



# Convergence Framework – A service oriented approach

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- Agenda approval
- Convergence WG objective
- SOA-based convergence framework
- Contributors' presentation
  - ⊕ Basavaraj Hooli
  - ⊕ Anand Prasad
  - ⊕ Jaydip Sen
- Mapping of areas of work to SON framework
- Related efforts in other SDOs
- Deliverables for December

# Contributors so far ...



- Parag Pruthi (NIKSUN) - Chair
- Ashutosh Dutta (NIKSUN) – Vice Chair
- Basavaraj Hooli (Mphasis)
- Anand Prasad (NEC)
- Munir Sayyad (Reliance)
- Jaydip Sen (TCS )

# Network Generations

# User Experience



# Evolution of Web-based services



## Web N.0 Evolution Model

Generation	Web 1.0	Web 2.0	Web N.0
Goals	<ul style="list-style-type: none"> <li>Online information</li> <li>Commerce</li> </ul>	<ul style="list-style-type: none"> <li>Personal voice</li> <li>Community</li> </ul>	<ul style="list-style-type: none"> <li>Virtual world</li> <li>Disruptive business models</li> </ul>
Emergent Phenomena	<ul style="list-style-type: none"> <li>Banner/pop-up ads</li> <li>Instant messaging</li> <li>VoIP</li> <li>Web Search</li> </ul>	<ul style="list-style-type: none"> <li>Long tail</li> <li>Wisdom of the crowds</li> <li>User-generated content</li> <li>Location services</li> </ul>	<ul style="list-style-type: none"> <li>Proactive services</li> <li>Digital personas</li> <li>Service/Content/Network</li> </ul>
Technology	<ul style="list-style-type: none"> <li>HTTP/HTML</li> <li>Web Browser</li> <li>E-mail</li> <li>CRM</li> <li>Online platforms</li> </ul>	<ul style="list-style-type: none"> <li>Blogs</li> <li>RSS</li> <li>P2P</li> <li>Social networking</li> <li>Content portals</li> <li>AJAX/XML</li> </ul>	<ul style="list-style-type: none"> <li>All IP communications</li> <li>Event fusion</li> <li>Multi-modal interfaces</li> <li>Artificial Intelligence</li> <li><b><u>Proactive context-aware services</u></b></li> </ul>

- Emergence of a new group of services are different from traditional Telco
  - ⊕ Traditional forms of communication are being displaced with message-based interactions around social community
  - ⊕ Technologies, development practices and business models are markedly different between Web 2.0 and IMS
- Business model based on supporting Web 2.0 application over an IMS platform can benefit
  - ⊕ end-users, service providers, and third party application developers
- Convergence among Web 2.0, service oriented architecture and IMS call control features
  - ⊕ Web 2.0 provides interactivity, ubiquity, social orientation and user participation
  - ⊕ IMS provides a platform to complete service features with multimedia telephony, media sharing using call control features and support for security, user authentication, quality of service

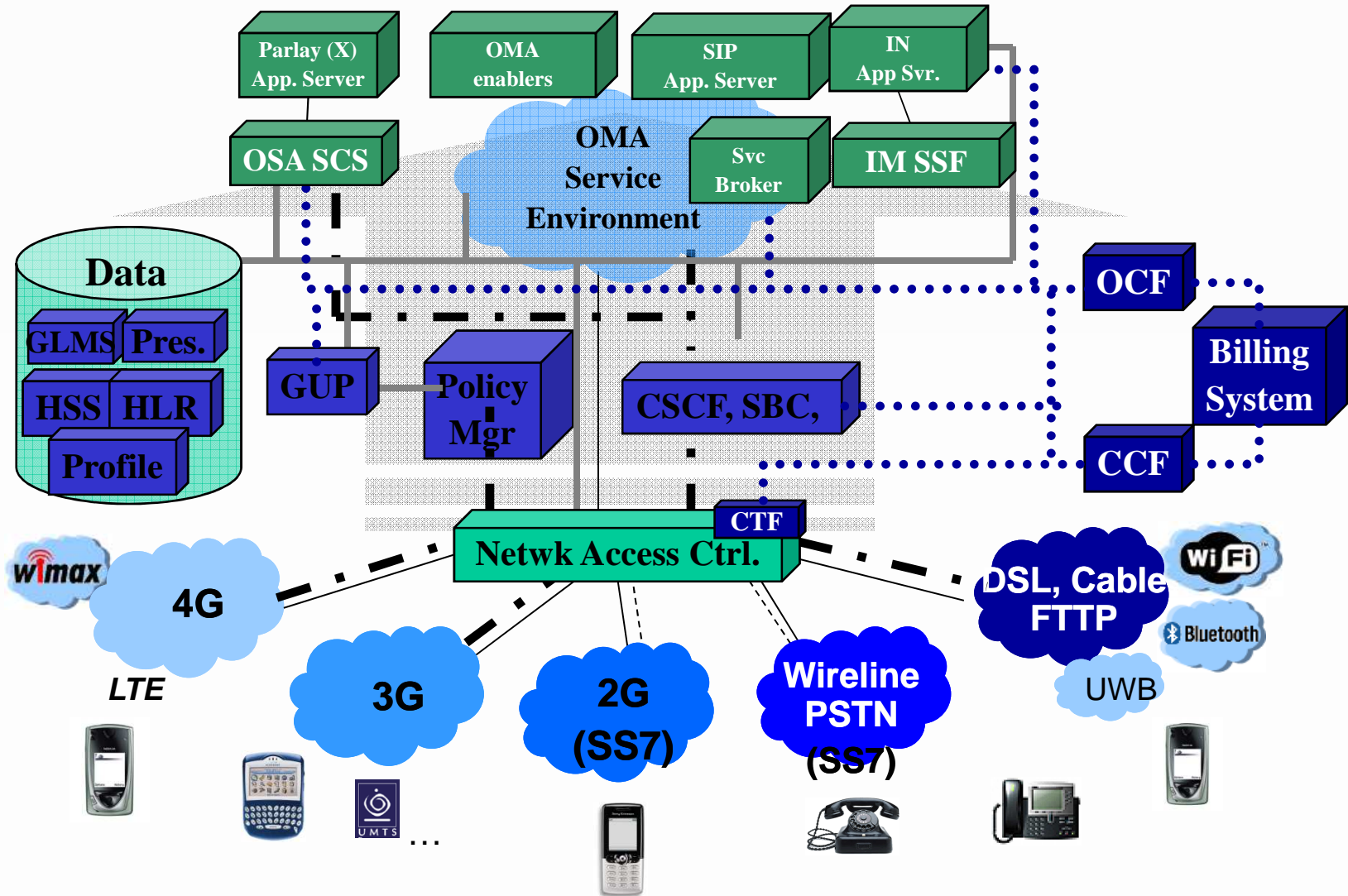
- **User experience matters**
  - ⊕ Content and collaboration service components enrich user experience on the top of communications and sessions services
- **Service deployment and operation is critical to establish new business models**
  - ⊕ Interoperable service enablers bring strong deployment and operation properties in order to guarantee QoE across domains
  - ⊕ IMS brings interoperable roaming, authenticated multimedia calls, subscriber, network and device authentication
- **SOA principles to ensure strong S/W principles lead to maximized quality/cost**
  - ⊕ SDP/SoA brings open networks to web 2.0 enabling flexible reuse of service capabilities

# Convergence WG objective

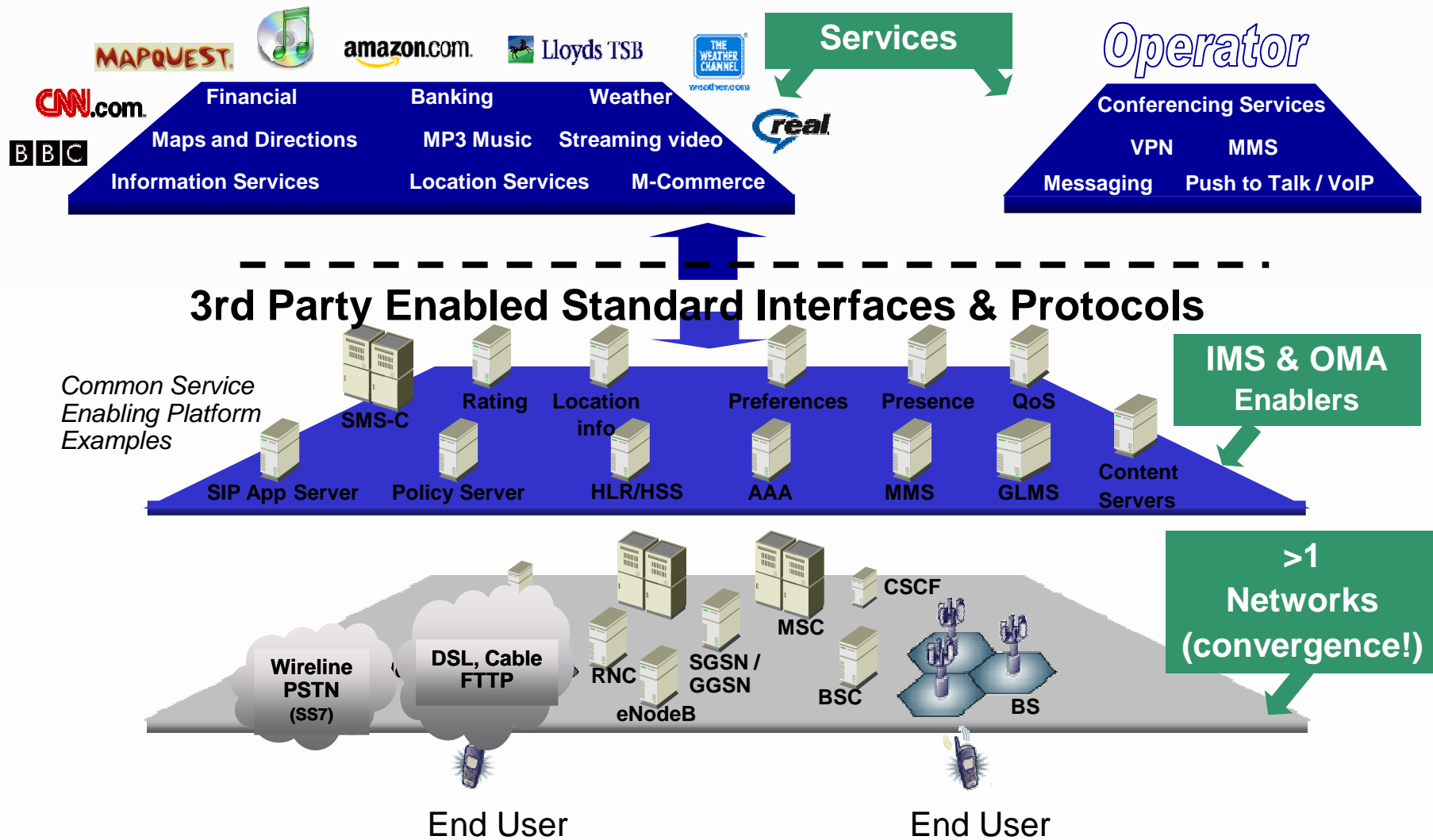


- Development of a high level framework for SON that will address
  - ⊕ How the service providers can implement the concept of SoA, Web 2.0 and IMS into their services
  - ⊕ Consistent with the unique Indian regulatory, business and infrastructure
  - ⊕ Urban and Rural India requirements
- Categorized into Seven Major groups
  - ⊕ General
  - ⊕ Government of India
  - ⊕ Rural India
  - ⊕ End user applications
  - ⊕ Network service enablers
  - ⊕ Underlying Network/Support capabilities
  - ⊕ Business model driven

# The IMS Vision



# SOA-based convergence framework



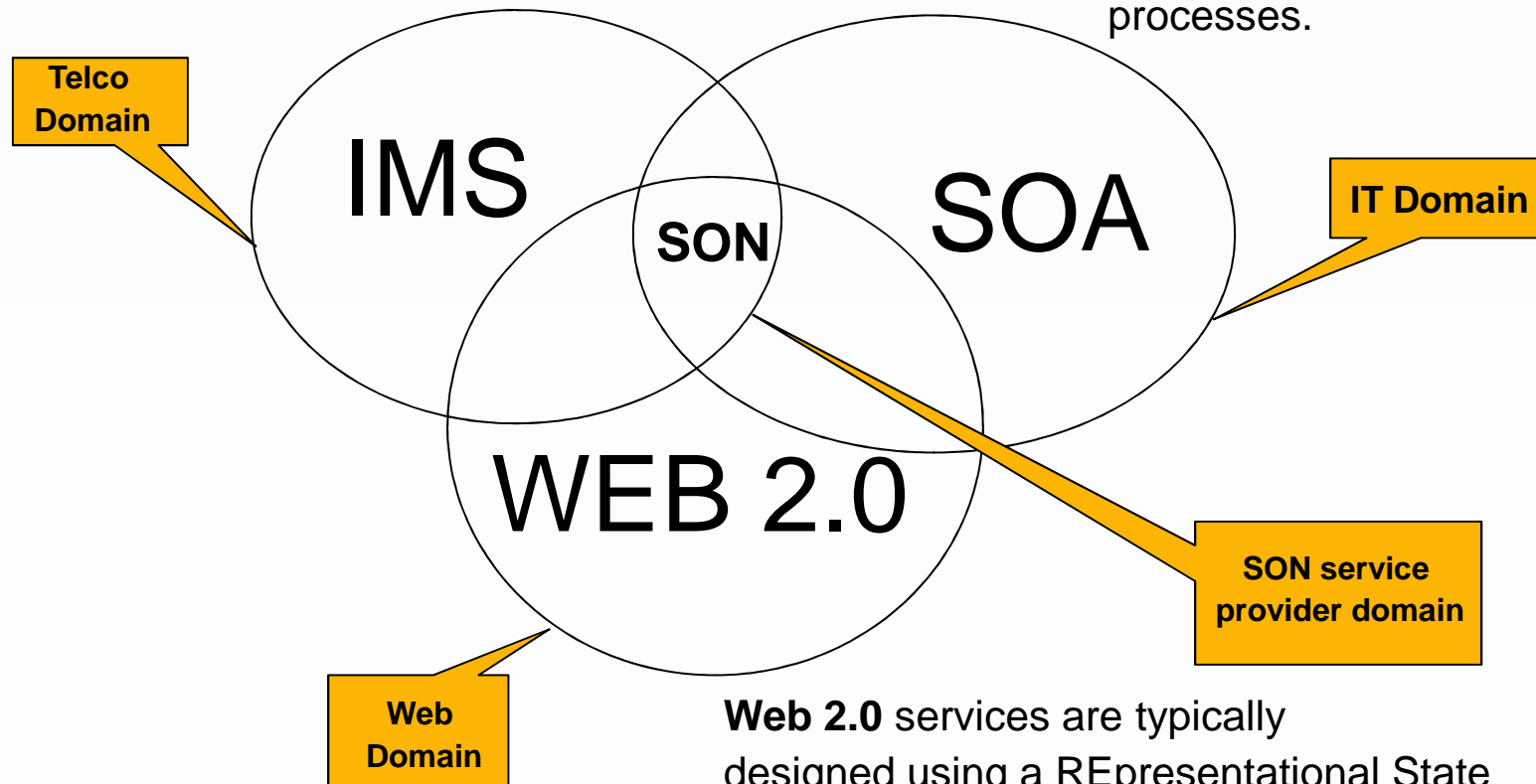
- Learn from the existing standard bodies and map into Indian environment
  - ⊕ 3GPP
  - ⊕ ETSI -
  - ⊕ OMA – Open Mobile Alliance
  - ⊕ IETF – Internet Engineering Task Force
  - ⊕ FMC – Fixed Mobile Convergence
  - ⊕ ATIS - SON
  - ⊕ IEEE NGSON
  - ⊕ ITU-T
- Take feedback to above standards bodies

# Integration of IMS, SOA and WEB 2.0



**IMS:** Designed and developed through 3 GPP to provide telecom service over IP networks

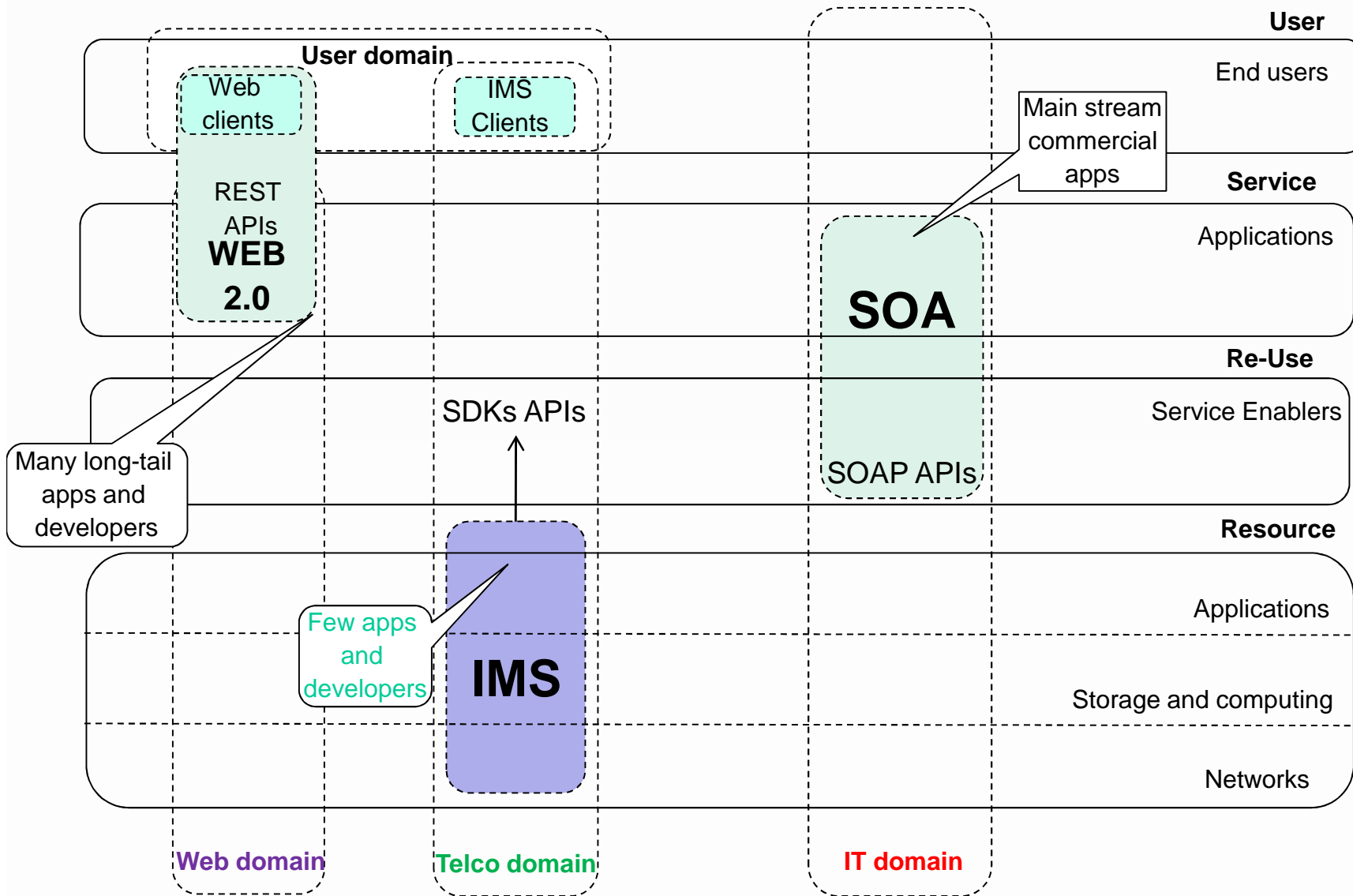
**SOA:** utilizes loosely-coupled service data exchange to implement business processes.



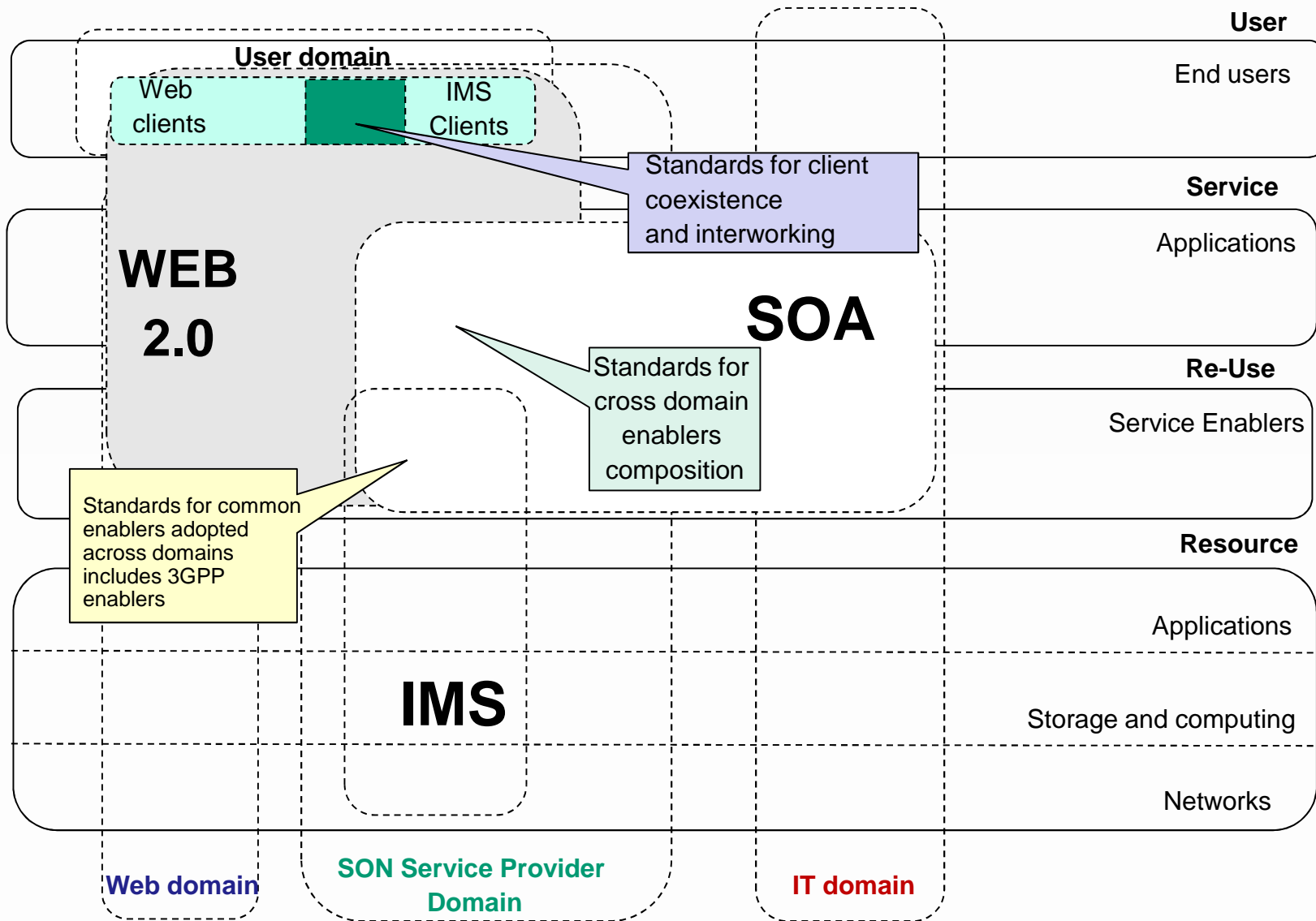
**Web 2.0** services are typically designed using a REpresentational State Transfer (REST) programming model principle, SOAP and XML for access to data and functions

	<b>IMS</b>	<b>SOA</b>	<b>Web 2.0</b>	<b>SON</b>
<b>Design Principles</b>	Service Experience	Application Experience	User Experience	All three are needed
	Vertical domain integration	Horizontal Framework	User experience Mash-up	Service enabled across domains
<b>Service Experience focus</b>	Robust Connectivity	Programming reuse	Service Creation	SON speeds up the creation of services with network robustness
<b>Illustrative Service Delivery</b>	Telco grade QoS, real-time	IT grade scalability	Web grade (beta)	Cross domain support
<b>Business Models</b>	Direct subscriber relationship	Application Third party relationship	Indirect models No support	Evolving
<b>Trust model</b>	Built-in security model	Leverages IT security model	Fragmented model	Challenges for Authentication , privacy and profiles
<b>SCE/SDP</b>	Intra-domain AS. Internal SDP	Services built horizontally from SW Reuse	Services built top Down from the user	SON must foster reuse and user experience driven Service creation

# Different Standardization domains



# SOA-IMS-Web 2.0 Integration



# Possible Areas of work

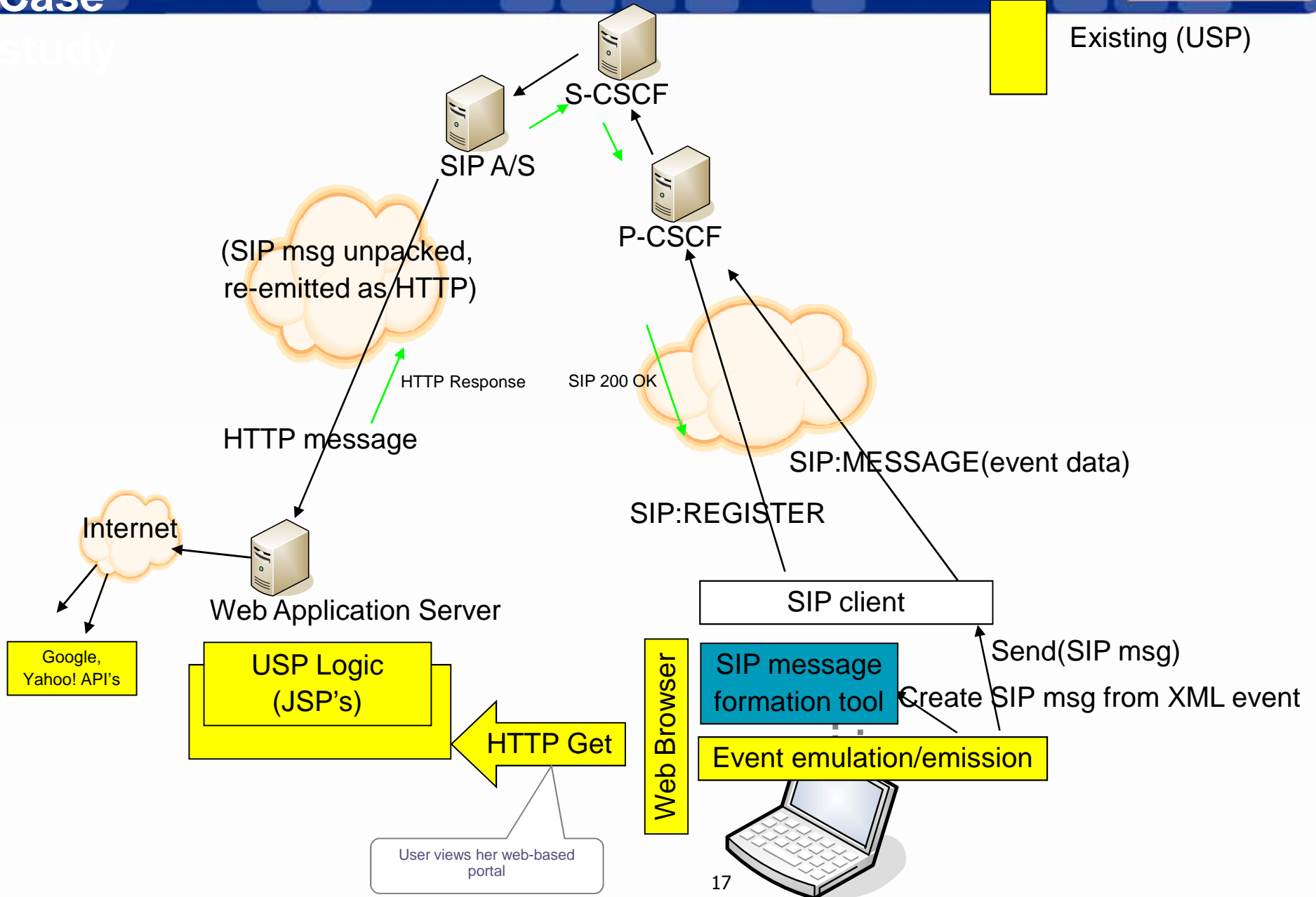


- Investigate New business models for SON
- Control and configuration management
  - ⊕ Context aware and self organizing network
  - ⊕ Pervasive Network Architecture
- Telecom Network Virtualization
- Service Creation Environment
  - ⊕ Third party service enablers
  - ⊕ Information migration
- End-to-end QoS provisioning
- Seamless mobility
- End-to-end Security
- Green Telecom (SoN)
- Co-existence with legacy applications

# Integration of WEB 2.0 application in IMS: a Case study



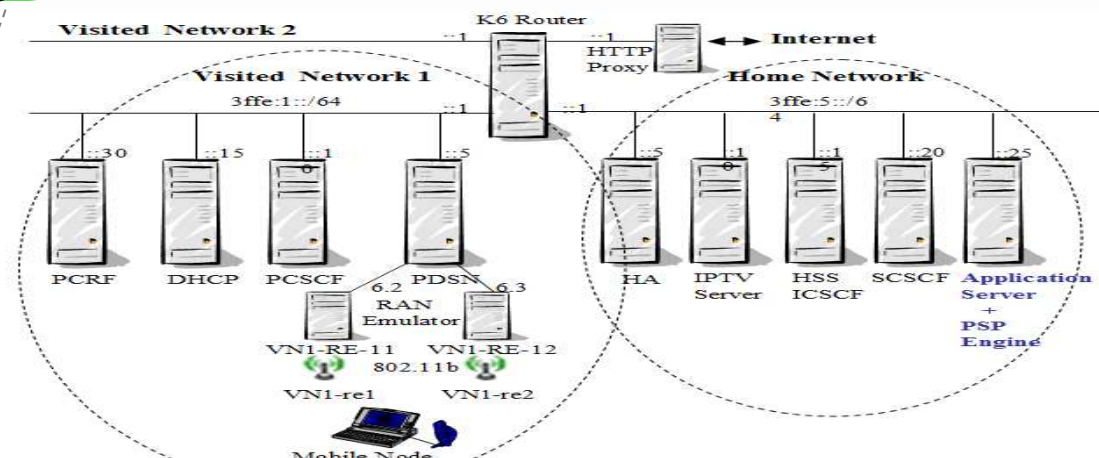
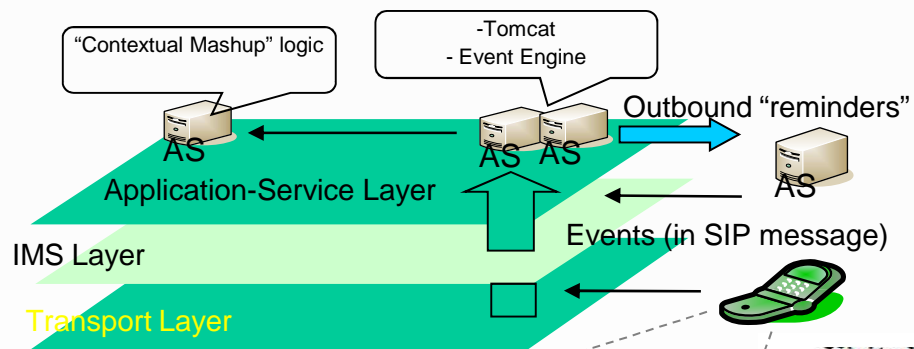
Existing (USP)



# Web 2.0 Applications over IMS – Case study

Mobile user and other applications push and pull “context” towards the Application Server (AS). “Context” is embedded in SIP messages. Context might be GPS coords, new scheduled events or new directives.

Mashup logic continually updates users information layer, providing “notifications” of calendar, task and other information deadlines.



Web 2.0 has been an abrupt and disruptive change to online activity. IMS, converged services, and Web 2.0 style information represent new revenue streams for operators and further differentiates Them from “dumb pipe” providers.

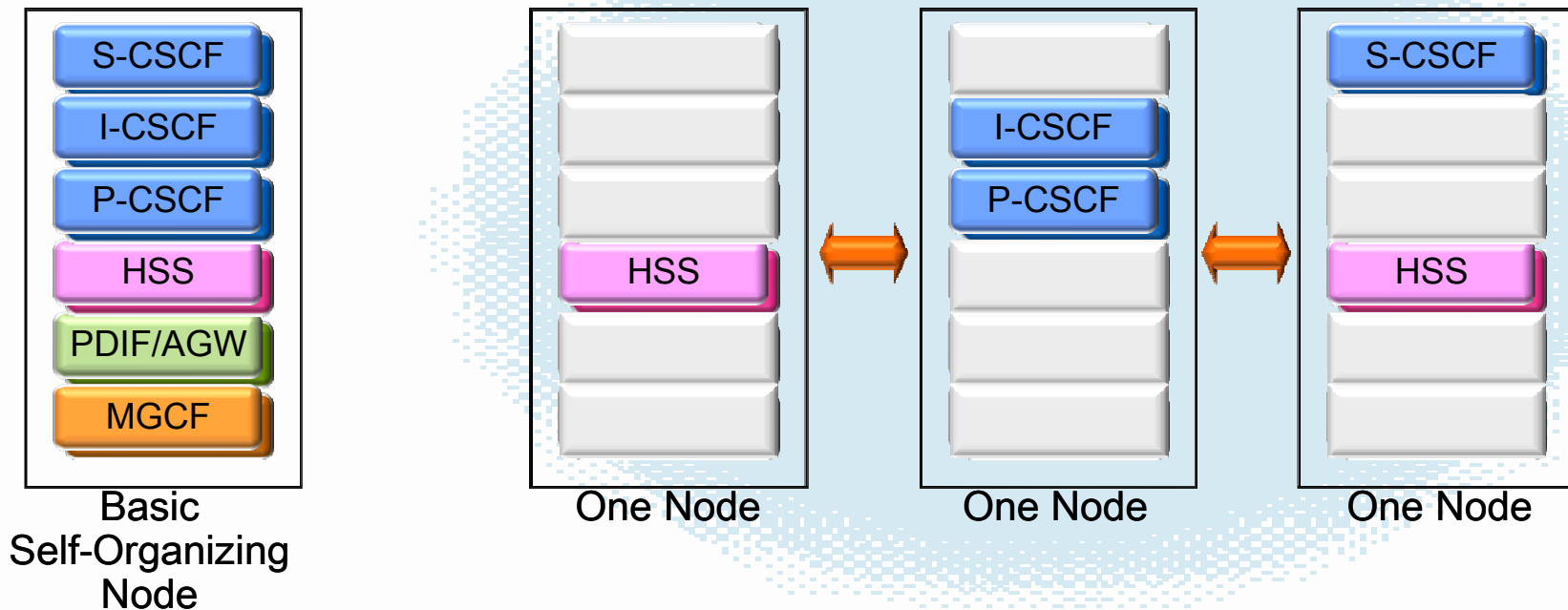
# Self Organizing Network



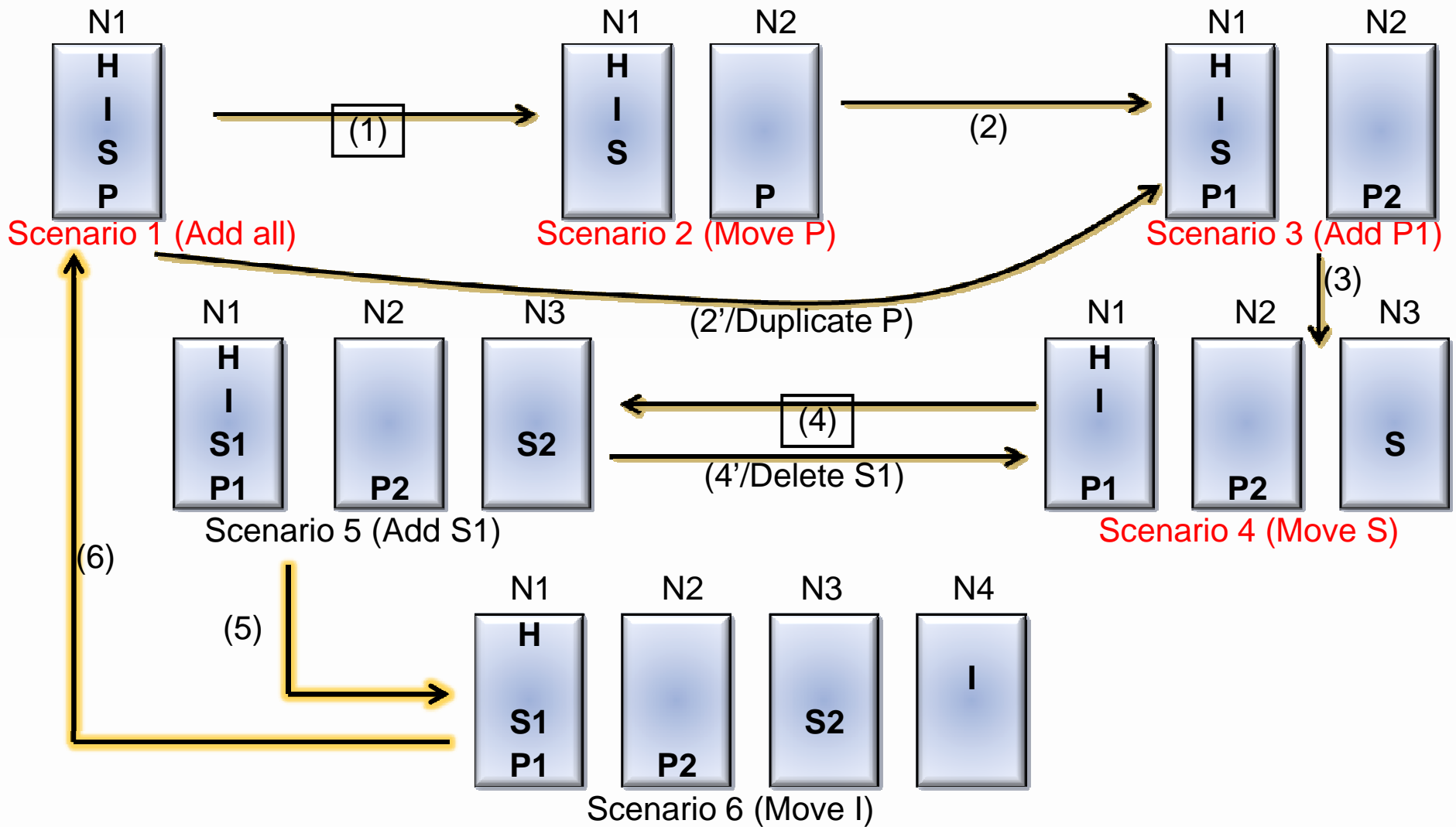
## Self Organization of IMS

- Goals of Self Organization of IMS
  - ⊕ Efficient Redundancy
  - ⊕ Easy Planning of facilities, Easy Configuration
- How to realize
  - ⊕ Each Node recognizes required roles automatically
    - ⊕ ex. P/I/S-CSCF, HSS, AAA, MGCF, PDIF/AGW
  - ⊕ Each Node changes its roles dynamically as needed

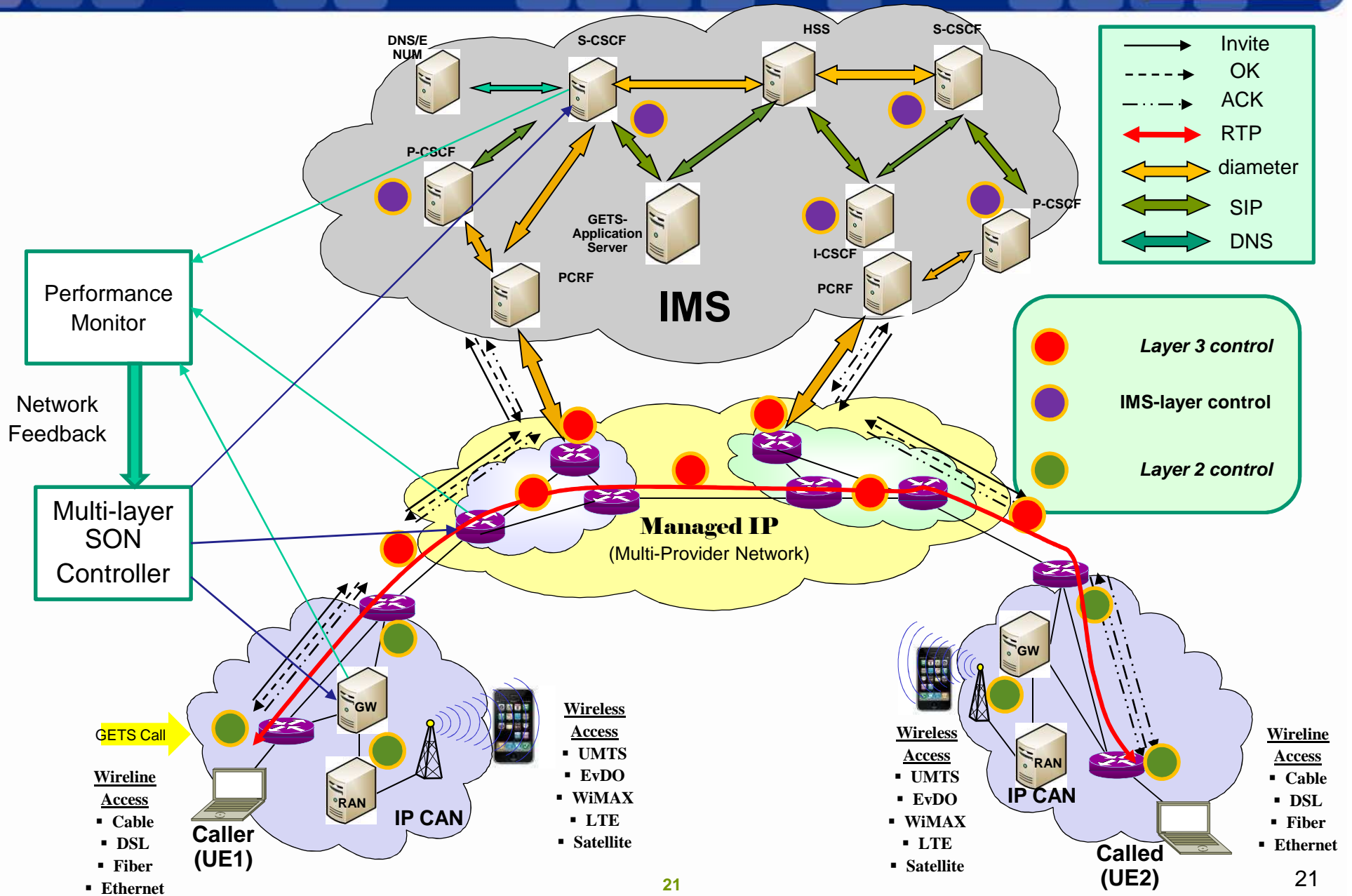
Automatically and Dynamically



# Self-Organizing IMS Scenarios Transition



# Feedback-based (SON)



- Think beyond the operators
  - ⊕ New service providers
  - ⊕ Do not depend upon service provider always
- How to provide equivalent security without depending upon carrier
- Focus on rural India
  - ⊕ What is important (security or QoS?)
- Expand business models/architectures
- Can this convergence framework be used for IOT?

# Goals for December Meeting



What * priority	Who ** Primary	When
* Expand the current framework document to add new use cases	NIKSUN** VNL TCS	December
Information migration	MPHASIS	December
* Business models and architecture	MPHASIS NIKSUN** VNL TCS NEC	December
Context aware Network (Self organizing) (R&D)	NIKSUN* TCSB MPHASIS .....	Ongoing
* Security	NEC VNL TCS*	December
Gap analysis with other SDO (ATIS)	Ericsson* NIKSUN	December

# New name for Convergence Group?



SON (Service Oriented Network)

\* SeON (Service Oriented Network) - Accepted  
as the new WG name

GISFI SON (GSON)

SONG (SON from GISFI)

\* SANGAM - Possible architecture name

Convergence for SON (CSON)

Service Oriented Converged Networks

Service Convergence (SeCON)

- Gap analysis with the existing work from other SDOs is helpful to focus the work
- Feedback from Indian carriers will help GISFI
  - ⊕ We should try to bring carriers on board
- Early version of proof-of-concept should continue in parallel as part of R&D effort
- GISFI Liaison with other SDOs