Interoperable Standards for Telecom e-Business

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Topics

• The Telecom e-Business challenges

• TMF and it’s collaboration with other industry groups

• Summary
The Telecom e-Business Challenges

• **Delivering Services rather than Physical Products.**
  Most existing e-business approaches have focused on delivery physical goods. Service providers deliver telecommunications services that place additional requirements on e-commerce solutions such as assurance, SLA agreements, and security.

• **Service Lifecycle**
  The sale of telecommunications services is a process that starts with the provisioning phase and continues in time for many aspects (e.g. billing, assurance). These aspects are not usually addressed by standard B2B solutions.

• **Telecommunication Service complexity**
  Telecommunications services have many attributes amongst which are: the location of the service end point, the technical specification of the service interfaces, the SLA and service wrap around a technical product, pricing packages and volume discount offers.

Based on Eurescom P1106 project feasibility studies
The Telecom e-Business Challenges (cont’d)

• **Service Platform Integration**
  The complexity of the above lifecycle aspects of Telecom products, makes it more difficult to integrate B2B platforms with legacy systems and network management systems.

• **General e-Business technologies can be leveraged but not enough**
  There is economic value in reusing the investment being made for many other industries, but Telecom specific context need to be introduced and interoperate with generic set of standards. Need knowledge base from both camps.
The E-business Software Elements

- Universal Business Dictionary Content
- Vertical Technical Dictionary Content
- Business Dictionary Structure
- Technical Dictionary Structure
- Business Document Definition
- Core XML Format Standards
- Process Coordination Framework
- Directory Service
- Process Description Language
- Universal Business Process
- Trading Partner Agreement
- Security
- Non-e-business specific Standards, Protocols & Tools
- E-business Definitions, Format, Structure and Choreography

Adopted from Derek Coleman’s RosettaNet Conceptual Architecture
**E-BUSINESS Elements**

- **Backend Integration**
  - Technology specific adapters, APIs, shared message bus

- **Service Oriented Architecture**
  - Development platform for web-based services

- **Core XML Format Standards**
  - Building blocks of XML content for business document representation

- **Business Dictionary Structure**
  - Business dictionary structure

- **Business Document Definition**
  - Business specific document structure built from above business vocabularies

- **Business Model Specific Process**
  - Business processes that may inherit from universal or supply chain but for different business model e.g. retailer, wholesaler

- **Process Coordination Framework**
  - Complements messaging layer for loosely coupled environment

- **Directory Service**
  - Structure and access protocol for registries and repositories for partner discovery

- **Process Description Language**
  - Methods to record repeatable business process

- **Telecom Domain Specific Vocabularies & Content**
  - Vocabulary and structure defined for specific technology domain e.g. T1M1 tML and its artifacts for Telecom industry

- **Universal Business Dictionary Content**
  - Vocabulary and structure defined for specific technology domain e.g. ebXML core components and RosettaNet bus. dictionary

- **Universal Business Process**
  - Business processes applicable to all business e.g. invoice, order

- **Universal Security**
  - Mechanism spans thru all layers e.g. digital signature, SSLv3, XML signature

- **Telecom Service Specific Requirements & Services**
  - Dynamic creation and management of trading partner agreement e.g. ebXML CPPA

- **Telecom Domain Specific Requirements & Services**
  - Dynamic creation and management of trading partner agreement e.g. ebXML CPPA

- **Session management and transaction coordination including reliable and secured messaging**

- **Common business vocabulary e.g. ebXML core components RosettaNet bus. dictionary**

- **Schema for business dictionary structure e.g. RosettaNet BDS**

- **e.g. RosettaNet PIP OAG BOD**

- **e.g. XML DTD XML schema XSLT**

- **e.g. ebXML TRP SOAP-RPC**

- **e.g. J2EE .NET**

- **e.g. CORBA, MQseries adapters**

- **Non e-business specific Standards, Protocols & Tools**

- **E-business Definitions, Format, Structure and Choreography**

- **Telecom Service Specific Requirements**

- **e.g. UDDI Si2 Registry**

- **e.g. WSDL XLANG**

- **Core XML Format Standards**
  - Vocabulary and structure defined for business dictionary structure e.g. RosettaNet BDS

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What is TM Forum

- Non-profit global consortium providing leadership on Operations Support Systems (OSS) and management issues for the entire communications industry
  - 350 members in 38 countries
  - Service providers, software and hardware suppliers, systems integrators
- Provides a collaborative environment where companies can address critical business and technical issues
- Provides on-line access to industry information, market conditions and technical solutions
- Provides in person education, information and networking opportunities
  - TeleManagement World Conference & Expo

The voice of the OSS industry
We Serve the Entire OSS Value Chain

**Middleware suppliers:**
- Platform suppliers
- Mediation suppliers
- Database suppliers
- Software components suppliers

**Application/system suppliers:**
- Point systems
- Small solution suites

**Solutions suppliers:**
- Systems integrators
- Computer companies
- Ex telco groups
- Equipment suppliers

**Service and network operators:**
- Fixed
- Mobile
- ISP
- ASP
- MVNO
- Etc.

TeleManagement FORUM™
Value Chains are Fluid and Complex

In the past, systems were deployed in a precise and known environment

**Today**

- Partnerships get created, dissolved & re-created in real time to meet market opportunities
- New suppliers brought in to offer new capabilities but must “fit in”
- Mergers & acquisitions keep the situation in a constant state of flux
What areas does TM Forum address?

- Provides strategic leadership and guidance on:
  - New Generation Operations Systems and Software (NGOSS)
  - Business Process Modeling and Automation
  - Shared Information and Data Modeling and Usage
  - Service Creation, Provisioning & Delivery
  - Web-Based Customer Care (E-Care) and Customer Relationship Management (CRM)
  - Service Level Management & Quality of Service
  - Managing Next Generation Network Technologies (Broadband, Mobile, etc.)
  - Systems Integration and Implementation

- Enables collaborative, business-driven solutions based on commercially available software and industry standards
IGAB Objectives

– To provide a focal point within TM Forum for knowledge on the work of other Industry Groups who are particularly relevant to the work programme of TM Forum

– To build a picture of the working of TM Forum in relation to a selection of other Industry Groups. This picture to include both technical content and method of working

– To provide advice to TM Forum working teams on the developments available from other Industry Groups in order that TM Forum may take full account and build upon this work where appropriate

– To advise TM Forum Management (including Board of Directors) on benefits of working relationships with selected Industry Groups

– To provide a focus for the dissemination of TM Forum’s work into other Industry Groups in order that they may take full account and build upon this work where appropriate.

– To assist TM Forum in the operation of its work-programme evaluation in relation to the placement of work from other Industry Groups. For example, evaluation of new work proposals – as specified within TM Forum Project Charters.

Through all of the above help to build closer working relationships between selected Industry Groups in order to reduce duplication and confusion within the Information Communications Industry.

Contact: Tony Richardson, TMForum Director Strategic Liaison, tonyr@tmforum.org
A Rough Mapping of TMF/IGAB Industry Partners

- ebXML
- T1M1
  - tML
  - GTDD
- IPDR
- T1M1/
  - OBF
- W3C
- OMG
- DMTF
- OSS/J
- FORM
- OpenGroup
- IETF
- ANSI
- ITU-T
- ETSI
- 3GPP
- 3GPP2
- TTC

Official liaison established

TeleManagement FORUM™
Overview TMF Next Generation Operations Systems and Software (NGOSS)

• What is NGOSS?
  • A TMF initiative which provides a standardized integration framework based on commercial off-the-shelf information technologies, instead of technologies unique to the telecommunications industry for OSS.

• NGOSS Program - Key Elements
  – Definition of business processes and process models
  – Definition of the systems framework upon which these business solutions will be built
  – Definition of a shared information model that enables different NGOSS components to interoperate
  – Practical implementations and multi vendor demonstrations via a series of collaborative projects
  – Creation of a resource base of documentation, models and code to support developers, integrators and users.
NGOSS Design Principles - Business Context

- OSS Operations and Interactions Driven by agreed Business Processes and Information Flows (*Top-down Business Driven*)
- Framework to support various Industry ‘Actors’ (*TM Forum Business Reference Model*)
- Need to support linkage (Flow - Through) of business processes to provide efficient business operation (*TM Forum “Flow-Through / FAB” Model*)
NGOSS Design Principles - System Context

- Apply Commercial off-the-shelf (COTS) products
- **Technology neutral** architecture
- The separation of Business Process from the system functions.
- Will be built from **distributed components** with well-defined contracts.
- Integrated using a **shared information model**.
- **Service discovery** via component trading on the basis of published contracts.
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What Do We Need from Standards?

- Standards which support real business solutions

- Standards which can be placed within a bigger systems picture and understanding of the positioning of any standards in relation to other appropriate Industry Group efforts

- Standards which are ensured to have practical realization potential – e.g. linkage to the TMF Catalyst program

- Standards with the widest possible industry endorsement

Standards that are interoperable !!!
Thank You!
Backup Slides
Driven by eTOM Business Process Model

- Customer Relationship Management
- Service Management and Operations
- Resource Management and Operations
- Supplier/Partner Relationship Management

- Marketing, Sales and Offer Management

- Enterprise Management
The Business Reference Model

- Customer
- Service Provider
  - Internal Processes
    - E.g. Service and Network Mgmt
  - Network Suppliers
    - E.g. Element Mgmt Systems or Network Equipment
  - Other Providers / Operators
- Customer / Service Provider
- Service Provider / Service Provider
- Service Provider / Network Provider
Typical Fulfillment Activities

Customer

- Pre-order
- Order
- Configure
- Assign
- Install
- Test
- Account build
- Activate

Fulfillment’

‘Assurance’

‘Billing’

Service Provider

Supplier-provided equipment and systems
Service Fulfilment

Note: Security is shown in only one interaction, but applies on every interface.
Service orders to other providers can either be generated by the ordering process or by the service configuration process, depending on the nature of the service ordered by the customer.