TM Forum Training Plus at TeleManagement World
Long Beach, USA - 11th October 2004

Enhanced Telecom Operations Map®
eTOM:
An Introduction

Enrico Ronco

Mike Kelly
Agenda

- Welcome
- eTOM: an Overview
- eTOM: the Business Process Framework
- Break
- Bringing eTOM into your Business
- eTOM applications
- Q&A
- Close
Timeline

➤ Morning Session
  ➤ Start: 9.00
  ➤ Break: 10.30-11.00
  ➤ Close: 12.30

➤ Afternoon Session
  ➤ Start: 2.00
  ➤ Break: 3.30-4.00
  ➤ Close: 5.30
Housekeeping

➤ Courtesy
  ➤ Please silence mobiles, pagers, etc.

➤ Q&A
  ➤ Points of clarification as they arise
  ➤ Other issues at start/end of sessions during the breaks, end of day ...

➤ Feedback
  ➤ Please return Evaluation Forms
Agenda

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- eTOM: an Overview
- eTOM: the Business Process Framework
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- Bringing eTOM into your Business
- eTOM applications
- Q&A
- Close
eTOM: an Overview
Enhanced Telecom Operations Map® - eTOM: What is It?

- A telecommunications Service Provider business process framework
- Developed collaboratively over a decade
- Provides business-oriented view
  - emphasizes structure/ process components/ process interactivity/ roles/ responsibilities
  - sets requirements for (but is neutral towards) system solution/ architecture/ technology/ implementation
- Represents industry-consensus on Service Provider processes
  - harmonized position across global scene
  - can be tailored/ extended for individual companies

eTOM represents a framework for defining your own processes, and a tool for communication with others
A Brief History of eTOM

- 1999: stabilization of TOM
- 2000 - 2001: evolution of TOM towards ETOM
- 2001: eTOM v1.0, and v2.0 for Member Evaluation
- Jan 2002: eTOM v2.5 for Public Evaluation
- May 2002: eTOM v3.0 is TMF Approved
- 2002 - 2003: Updates to core eTOM released to Members and Public
- March 2004: New release eTOM 4.0 is TMF Approved
  - extends v3.0 with further process decompositions and flows in selected application areas, also B2B support and ITIL mappings
- April 2004: Submission of eTOM 4.0 to ITU-T as a standard
- May/June 2004: Formal acceptance of eTOM by ITU-T
- August 2004: eTOM 4.5 released as part of NGOSS 4.5

“e” for enhanced

... and work never stops
eTOM Business Process Framework
Conceptual Structure

Customer

Strategy, Infrastructure & Product
- Market, Product and Customer
- Service
- Resource
  (Application, Computing and Network)
- Supplier/ Partner

Operations

Suppliers/Partners

Enterprise Management

Shareholders
Employees
Other Stakeholders
eTOM has now been adopted by ITU-T, as a full international Recommendation.
eTOM 4.0 compared with eTOM v3.0

Areas of Update

- Operations Process Area fully decomposed to Level 3
- Rationalization of Strategy Infrastructure & Product Level 2 process groupings
  - SIP Level 3 decompositions now being worked for eTOM v4.5
- Re-design of Enterprise Management Level 1 - 2 Process groupings
- Rationalization of B2B theme with the introduction of the eTOM Business Operations Map

Standardization

- eTOM 4.0 now accepted by ITU-T as a formal international Recommendation
What is NGOSS?

» NGOSS is a comprehensive, integrated framework for developing, procuring and deploying operational and business support systems

» Industry-agreed, business & systems framework to guide the implementation of process automation:
  » Defines methodologies for evolving OSS and BSS infrastructure into a lean operations approach
  » Specifies the key characteristics of OSS/BSS (business processes, data models and integration architectures) that allow high degrees of process integration and automation
  » Developed by major operators and suppliers worldwide
  » Driven and managed by TM Forum
  » Implemented as a set of programs
NGOSS Goals

Across the board cost reductions

- Decrease OSS software development effort
- Decrease operations costs
- Reduce time to introduce new services
- Reduce number of physical interfaces per OSS component

Using New Generation Principles and Architecture

- Centralize work/process flow functionality
- Provide common data schema and implementation
- Facilitate migration from legacy OSS environments
- Uniform look at feel of user interfaces
- High scalability
- Security in all systems
NGOSS Lifecycle

Business

Deployment Capabilities, Constraints & Context

Implementation Capabilities, Constraints & Context

System

Implementation

Service Providers View

Corporate Knowledge Base

NGOSS Knowledge Base

Shared Knowledge Base

Service Developers View

Knowledge Base
eTOM: Linkage to NGOSS

- eTOM provides the NGOSS Business View
- eTOM processes, flows and information are input as requirements to the NGOSS System View
- Feedback from the NGOSS development cycle is used to validate the eTOM
GB921 4.0 Suite Content

- GB921* - Main document
- GB921B - Addendum on B2B integration
- GB921D* - Addendum on Decompositions
- GB921F* - Addendum on Flows
- GB921C - Application Note on Public B2B Business Operations Map (BOM)
- GB921L - Application Note on eTOM-ITIL Mappings

Note: * = updated in GB921 4.5 (Members Only), also adds
- GB921P - eTOM Primer
- GB921T - eTOM-M.3400 Mappings
- GB922 - SID/eTOM Linkages (SID document)
ITU-T M.3050
(based on GB921 4.0)

- **M.3050.0**: Brief context/positioning of eTOM by/for ITU-T
- **M.3050.1**: reproduces GB921 main document
- **M.3050.2**: reproduces GB921 Addendum D
- **M.3050.3**: reproduces GB921 Addendum F
- **M.3050.4**: reproduces GB921 Addendum B
- **M.3050 Supplement 1**: reproduces GB921 App. Note L
- **M.3050 Supplement 2**: reproduces GB921 App. Note C
- **M.3050 Supplement 3**: eTOM/M.3400 Mappings, jointly developed with ITU-T, now also published as GB921 App. Note T
eTOM Process Coverage

eTOM Business Process Framework (includes new GB921 4.5 material)

GB921 Main

Core eTOM Viewpoint
- eTOM Introductory Primer
  - GB921 Addendum P
- ICT Industry Specific Process Decomposition
  - GB921 Addendum D
- ICT Industry Example Process Flows
  - GB921 Addendum F

eTOM Public B2B Business Operations Map
- GB921 Addendum B

Cross Industry Horizontal Processes
- RosettaNet, ebXML

ICT Industry Specific Process Decomposition
- GB921C Application Note

Using eTOM to Model ITIL Processes
- GB921L Application Note

Using eTOM to M.3400 Mapping
- GB921T Application Note

B2B Transaction Pattern Template Dictionary
- RosettaNet, ebXML

Inter-Enterprise using Public Processes
eTOM Adoptions (SPs)

eTOM is a reference guideline in the definition of the Vodafone worldwide IT Enterprise Architecture.

eTOM is used to map functionality of existing systems and discover redundancies.

Telstra enhanced the core eTOM Framework to create a Framework for all Process Elements in Telstra down to Level 4.

eTOM is referenced in the design and implementation of the New Broadband Services Management Architecture.

eTOM is used in the definition and implementation of the business Process Framework for the merged Telia and Sonera companies.

eTOM is used to provide the basic framework for describing the process scope and positions the process capabilities of current / future systems. It also provides a neutral reference model with an associated lexicon for the processes to be addressed.
eTOM Adoptions (Vendors, SIs, etc)

Reorganized existing BPM and Best Practices around eTOM, with strategic decision to increase participation in eTOM teamwork. Introduced internal eTOM training, with eTOM as a common language and reference throughout the company. Mapped Amdocs products to eTOM, and used as sales tool.

Used eTOM to map existing industry processes, analyze business drivers and pains, and guide the design of new processes. Also, as a framework for ISV & SI Partnerships.

Have developed Telecom Reference Business Model based on eTOM (Levels 1, 2 & 3), and extended to Levels 5 & 6 for business scenario investigation, legacy system gap analysis, new OSS/BSS specification, consultancy support, etc.

Used eTOM for internal product training, product features cross-referencing and functional gap analysis, marketing analysis (competitors/partners), customer communication (incl. RFI/RFP), workflow “seed” processes.

Used eTOM for mapping Motorola products and managed services, for gap analysis of solution portfolio and for partnership communications.
eTOM Relationships with Industry Groups

eTOM has been formally approved as an ITU-T Recommendation (M.3050): "M.3050 aims to improve efficiency of the business processes at the heart of any service provider’s operation. The new framework will be used by industry to more efficiently implement operations and business support systems (OSS/BSS) and by ITU in the continued production of OSS/BSS specifications."

OSS/J (enabling marketplace of interchangeable, interoperable components that can be rapidly and cost effectively assembled into end-to-end telecommunications solutions) and TM Forum have established a formal partnership. OSS/J is the first and only technology specific realization of TM Forum’s NGOSS. eTOM has been used by as the base for the OSS/J Roadmap since 2001.

RosettaNet (enabling supply chain optimization for the high technology sector) and TM Forum have established formal partnership. eTOM business processes will be mapped to RosettaNet processes.
eTOM Futures: Ongoing Work

Current
- Guidelines on eTOM application and use
- Process metrification, KPIs/KQIs, etc
- Detailed eTOM mapping for ITIL process flows, etc
- Billing eTOM applications and process flows
- Resource Management mappings to network/element management scenarios, and process flows

Planned
- eTOM Compliance - approach and tests
- Linkage with other industry work (RosettaNet, SCOR, BPMI, etc)
- Security Management
- Consideration of further process decomposition detail
Getting Involved with eTOM

➢ Contributions needed:
  ➢ for member review and comment on results
  ➢ for member participation in the ongoing work with expertise in a variety of areas....

➢ More contributions and resources wanted on the eTOM team!
  ➢ Is there a work area important for your business?
  ➢ Do you have a view on the technical debate?
  ➢ Do you want feedback or advice on using eTOM?
  ➢ Do you want to influence where eTOM goes?

.... Then join the eTOM Team!
Summary

- eTOM addresses Service Provider operation
- guides process design and evaluation
- provides common structure/terminology for process/role/responsibility negotiation
- encompasses public/private process interaction
- eTOM provides the NGOSS Business Map
- eTOM is now a formal standard through adoption by ITU-T as Recommendation M.3050

eTOM is already in wide use across the industry!
and eTOM needs YOU
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eTOM:
the Business Process Framework
eTOM: the Big Picture

Customer

Strategy, Infrastructure & Product
- Strategy & Commit
- Infrastructure Lifecycle Management
- Product Lifecycle Management
- Marketing & Offer Management
- Service Development & Management
- Resource Development & Management (Application, Computing and Network)
- Supply Chain Development & Management

Operations
- Operations Support & Readiness
- Fulfillment
- Assurance
- Billing
- Customer Relationship Management
- Service Management & Operations
- Resource Management & Operations (Application, Computing and Network)
- Supplier/Partner Relationship Management

Enterprise Management
- Strategic & Enterprise Planning
- Enterprise Risk Management
- Enterprise Effectiveness Management
- Knowledge & Research Management
- Financial & Asset Management
- Stakeholder & External Relations Management
- Human Resources Management
eTOM Operations (OPS)

- “FAB” remains the core of the Operations area
- Operations Support & Readiness is separated from FAB
- “OPS” also supports functional process groupings shown as horizontal layers
“SIP” encompasses strategy and lifecycle management processes in support of operations
- Strategy & Commit
- Infrastructure Lifecycle Management
- Product Lifecycle Management

“SIP” also has functional groupings, aligned with those in “OPS”
eTOM Enterprise Management (EM)

Enterprise Management

- Strategic & Enterprise Planning
- Enterprise Effectiveness Management
- Enterprise Risk Management
- Knowledge & Research Management
- Financial & Asset Management
- Stakeholder & External Relations Management
- Human Resources Management
Customer Relationship Management: handles customers' needs, including the acquisition, enhancement, and retention of a relationship with a customer.

Service Management & Operations: handles services (Access, Connectivity, Content, etc.), and the provision of communications and information services required by or proposed to customers.

Resource Management & Operations: handles resources (application, computing, and network infrastructures), utilized to deliver and support services required by or proposed to customers.

Supplier/Partner Relationship Management: supports the core operational processes through interaction with external suppliers and/or partners. These processes align closely with a supplier’s or partner’s Customer Relationship Management processes.
OPS Vertical Level 1 Processes

Operations
All operations processes that support the customer operations and management, as well those that enable direct customer operations with the customer. These processes include both day-to-day, and operations support and readiness processes.

Fulfillment: provides customers with their requested products in a timely and correct manner

Assurance: executes proactive and reactive maintenance activities to ensure service to customers

Billing: produces timely and accurate bills, processes and collects payments, and handles billing enquiries.

Operations Support & Readiness: supports the "FAB" processes. In general, the processes are concerned with activities that are less "real-time" than those in FAB, and which are typically concerned less with individual customers and services and more with groups of these.
The OPS Level 2 Processes

**Operations**

- **Operations Support & Readiness**
  - CRM Support & Readiness

- **Fulfillment**
  - Customer Interface Management
  - Customer Interface Management
  - Selling
  - Marketing Fulfillment Response
  - Order Handling

- **Assurance**
  - Problem Handling
  - Customer QoS / SLA Management

- **Billing**
  - Billing & Collections Management

**Service Management & Operations**

- **SM&O Support & Readiness**
  - Service Configuration & Activation

- **Resource Management & Operations**
  - Resource Provisioning
  - Resource Trouble Management
  - Resource Performance Management

- **Supplier/Partner Relationship Management**
  - S/P Requisition Management
  - S/P Problem Reporting & Management
  - S/P Performance Management

**Retention & Loyalty**

- S/P Settlements & Billing Management

**Supplier/Partner Interface Management**
An Example of Level 3 Decomposition

Fulfillment (L1)

Resource Management & Operations (L1)

Resource Provisioning (L2)

Allocate & Deliver Resource (L3)  Configure & Activate Resource (L3)

Test Resource (L3)  Collect, Update & Report Resource Configuration Data (L3)
SIP Horizontal Level 1 Processes

Marketing & Offer Management: focuses on running and developing the Core Business for an ICSP Enterprise; including defining strategies, developing new products, managing existing products and implementing marketing and offering strategies.

Service Development & Management: plans, develops and delivers services to the Operations domain; including defining strategies for service creation and design, assessing service performance, and anticipating future service demand.

Resource Development & Management: plans, develops and delivers the resources needed to support services and products to the Operations domain; including defining strategies for development of network and other resources, interworking of new and existing technologies, assessing resource performance, and anticipating resource needs for future service demand.

Supply Chain Development & Management: focuses on the external interactions required with the supply chain to ensure that the best suppliers and partners are chosen; including support for sourcing decisions made by the enterprise, and ensuring that the contribution of suppliers and partners to the supply chain is timely and to the required performance.
SIP Vertical Level 1 Processes

**Strategy & Commit:** generates strategies in support of the Infrastructure and Product Lifecycle processes. It is also responsible for establishing business commitment within the enterprise to support these strategies.

**Infrastructure Lifecycle Management:** defines, plans and implements all necessary infrastructures (application, computing and network), as well as all other support infrastructures and business capabilities (operations centers, architectures, etc.).

**Product Lifecycle Management:** defines, plans, designs and implements all products in the enterprise’s portfolio.
The SIP Level 2 Processes

Strategy, Infrastructure & Product

Strategy & Commit

Infrastructure Lifecycle Management

Product Lifecycle Management

Marketing & Offer Management

Market Strategy & Policy

Product & Offer Portfolio Planning

Marketing Capability Delivery

Product & Offer Capability Delivery

Product & Offer Development & Retirement

Product Marketing Communications & Promotion

Sales Development

Service Development & Management

Service Strategy & Planning

Service Capability Delivery

Service Development & Retirement

Resource Development & Management

Resource Strategy & Planning

Resource Capability Delivery

Resource Development & Retirement

Supply Chain Development & Management

Supply Chain Strategy & Planning

Supply Chain Capability Delivery

Supply Chain Development & Change Management
# The Enterprise Management Hierarchy

## Enterprise Management

### Strategic & Enterprise Planning
- Strategic Business Planning
- Business Development
- Enterprise Architecture Management
- Group Enterprise Management

### Enterprise Risk Management
- Business Continuity Management
- Security Management
- Fraud Management
- Audit Management
- Insurance Management

### Enterprise Effectiveness Management
- Process Management & Support
- Enterprise Quality Management
- Program & Project Management
- Enterprise Performance Assessment
- Facilities Management & Support

### Knowledge & Research Management
- Knowledge Management
- Research Management
- Technology Scanning

### Financial & Asset Management
- Financial Management
- Asset Management
- Procurement Management

### Stakeholder & External Relations Management
- Corporate Communications & Image Management
- Legal Management
- Regulatory Management
- Community Relations Management
- Shareholder Relations Management
- Board & Shares/Securities Management

### Human Resources Management
- HR Policies & Practices
- Organization Development
- Workforce Strategy
- Workforce Development
- Employee & Labor Relations Management
Example Process Dynamics Flow: Ordering (Fulfillment)
Example Process Dynamics Flow: Ordering (Fulfillment) - Detail

Customer requests SP offering

Customer Interface Management

Customer Request Received

Order Confirmed

Customer Order Initiated

Priority Requested

Priority Advised

Retention & Loyalty

Design Requested

Design Confirmation by Engineering requested

Resource Provisioning & Allocation to Service Instance

External Supplier required

Resource Allocation requested

Internal Work Order Initiated

Resource Provisioning & Allocation to Service Instance

Resource Activation requested

Order Handling

Design Requested

Order Handling

Design Completed

Design Confirmation by Engineering requested

Order Handling

Internal Service Order Initiated

Design Accepted by Customer

Order Handling

Customer Interface Management

Order Completion Notification

Service Details for Assurance

Service Details for Billing

S/P Buying

S/P Purchase Management

External Resource Activated

Service Configuration & Activation

Resource Activated

Order Handling

Completion advised to Customer

Service Configuration & Activation

Service Configuration & Activation

Internal Resource Provisioning Completed

Resource Activation requested

Order Handling

Service Activated Completion advised to Customer

External Resource Activated

Order Handling

Service Activated
Modelling B2B in the Context of eTOM

B2B Environment
eTOM in a B2B Context

**Strategy, Infrastructure & Product**
- Strategy & Commit
- Infrastructure Lifecycle Management

**Product Lifecycle Management**
- Sales Development
- Marketing & Offer Management

**Service Development & Management**
- Service Strategy & Planning
- Service Capability Delivery

**Resource Development & Management**
- Resource Strategy & Planning
- Resource Development & Statement

**Supply Chain Development & Management**
- Supply Chain Strategy & Planning
- Supply Chain Capability Delivery

**Buy Side**

**Fulfillment**
- Customer Relationship Management
- Customer Interface Management

**Assurance**
- Billing & Collections Management
- Billing & Support Management

**Billing**
- Customer Experience Management
- Order Management

**Enterprise Management**
- Strategic & Enterprise Planning
- Enterprise Risk Management
- Enterprise Effectiveness Management
- Knowledge & Research Management

**Financial & Asset Management**
- Financial Management
- Asset Management
- Procurement Management

**Stakeholder & External Relations Management**
- Corporate Communications & Image Management
- Community Relations Management
- Shareholder Relations Management

**Human Resources Management**
- Organization Development
- Workforce Strategy
- Workforce Development
- Employee & Labor Relations

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eTOM-ITIL Mapping for Operations

Operations

Customer Relationship Management

Service Management & Operations

Resource Management & Operations

Supplier/Partner Relationship Management

red = internal IT services  blue = customer services
Summary

- eTOM provides a Business Process Framework for
  - process structure (hierarchy)
  - process decompositions (levels)
  - process flows (linkages)
  - process dynamics (behavior)
- eTOM is customizable and extensible for specific applications
- eTOM links with related industry work
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Bringing eTOM into your Business
To Start with ...

- **What eTOM is:**
  - Framework of organized Business Processes
  - Common terminology
  - Structured catalogue of process elements, which can be viewed in more and more detail

- **What eTOM is not:**
  - It is not a set of system specifications
  - It is not a methodology
First Steps in Using eTOM ...

- Gain internal commitment
  - Business process analysis/change needs buy-in and active participation
  - Obtain senior management recognition and support
- Define success criteria
  - Identify and assess area where eTOM may bring benefit
- Build confidence
  - Use initial results to justify further work
Applying eTOM

➤ eTOM provides a ready-made business process framework for you to use

BUT NOTE:

➤ eTOM is being further developed to lower-level detail
➤ It provides a generic framework which may need adjustment or extension for your business

... so, customize eTOM for your own needs
Applying eTOM

- Using eTOM directly
- Adapting and extending eTOM
- Linking eTOM with other work
Using eTOM Directly

- Use eTOM as a checklist and source of common terminology & approach
- Use eTOM framework structure to assist your business partitioning
- Use eTOM process groupings and definitions to define roles and responsibilities within your organization
- Seek supply of system and solutions from vendors to align with the eTOM framework
  - brings economies of scale across industry
  - accelerates availability of products
  - allows customization and extension
Examples: eTOM as a Reference

- Contains a full enterprise map to checkpoint your activities
  - depending on business, some may be in/out of scope
- Defines and describes business processes using a common vocabulary
  - avoids misunderstandings between departments/BUs and with external partners/suppliers/customers
- Structures processes to assist (but not force) organizational groupings
  - Organizational boundaries can be set at any point
Example - Structuring Operations

For example,

FAB
allows clear definition of customer-facing processes in ordering, repair, billing, etc.
positions network-facing processes within Operations
handles supplier interactions
separates major “through-flows” on Fulfillment, Assurance, Billing

Operations Support & Readiness: allows separation of “front-office” and “back-office” functions in Operations
Example - Structuring Operations

<table>
<thead>
<tr>
<th>Operations Support &amp; Readiness</th>
<th>Fulfillment</th>
<th>Assurance</th>
<th>Billing</th>
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# Example – Procurement Scope

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## Service Management & Operations

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## Supplier/Partner Relationship Management

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<td>Supplier/Partner Interface Management</td>
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<td>S/P Performance Management</td>
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</tbody>
</table>
Adapting eTOM

- Use eTOM framework as baseline
- Define additional detail and modifications in areas specific to your business
- Extend eTOM for use within your company
- Influence ongoing eTOM development through direct participation
  - share ideas and gain insight
  - ensure eTOM evolves in line with your needs
  - maximize the relevance of industry products
Extending eTOM

- **Bottom-up**
  - Start with your enterprise existing Business Processes definitions
  - Map existing Business Process flows back to eTOM
  - Construct your own decomposition of eTOM published Business Processes

- **Top down**
  - Decompose eTOM processes into component processes, to expose more detail
  - Define process flows, to link processes together
  - Combine decompositions and flows, to describe fully the behavior of each process area

- Continue to lower levels of detail

*Typically, there are some special needs/constraints, so this is not an exact science!*
Process Decompositions

- Define components of a process that perform part of that process
- Aim to provide complete analysis of the process decomposition - i.e. the sum of the components equals the totality of the original process
- Continue to as many sub-levels as needed

Diagram:

- Process X
  - Process Element X1
  - Process Element X2
  - Process Element X3
    - Process Element X21
    - Process Element X22
      - Process Element X211
      - Process Element X212
Process Decompositions

- Provide insight into the structure and content of process areas (groupings)
- Reveal finer detail at lower levels, as decomposition proceeds
- Aim to provide a complete view of process capability / functionality
- Represent a static perspective of process
- Analyze a typical scenario
- Choose an appropriate level of process detail
- Capture the interactions amongst the processes involved
- Capture the triggers
- Aim to provide an example of the process flows - i.e. only some of the possible interactions are described in each scenario
Process Flows

➤ Provide insight into the behavior and interaction amongst processes
➤ Can use process decompositions (and vice versa) to enhance/refine detail
➤ Typically, provide a partial view of process behavior (because flows are based on specific scenarios)
➤ Represent a dynamic perspective of process
Decomposed Process Flows

- Use results from previous process decompositions and flows to analyze fully the behavior within a specific process area.
- Capture all the interactions amongst the process components within that process area.
- Aim to provide complete analysis of the process flows within the specific process decomposition - i.e. all interactions amongst all the process components are fully described.
Decomposed Process Flows

- Provide insight into both the internal structure and the behavior within a process
- Reveal finer detail at lower levels, as decomposition proceeds
- Aim to provide a complete view of process operation
- Combine the static and dynamic perspectives of process
Customizing eTOM

➤ The steps outlined are not mandatory
➤ they provide insight into your process needs - use them as you find useful
➤ for example, go directly to decomposed process flows from a process decomposition, if you feel you can, and this is useful
Closing the Loop

- TM Forum is continuing eTOM development along these lines
  - Addenda to GB921 are being released with lower-level decompositions and flows
  - Prioritized business scenarios are being analyzed and documented
  - The eTOM “map” is being populated progressively
- So, contribute through participation and comment to ensure relevance of the work to your business
Demonstrating the Approach

Customer

Enterprise Management

<table>
<thead>
<tr>
<th>Strategic &amp; Enterprise Planning</th>
<th>Enterprise Risk Management</th>
<th>Enterprise Effectiveness Management</th>
<th>Knowledge &amp; Research Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial &amp; Asset Management</td>
<td>Stakeholder &amp; External Relations Management</td>
<td>Human Resources Management</td>
<td></td>
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</tbody>
</table>

Strategy, Infrastructure & Product

<table>
<thead>
<tr>
<th>Strategy &amp; Commit</th>
<th>Infrastructure Lifecycle Management</th>
<th>Product Lifecycle Management</th>
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<tbody>
<tr>
<td>Marketing &amp; Offer Management</td>
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<tr>
<td>Service Development &amp; Management</td>
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<tr>
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Operations

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<thead>
<tr>
<th>Operations Support &amp; Readiness</th>
<th>Fulfillment</th>
<th>Assurance</th>
<th>Billing</th>
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<tr>
<td>Customer Relationship Management</td>
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</table>

Enterprise Effectiveness Management

<table>
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<tr>
<th>Customer Relationship Management</th>
<th>Service Management &amp; Operations</th>
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Knowledge & Research Management

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<td>Human Resources Management</td>
<td></td>
</tr>
</tbody>
</table>
Fulfillment - End to End Flow

Definition of:

- General Process interaction
- Level 2 process interaction
- Level 2 process flow
- Level 3 process flow
eTOM Operations Domain
DSL Fulfillment

- Customer Interface Management
- Customer QoS / SLA Management
- Billing & Collections Management
- Service & Specific Instance Rating
- Resource Performance Management
- Resource Problem Management
- Resource Trouble Management
- S/P Problem Reporting & Management
- S/P Performance Management
- S/P Settlements & Billing Management
- Service & Readiness
- S/P Requisition Management
- RM&O Support & Readiness
- SM&O Support & Readiness
- Resource Provisioning
- CRM Support & Readiness
- CRM
- SM
- RM
- S/PRM
- OSR
- Supplier/Partner Interface Management
- Fulfillment
- Assurance
- Billing
- Operations
DSL Fulfillment
Process Threads Defined

Three different process threads were defined

- Pre-Sale activities
- Ordering activities
- Post-Order activities
Graphical Conventions

- **External Event**
- **Internal Event**
- **External Result**
- **Internal Result**
- **Break (awaiting input/response)**
- **Process**

Swim lane: represents eTOM “layer” (i.e. horizontal Level 1)
Ordering Thread Process Flow (1/3)

Customer Request SP Offering

Customer Interface Management

Selling

Retention & Loyalty

Order Handling

Order Handling

Awaiting Design

Design Completed

Awaiting Activation completion

Customer Request SP Offering

Customer request Service

Request Customer Priority

Customer Priority Assessed

Customer Request SP Offering
Ordering Thread Process Flow (2/3)
Managing the request identification and request fulfillment initiation. Also take care of tracking request status.

Managing the creation and maintenance of customer information. This should include the ability to capture and maintain customer organizational and financial structure.
Level 3 Decomposed Process Flows Diagram

- **Selling**
  - Sales Enquiry routed to Selling group
  - Customer Selects preferred option
  - Customer Request Service
  - Pre-Order result

- **Manage Prospect**
  - Qualify Customer
  - Acquire Customer Data
  - Negotiate Sales
  - Cross/Up selling
  - Offer Customer Solution Alternatives

- **Negotiate Sales**
  - Acquire Customer Data
  - Pre-order result
  - Customer Order to Order Handling

- **Customer**
  - Sales Proposal offer to Customer
  - Manage Prospect
  - Qualify Customer
  - Negotiate Sales
  - Acquire Customer Data
  - Negotiate Sales
  - Acquire Customer Data
  - Negotiate Sales
  - Acquire Customer Data
... links with Process Decomposition Diagram

- **Selling**
  - Prospect Management
  - Customer Qualification and Education
  - Sales Negotiation
  - Customer Data Acquisition
  - Cross / Up Selling

- **Prospect Needs Analysis**
  - Potential Solutions Identification
  - Track and Report Prospect Result

- **Understand Customer Need**
  - Qualify Customer
  - Develop Solution Alternatives
  - Customize Solutions to Customer Requirem
  - Confirm Solution Availability
  - Product Development Inquiry

- **Solution Determination With the Customer**
  - Sales Proposal Development
  - Solution Details Negotiation
  - Sales Closure

- **Customer Identity Capture**
  - Relationship Establishment
  - Customer Profile Capture and Record
  - Customer Preferences Capture and Record

- **Up & Cross Sale Opportunities Identification**
  - Up & Cross Sale Packages Application
Some Lessons Learned ....

- Must clearly scope the scenario being modeled!
- End-to-end process flows help to validate process decompositions (and vice versa)
- Several types of flow diagram are useful
- Process flows can be described at different levels of process decomposition (providing wider/narrower views)
- Process flows allow a natural linkage with the SID information viewpoint
- Lots of iterations may be needed
- The more cases considered, the better ...
Practical Steps ...

- Firm up agreement at a given level of decomposition and analysis
- Proceed to develop the next level of detail
- Stop when you wish!
  - when you have sufficient detail to use within your business
  - when you consider the added value gained of developing further detail is not in proportion of the extra work needed.
Conclusions

- eTOM provides a ready-made business process framework
- eTOM can be applied directly as a business tool, internally and with other (trade) organizations
- eTOM can be extended for your specific needs
Linking eTOM with Other Work

- TM Forum actively seeks liaisons with other relevant industry bodies
- Some examples are:
  - ITU-T - adoption of eTOM as ITU-T Recommendation (M.3050), with other work underway
  - RosettaNet - joint work to link eTOM processes with RosettaNet PIPs
  - OSS/J - NGOSS compliance assessment for OSS/J solutions
- Within NGOSS, eTOM and SID have defined mappings for process / information linkages
Overview of Mapping between eTOM Business Processes and SID Information Domains

Strategy, Infrastructure & Product
- Strategy & Commit
- Infrastructure Lifecycle Management
- Product Lifecycle Management

Operations
- Operations Support & Readiness
- Fulfillment
- Assurance
- Billing

Strategy & Commit
- Market/Sales
- Product
- Customer

Service Development & Management
- Service Management & Operations
- Resource Management & Operations
- Supplier/Partner Relationship Management

Resource Development & Management (Application, Computing and Network)
- Resource Management & Operations
- Supplier/Partner Relationship Management

Supply Chain Development & Management
- Supplier/Partner Relationship Management

Enterprise Management
- Strategic & Enterprise Planning
- Enterprise Risk
- Enterprise Effectiveness Management
- Knowledge & Research Management

Enterprise
- Financial & Asset Management
- Stakeholder & External Relations Management
- Human Resources Management
### Detailed SID ABE to eTOM Process Mappings (Partial View of Product Domain)

<table>
<thead>
<tr>
<th>Product ABES</th>
<th>Primary Vertical eTOM Process Groupings</th>
<th>Primary eTOM Level 2 Processes</th>
<th>Secondary eTOM Level 2 Processes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strategic Product Portfolio Plan</strong>&lt;br&gt;Is concerned with the plans of the product portfolio, which product offerings to make available to each market segment and the plans to develop and deploy product offerings, as well as retirement of products.</td>
<td>M&amp;OM – SC</td>
<td>Product &amp; Offer Portfolio Planning</td>
<td>Market Strategy &amp; Policy</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Product &amp; Offer Development &amp; Retirement</td>
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<td>Product &amp; Offer Capability Delivery</td>
</tr>
<tr>
<td><strong>Product Specification</strong>&lt;br&gt;Defines the functionality and characteristics of product offerings made available to the market.</td>
<td>M&amp;OM – PLM</td>
<td>Product &amp; Offer Development &amp; Retirement</td>
<td>Service Configuration &amp; Activation</td>
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<td>SM&amp;O Support &amp; Readiness</td>
</tr>
<tr>
<td><strong>Product Offering</strong>&lt;br&gt;Represents tangible and intangible goods and services made available for a certain price to the market in the form of product catalogs. This ABE is also responsible for targeting market segments based on the appropriate market strategy.</td>
<td>M&amp;OM – PLM</td>
<td>Product &amp; Offer Development &amp; Retirement</td>
<td>Marketing Fulfillment Response</td>
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<td>Product Marketing Communications &amp; Promotion</td>
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<td>Product &amp; Offer Capability Delivery</td>
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Agenda

- Welcome
- eTOM: an Overview
- eTOM: the Business Process Framework
- Break
- Bringing eTOM into your Business
- eTOM applications
- Q&A
- Close
TeleManagement World Training Plus
Long Beach, USA - 11th October 2004

eTOM Applications

Experiences in Individual Enterprises
eTOM in TeliaSonera Real Application

- Differences within Telia (fixed & mobile, Sweden) and Sonera (fixed & mobile, Finland) were evident: terminology, ways of operating, OSSs, culture, etc.
- eTOM is used in e.g.:
  - Contribution in Identification of a new corporate OSS Architecture
    - A new OSS architecture definition project is running
    - eTOM level 3 processes have been mapped with functional components of this new OSS Architecture
    - existing systems are mapped with the new architecture and gaps/overlaps identified
  - Contribution in Definition of a new process framework for the “merged” company
    - Saved effort in defining new process reference
    - Adopted a neutral reference in solving potential conflicts
    - Consolidated a TeliaSonera “Level 1 & 2” view, derived from eTOM
    - Currently facing issues in consolidating eTOM at the operational level (how to apply eTOM-based framework in real process management/development)
    - Several individual process development activities utilise eTOM elements
  - Contribution in Definition of a new Corporate IT Architecture
    - Overall IT architecture development for TeliaSonera based on eTOM and SID

Courtesy of Veli Kokkonen - TeliaSonera
eTOM in Vodafone: Real Application

- Used as Industry Standard Process Model for Reference Purposes
- Used to ensure Architecture completeness
- Contributes to development of Functional Architecture
- Contributes to production of future target architecture
- Architecture used to develop future strategy
- Future strategy enables convergence and consolidation of diverse systems across many countries
- Savings have been and will be achieved in avoidance of duplication and building the right systems for the business

Courtesy of Roger Cutts - Vodafone
eTOM in Group: Real Application

The eTOM framework is currently utilised in different contexts

- **Wireline**
  - The TOM/eTOM framework was utilized as the Process Model to define the functionalities needed in the New Broadband Management Architecture (especially for the Fulfillment and the Assurance area)
  - The framework was utilized in conjunction with other TMF NGOSS outcomes such the Technology Neutral Architecture

- **3G (new) Streaming**
  - Experimented with the eTOM to define high level processes for 3G (new) Streaming, with the following benefits:
    - Specific case study: guideline for process engineering and checklist for process completeness and checklist for end-to-end flow definition
    - General statement: guideline in the identification of process linkages within the enterprise
  - Referenced eTOM, among other sources, in the Company’s Technology Innovation Plan definition
  - Is evaluating future adoption of eTOM as the reference process framework

*Courtesy of Enrico Ronco – Telecom Italia*
eTOM and ITU-T:
A Resource Management Perspective on Applying eTOM in a TMN Environment
Background

- ITU-T - TM Forum collaboration agreement
- eTOM 3.0 submitted to ITU-T in Sep 2003 for information and to initiate the joint work
- Joint work approved during SG4 Meeting in Oct 2004
- Formed joint Telecom Management Collaboration Focus Group at SG4 Meeting
- Terms of Reference (Charter):
  - Incorporate eTOM into an ITU-T recommendation
  - Develop a view of Process-to-Functional mapping
    - also objective of the eTOM Technology Resource Integration Process (TRIP) activities
TMCFG Deliverables based on GB921 4.0

- **M.3050.0**: Brief context/positioning of eTOM by/for ITU-T
- **M.3050.1**: reproduces GB921 main document
- **M.3050.2**: reproduces GB921 Addendum D
- **M.3050.3**: reproduces GB921 Addendum F
- **M.3050.4**: reproduces GB921 Addendum B
- **M.3050 Supplement 1**: reproduces GB921 App. Note L
- **M.3050 Supplement 2**: reproduces GB921 App. Note C
- **M.3050 Supplement 3**: eTOM/M.3400 Mappings, jointly developed with ITU-T, now also published as GB921 App. Note T
Positioning of M.3050 with ITU-T TMN

Set of Processes needed
To achieve business goals

Grouping of Telecom Resources

Sequenced set of Functional activities
To deliver a specific result

Management Service
Managed Area
M.3200

Process
Process Element
M.3050

Grouping of Management Functions

Building blocks
For process flows

Management Function Set
M.3400

Management Function

Mapping

Comprised of...
Process Decomposition & Functions

M.3400 Management Functions meld with processes

Mappings at lower levels for further study

More granularity

M.3400 Function sets
Objectives of mapping

- Assist in validating & completing eTOM process analysis work in the relevant process areas
- Facilitate the linkage of process and functional views
- Provide a framework for level of granularity and abstraction required for interface definitions
- Get a better view on what should be implemented within systems in terms of:
  - Reusable software components
  - Implementation boundaries
OSI/TMN Functional Areas & OPS

Operations
- Operations Support & Readiness
- Fulfillment
- Assurance
- Billing

- Customer Relationship Management
- Service Management & Operations
- Resource Management & Operations (Application, Computing and Network)
- Supplier/Partner Relationship Management

Security
TMN Logical Layering & RM&O

- Business Management
- Service Management
- Network Management
- Element Management

Operations
- Operations Support & Readiness
- Fulfillment
- Assurance
- Billing

- Customer Relationship Management
- Service Management & Operations
- Resource Management & Operations (Application, Computing and Network)
- Supplier/Partner Relationship Management
TMN: Network Vs. Element Mgmt

TMN Logical Layered Architecture definition:

- The Element Management Layer:
  - Manages each network element individually
  - Controls a subset of network elements

- The Network Management Layer:
  - Manages all the NE’s as presented by the EML, both individually and as a set
  - Controls the network view of all network elements within its scope or domain
Process/Function Mapping

CRUD: Create, Read, Update, Delete

Current Mapping

Future work

Data 1
Data 2
Data 3
Data 4
Data 5

Func1
Func2
Func3
Func4

Step 1
Step 2
Step 3

Process 1

Process 2

Trigger 1
Trigger 2

Result 1
Result 2
Linking Level 2 Processes to Function Set Groups

**RM&O Level 2 Processes from eTOM**

- RM&O Support & Readiness
- Resource Provisioning
- Resource Trouble Management
- Resource Performance Management
- Resource Data Collection & Processing

**Function Set Groups (M.3400)**

- Network Planning / Engineering
- Provisioning
- Alarm Surveillance
- Fault Localization
- Trouble Admin.
- Containment & Recovery
- Performance Quality Assurance
- Performance Analysis
- RAS Assurance
- Installation
- Status & Control
- Testing
- Fault Correction
- Security Admin.
- Detection
- Performance Management Control
- Performance Monitoring
- Usage Measurement

From M.3etom Supplement 3
Outlook for Possible Future Work ...

» Further elaborate mapping for specific scenario’s which are relevant for e.g.:
  » TRIP: B2B interactions on maintenance & purchasing interface for Managed Services of infrastructure
  » SoIP: Standardize Network Management interfaces for new generation services
» Validate / Complete mapping using the MTNM and IPNM deliverables
» Add the Data View
Process Metrics and eTOM
A Few Words About Performance

Two aspects of managing performance:

(Continuous) Performance Improvement:

- Constantly making improvements to processes and overall corporate activities. By applying a Continuous Improvement philosophy.
- Promote self-diagnosis and identify areas for improvement
- Promote effective planning

Performance Assessment and Management:

- Is a process that supports the strategic objectives of the organization
- Helps understand, predict and manage corporate performance.
- Useful to improve business processes and to measure and understand overall performance

... a vital question: what do you measure?
Measurable Key Performance Indicators (KPI) are Derived from Critical Success Factors (CSF).
Example of Overall CRM Objectives and Key Success Factors

**Objectives**

- Maximize Customer Satisfaction
  - Customer Satisfaction Measure
  - Percent Customer Churn
  - Customer Longevity

- Maximize Employee Satisfaction
  - Employee Satisfaction Measure
  - Employee Churn

- Maximize Shareholder Value
  - Customer Care Cost Per Subscriber
  - Revenue per Subscriber
  - Lost Revenue

- Maximize Improvement through Info Exchange
  - Info Exchange Impact on Customer Satisfaction
  - Info Exchange Impact on Employee Satisfaction

**Key Success Factors**
Example - Driving Objectives and Key Success Factors into Each Customer Management Process

High Level Objectives and Key Success Factors
- Maximize Customer Satisfaction
- Maximize Employee Satisfaction
- Maximize Shareholder Value
- Maximize Improvement through Information Exchange

Common Process Measures

Process Measures
- Activations
- Inbound Customer Care
- Usage Monitoring
- Major Accounts
# Some KPIs and Measures for PLM

<table>
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<tr>
<th>KPI/Measure</th>
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<tbody>
<tr>
<td>Average product development lead time</td>
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<tr>
<td>Revenue achieved for new product(s), actual vs planned</td>
</tr>
<tr>
<td>Percentage of revenue achieved from new products</td>
</tr>
<tr>
<td>Percentage of new product specifications developed on target</td>
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<tr>
<td>Percentage of new product plans developed on target</td>
</tr>
<tr>
<td>Revenue by product, actual vs planned</td>
</tr>
<tr>
<td>Profit by product, actual vs planned</td>
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<tr>
<td>Revenue and profit growth rates by product</td>
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<tr>
<td>Market share by product</td>
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<tr>
<td>Market share growth rate by product</td>
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<tr>
<td>Number of new customers by product</td>
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<tr>
<td>Number of customers discontinuing product</td>
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<tr>
<td>Advertising and promotion expenditure as a percent of total expenditure</td>
</tr>
<tr>
<td>Percentage of products enhanced</td>
</tr>
<tr>
<td>Percentage revenue increase from enhanced products</td>
</tr>
<tr>
<td>Percentage of customers satisfied with the company’s product(s)</td>
</tr>
<tr>
<td>Percentage of products discontinued</td>
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</tbody>
</table>
Making Measurement Relevant ...

- Process metrics assist visibility of business efficiency
- Metrics in one area of operation may need interpretation/transformation to be useful in supporting other areas and the business overall
- An example is metrics used to assess and support Customer SLAs
  - much of the source information relates to underlying performance of network and other resources
  - Immediate measures are not customer-focused

... another vital question: how to make the link?
Quality Indicator Hierarchy

- **Customer Focus**
  - Product KQIs
  - Service KQIs

- **Internal Focus**
  - KPIs
  - Service Resource Data

**Service Resources**

- Additional Data (Policies, Objectives, Service Plans Etc.)

Ref: TM Forum TMF506 & GB923
Outlook for Possible Future Work ...

- Develop metrication framework for eTOM based on Quality Indicator Hierarchy and Catalyst/other experience
- Specify metrics (KPIs/KQIs) for selected eTOM processes (populate progressively)
- Link with other industry work using eTOM in this way (e.g. GBA for Billing metrics based on eTOM)
- Deliver Performance Assessment strategy around the eTOM Framework
Agenda

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- eTOM applications
- Q&A
- Close
Questions & Answers
Getting Involved with eTOM

- Contributions needed:
  - for member review and comment on results
  - for member participation in the ongoing work with expertise in a variety of areas....

- More contributions and resources wanted on the eTOM team!
  - Is there a work area important for your business?
  - Do you have a view on the technical debate?
  - Do you want feedback or advice on using eTOM?
  - Do you want to influence where eTOM goes?

.... Then join the eTOM Team!
Contacting the TM Forum

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Web: www.tmforum.org
Training Plus: education@tmforum.org
Next Steps

- Training Plus at TeleManagement World, Nice, France, 16-19 May, 2005:
- TeleManagement Regional Summit, Bangalore, India, 5-6 December, 2004:
  - [http://www.tmforum.org/browse.asp?catID=1118&linkID=29688](http://www.tmforum.org/browse.asp?catID=1118&linkID=29688)
- TM Forum “We Come to You” courses:
- TM Forum Webinar series: