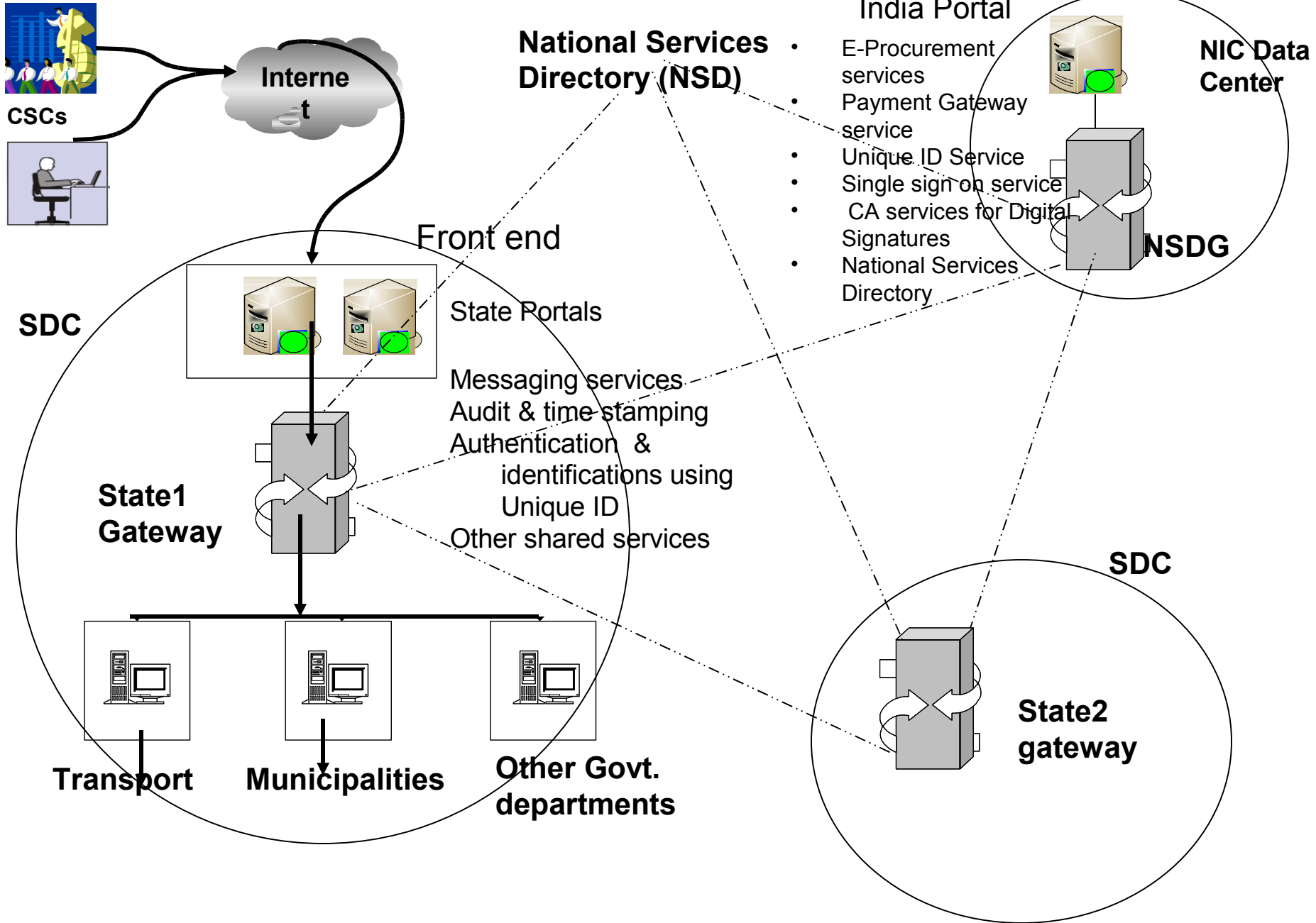


- Core standards based messaging & routing middleware
- based on XML and SOAP
- Promotes Service Oriented Architecture
- envisaged as a cluster at the National level & SDCs
- Core in the e-Governance application architecture
- Government Service Bus (GSB)

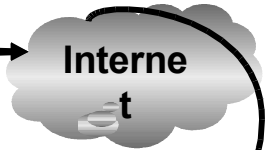
Positioning Gateway in Applications



Constellation of Gateways



CSCs



Internet

National Services Directory (NSD)

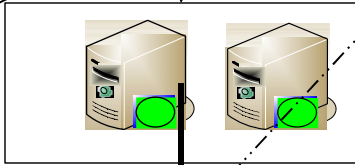
- E-Procurement services
- Payment Gateway service
- Unique ID Service
- Single sign on service
- CA services for Digital Signatures
- National Services Directory



NIC Data Center

Front end

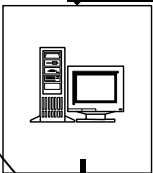
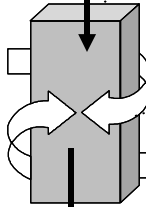
SDC



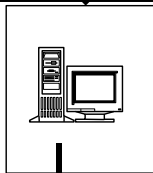
State Portals

Messaging services
Audit & time stamping
Authentication & identifications using Unique ID
Other shared services

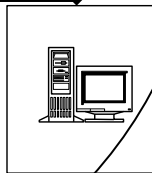
State1 Gateway



Transport

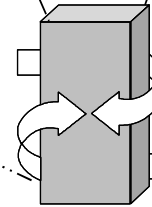


Municipalities



Other Govt. departments

SDC



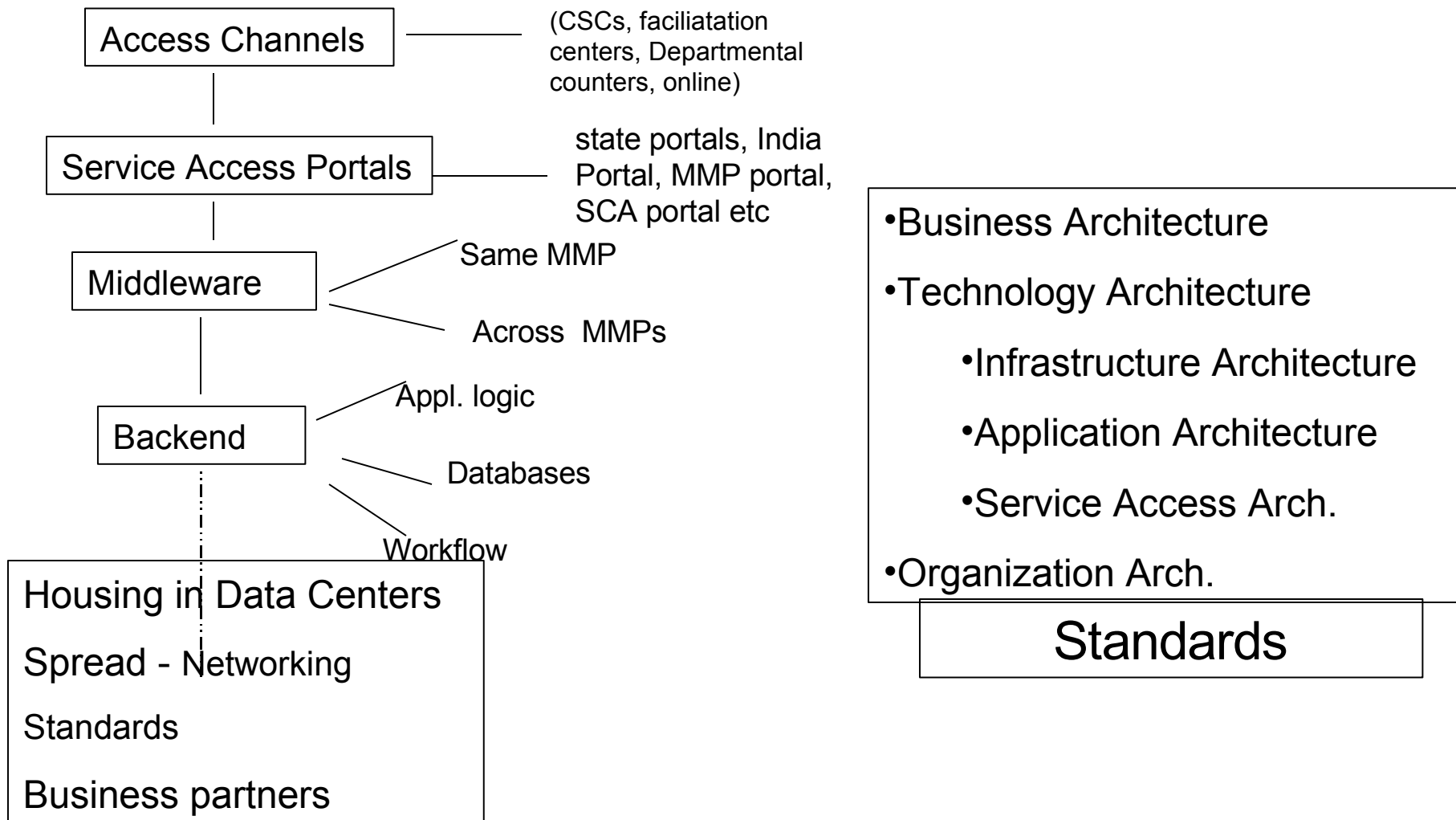
State2 gateway

NSDG

Challenges in e-Governance Architecture

- National E-Governance Plan Strategy
 - Centralized initiative decentralized implementation
 - Core common Policies, guidelines, standards, framework, infrastructure (federated architecture)
 - A lot happening in this direction (standards, guidelines, SWAN, CSCs, SDCs etc)
 - Challenges in implementation of various architectural components

E-Governance architectural components



Business Architecture challenges

- Identifying commonalities across states/ depts. to devise re-usable Services, processes, forms etc
 - Multiple Players
 - Applying Enterprise Architecture (awareness, governance)
 - Single Core software?
- Business Models (service based)
 - Multi-sourcing, single-sourcing
- Data & Application security and ownership
 - Policies, guidelines, controls need to be in place
- Service Level Agreements
 - Internal & External (Passport)
 - Dependency on other MMPs
- Exit Management
- Synchronization & clear strategy for core component induction

Technology Architecture challenges

- Platform independent, scalable, Open Standards - Policy
- Network & System Architecture
 - Centralized/ Decentralized / hybrid
 - Connectivity, transaction volumes
 - varying timelines - interim solutions, a clear migration path to a future centralized strategy
- Legacy applications / Backend maturity / location of existing databases
- Service Access Architecture
 - Multiple delivery channels (MMP portals, State portals, India portal, SCA portal etc)
 - Single sign-on
- Localization/ multi-language support
- Digitization of old records
 - Scanning, error removal, validation
 - Bulk signing
- Digital Signature Management

Organization Architecture challenges

- In-house departmental resources
 - Arch team
 - Tech team to control appl. & Data
 - Contractual skills
 - PM skills
- Quality in e-Gov
 - within departments
 - Defining and implementing CMM like processes (BIS 15700 – service delivery)
 - within MMPs
 - Quality assurance framework
 - 3rd party certification

Recommendation

- Define Standardization of
 - Data, process, Services and Technology right at the RFP stage
- Incorporate 3rd party testing, compliance & Certification requirements throughout the project duration
- Build strong Exit Plan
- Build applications with Gateway as the middleware
- Program/ Project management/monitoring
- Enterprise Architecture (EA), SOA
- In-house Capacity Building in departments
- Centralized conceptualization of the MMPs, Implementation guidelines, RFP templates, Appraisals, monitoring

Thank You
Thank You

Gateway Benefits

- Standards based messaging and routing switch
 - ensuring secure and guaranteed delivery of services between the front end portals and the back end departments and between departments
- Simplify the view of the external world to the departments
 - It will de-link the backend departments from the front end service delivery mechanisms like CSCs.
 - A department will connect only once to the Gateway and transact with multiple CSCs.
- Complete audit logs & time stamping of transactions
- Facilitate Departmental work flow evolve gradually
 - a server may be put up at the department for message exchange with Gateway in absence of readily available infrastructure at the department.
- Gateway has the capability to add additional functionality to support shared common services like Authentication, payment gateway interface, etc

National eGovernance Service Delivery Gateway (NSDG) system- Messaging Middleware

- The Gateway is a
 - Core standards based messaging & routing middleware
 - based on XML and SOAP
 - envisaged as a cluster at the National level & SDCs
 - has the intelligence to route each request coming from the CSCs or any other Front ends to the respective departmental Server offering the service
 - The response from the departmental servers will be returned back to the SCA portal or the State Portal via the Gateway.
- As a part of this project, a National Service Directory (NSD) to resolve the address and service resolution between the Gateways is also being set up