



ITU-D Regional Development Forums 2010 on NGN and  
Broadband for the Arab Region  
"NGN and Broadband, Opportunities and Challenges"

Cairo, Egypt, 13-15 December 2010



# Principles for the Management of NGN

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NGN

- Next Generation Networks are essentially about delivering new services that are available at any place, any time, and on any device, through any customer-chosen access mechanism.
- Network transformation
- Deployment of NGN will require new management principles and change in operator's network management procedure.



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## TRANSFORMING BUSINESS PROCESSES, SYSTEMS AND ORGANIZATION

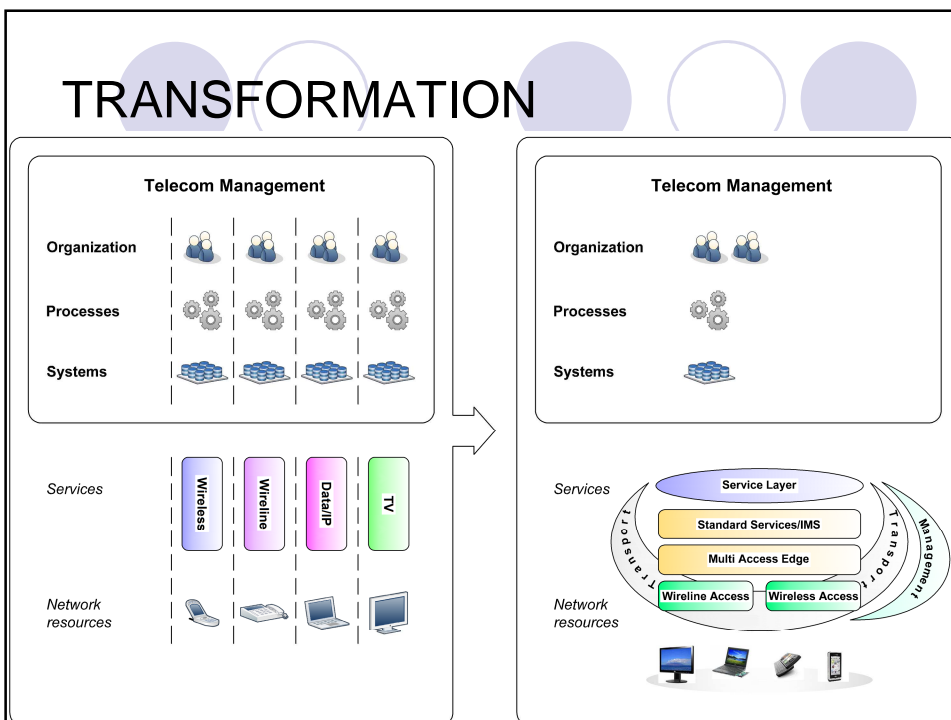
- It is clear that any **network transformation** should be matched with a corresponding **telecom-management transformation**.
- **What should be removed?:**
  - “stovepipe” solutions – dedicated to network technologies such as wireline, wireless and data/IP
- **What should be required?**
  - Implementation of business-driven framework that links business functions with a set of common work processes and systems transforming current business processes, systems and organization
- Many operators find themselves far from achieving these goals



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## TRANSFORMATION



## NETWORK TRANSFORMATION AND MANAGEMENT

- The key challenge of telecom management is to support network transformation, specifically to the new set of services that Next-Generation Networks will permit.



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## EACH OPERATOR/SERVIS PROVIDER IS DIFFERENT

**Deciding what to transform will depend largely on where the operator is in the value chain and what is its own specific business model**

### ITU-T RECOMMENDATIONS

**ITU-T Recommendation M.3060/Y.2401**



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## The ITU-T Recommendation M.3060/Y.2401

- Recommendation presents the management requirements, general principles and architectural requirements for managing Next Generation Networks (NGN) to support business processes to plan, provision, install, maintain, operate and administer NGN resources and services
- On the basis of TMN concept, this Rec defines concepts of the Next Generation Networks Management (NGNM) architecture, i.e., its business process view, functional view, information view, and physical view.



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## The objectives of management

- To provide a set of principles and a framework for managing next generation networks.
- This requires agreement amongst suppliers and operators on the organization of processes amongst them that may be operated by people, Operation Systems (OSs) or other Information and Communications Technology (ICT) systems



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# The management architecture

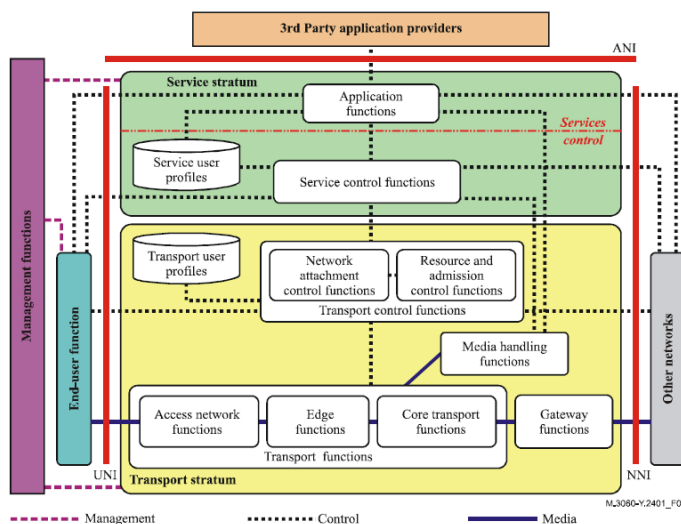
- The management architecture needs to address:
  - Administrative boundaries amongst operator domain
  - Processes amongst operators across these domain boundaries;
  - Processes between Operators and their suppliers' equipments;
  - Provider and Consumer Reference points between the logical functions used to realize those processes;
  - Provider and Consumer Interfaces between the physical entities used to realize the provider and consumer reference points;
  - Information model concepts used to support logical functions.
- The ITU-T has categorized management into five broad management functional areas (ITU-T Rec. M.3400)
- The business processes in the ITU-T Rec. M.3050.x series



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# Functional architecture for NGN



NOTE – Charging and billing functions and management functions are applied to both Service and Transport strata.

Figure 1/M.3060/Y.2401 – NGN architecture overview

## NGN management architecture overview

- Four views:
  - Business Process View;
  - Management Functional View;
  - Management Information View;
  - Management Physical View



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## The workflow in the creation of management specifications

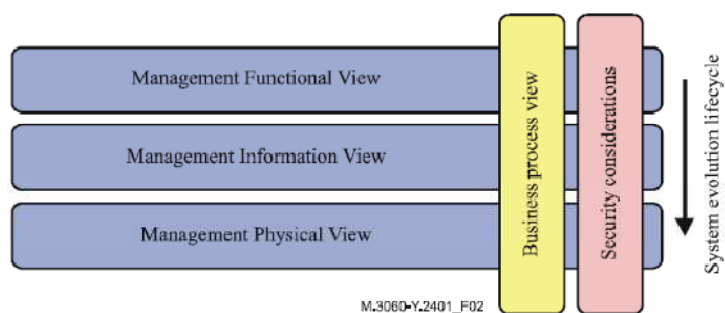
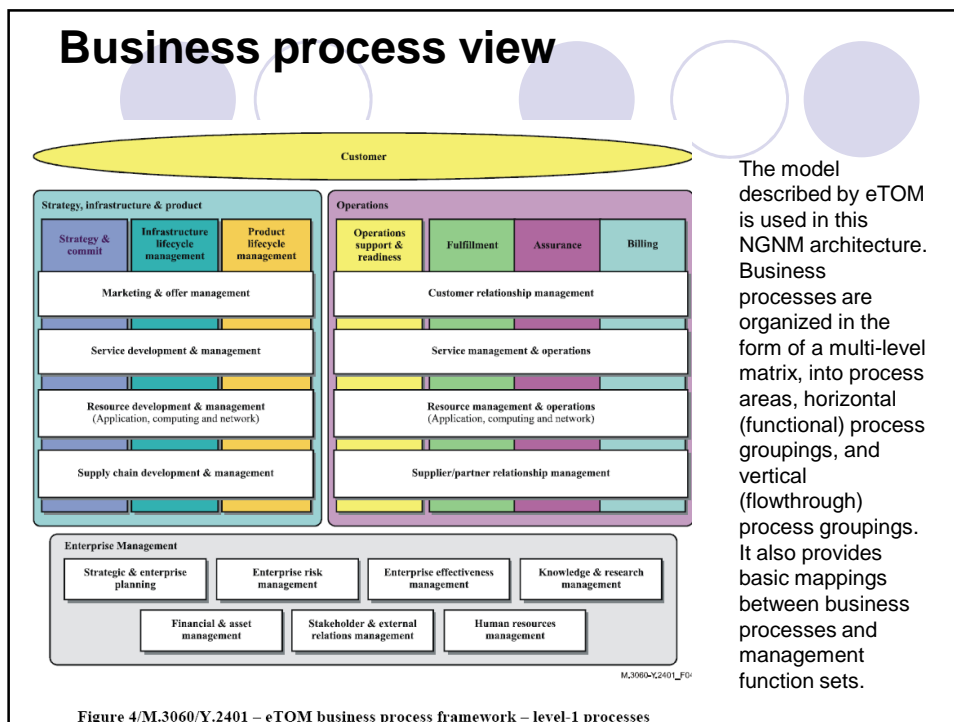


Figure 2/M.3060/Y.2401 – NGN management architecture



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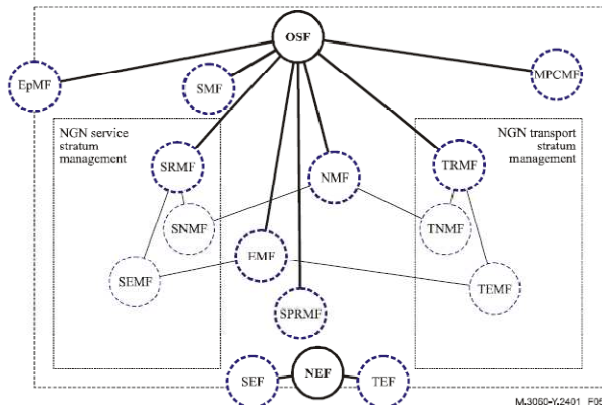


## Management functional view

- MFV is structured from the following fundamental elements:
  - management function blocks;
  - support function blocks;
  - management functionality;
  - provider reference points and consumer reference points;
  - logical management function layers.



## MANAGEMENT FUNCTION BLOCS



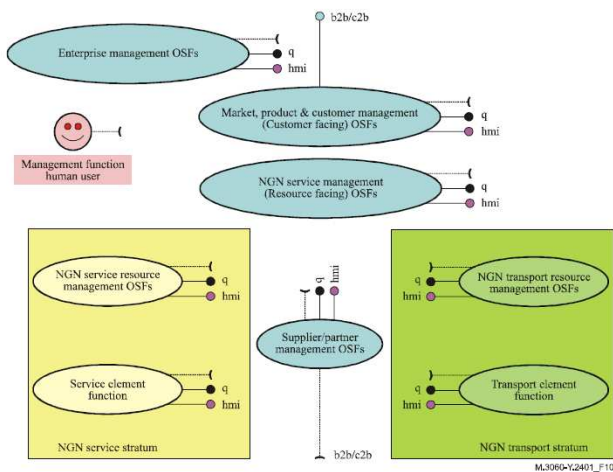
- \*EMF Element Management Function
- \*EpMF Enterprise Management Function
- \*MPCMF Market, Product & Customer Management Function
- NEF Next Generation Network
- \*NMF Network Management Function
- \*OSF Operations Systems Function
- \*SEF Service Element Function
- \*SEMF Service Element Management Function
- \*SMF Service Management Function
- \*SNMF Service Network Management Function
- \*SPRMF Supplier/Partner Relationship Management Function
- \*SRMF Service Resource Management Function
- \*TEF Transport Element Function
- \*TEMF Transport Element Management Function
- \*TNMF Transport Network Management Function
- \*TRMF Transport Resource Management Function



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## NGN management logical architecture



A specialization of OSFs based upon different layers of abstraction is the following:

- Enterprise Management;
- Market, Product and Customer Management (Customer-Facing Service Management);
- NGN Service Management (Resource-Facing Service Management);
- Resource Management;
- Service and Transport Element Management;
- Supplier and Partner Relationship Management.

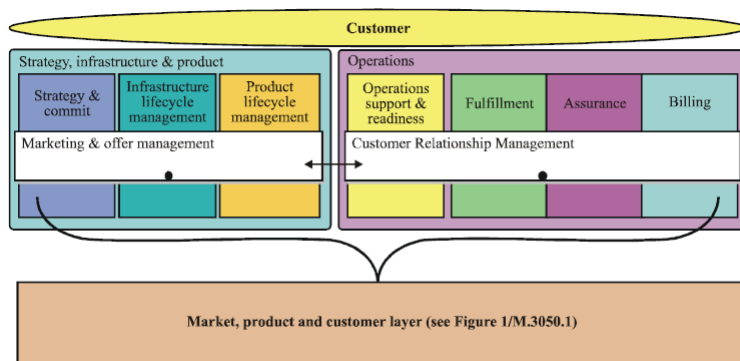


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## MARKET, PRODUCT AND CUSTOMER LAYER



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## Management information view

- Specifies the exposed information exchanged between function blocks defined in the functional view
- Is based on standardized, open management paradigms that support the standardized modeling of the information to be communicated.

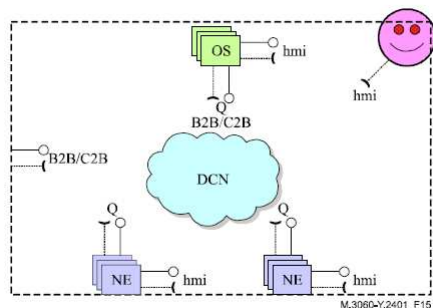


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# Management physical view

Structured from the fundamental elements:  
**physical blocks and interfaces.**



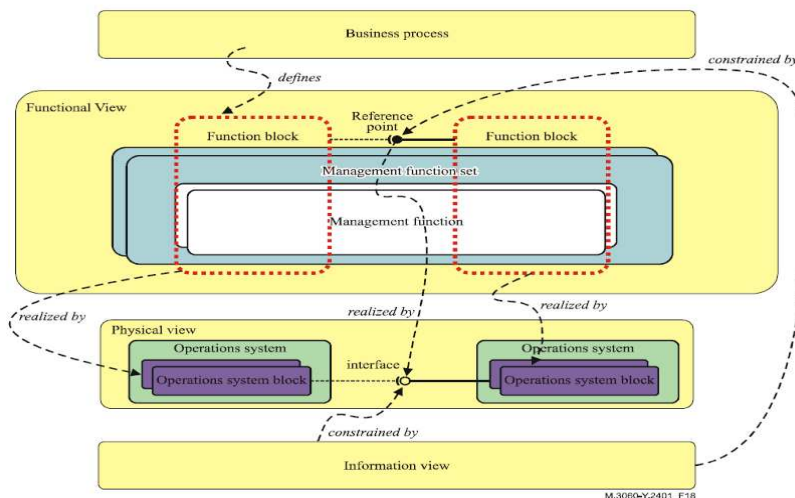
Support physical blocks:  
**Transformation, Adaptation, Mediation**



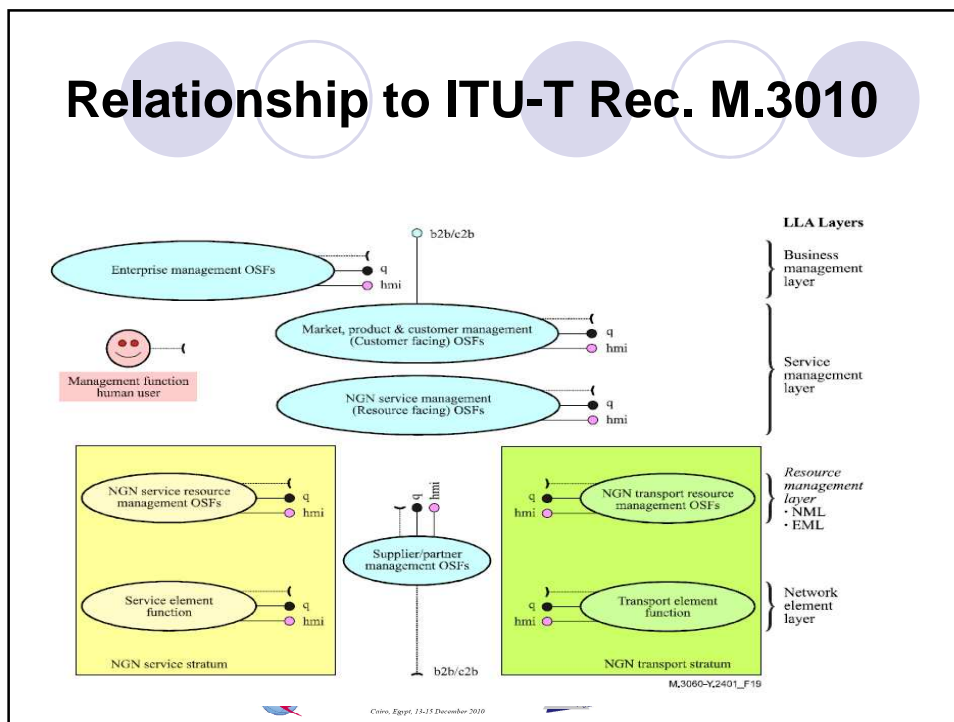
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# Relationships between management views



## Relationship to ITU-T Rec. M.3010



## CONCLUSION

- **MANAGEMENT TRANSFORMATION WILL REQUIRE TO:**
  - Identify strategic transformation areas
  - Create projects that implement the transformation
  - Define target architecture
    - Processes
    - Systems
    - Organization
  - Create an effective integrated Telecom Management system



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**THANK YOU FOR YOUR  
ATTENTION !**

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