ECIMF Business Context
Interoperability

Andrzej Bialecki
ECIMF Project Chair
<ab@getopt.org>

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Interoperability challenge

- Different business cultures
  - Different industry sectors, geographical regions, laws, user communities, corporate cultures, etc…
- Different technical frameworks
  - Different business processes, e-commerce standards, implementations, integration to back-office systems, etc…
- Standards help, sure – there are just too many of them… 😞
  - Fragmented standards help only small user groups, creating large integration costs for the rest of the world
- ECIMF meta-framework addresses these concerns
ECIMF Business Context

- ECIMF Interoperability Model
  - Interop. of technical infrastructures
  - Interop. of business infrastructures

- ECIMF Business Context Modeling
  - Captures economic aspects, based on REA
    - **Resources**: what is traded
    - **Events**: when and how it happens
    - **Agents**: who is involved
    - Agreements & Commitments: legal aspects, transactional nature
  - **Value-chain view of commerce**
    - Chain of business processes
    - Flow of resources between processes

- Important for interoperability
  - **Economic goals, business rules and legal obligations ultimately define the meaning and consequences of information exchange**
ECIMF – eBTWG coordination

- Informal process (email discussions)
- Started from the common use of REA framework
  - Initial ECIMF adoption of REA and UMM
  - ebXML use of UMM Economic Elements (based on simplified REA)
Economic exchange as a central concept
- Recently extended to provide a comprehensive meta-model
- Originally used non-standard modeling notation (now uses UML)
Enterprise script is a series of processes, consisting of exchanges realized with recipes (ordered tasks)
UMM Business Requirements View

- Slightly different, but compatible with REA
- More focused on technical than human aspects
- Provides clear connection with the dynamic aspects
- Uses standard UML diagrams

* simplified, v. N090.R8.x
ebXML Economic Modeling Elements

- Closely followed a subset of UMM-BRV
- Non-normative and disconnected
  - Status of “Technical report”
  - No explicit influence on the BPSS or CPP/CPA formation
- BUT: Very useful worksheets in bpWS
  - Useful for better understanding of the influence of economic aspects
eBTWG: BOTL and BCP/MC work

- e-Business Transitionary Working Group
  - Continuation of ebXML (excluding TRP)
- Business Information Object Types team
- Business Collaboration Patterns and Monitored Commitments team
**CC, BIE, ABIE, BOT…**

- **BOTs consist of:**
  - context-modified CCs
  - business semantics
  - state model (and current state)
Commitments, collaborations and processes use BOTs:

- BOTs help to represent the state of all BIEs processed by each partner, in the appropriate business context.
ECIMF Business Context with BOTs

- Definition of Business Context:

  Business Context is a collection of:
  - Agreements / Contracts defining the Commitments
  - Collaboration Patterns (using Business Processes) to execute commitments
  - Business Objects with their semantics, lifecycle and state, which encapsulate business data and business rules

- Main concepts:
  - Based on REA
  - Incorporates BOTs
  - Defines the relationship of Business Context to Processes and Semantics layers in the ECIMF model
Interoperability: different Business Contexts

- **What is required in traditional business?**
  - Both partners need to agree on:
    - The type of resources exchanged
    - The timing (event sequences/dependencies)
    - The persons/organizations/roles involved
  - Each of the partners needs to follow the commitments under legal consequences

- **Business Context models need to be equivalent**
  - Partners need to play complementary roles
  - Expected resources need to be equivalent
  - **Timing** constraints need to be mutually satisfiable
    - The sequence and dependencies between events need to be the same, even though the individual interactions may differ
  - **Transaction** boundaries need to be preserved
    - Especially those, which cause legal consequences
  - Both parties need to receive **business data** that is mandatory and sufficient to satisfy their internal processes
Applying Business Context models

- Business Context Models help to understand business-related constraints in integration scenarios:
  - Economic exchange view
    - Events sequence constraints
    - Stock management constraints
    - Legal constraints
  - Business process view
    - High-level transaction boundaries
    - Relationship to business activities
    - Relationship to business documents
  - All above aspects will limit the degrees of freedom in other integration layers
Example Business Context models

Customer’s view

Shipping Agent’s view

Example taken from ECIMF-POC document
- see complete detailed analysis there

These two models match - “let’s have a deal!”
Example: a Business Context model

- Customer and RentalAgent follow the same collaboration protocol
- Customer, RentalAgent and Cashier execute commitments according to the Contract
- Rental occurs first, and then CashReceipt (within time constraints)
- The transaction boundaries are related to Events (and legal constraints)
Example: Application of the models

- **Business Context Equivalence:**
  - Both partners play complementary roles
  - Both partners expect first Rental, then CashRcpt
    - They still need to agree on the exact timing!
    - The collaboration tasks have to be grouped into 2 transactions, which correspond to Events
  - Both agreed to the type of Car and amount of Cash

- **Conclusions from the Business Context model example:**
  - The assessment of needs doesn’t cause any Events
    - I.e. the Customer can repeat this step as many times as he wants without any legal obligations on either side
  - The success of Return Car should depend on success of tasks related to CashRcpt
    - This collaboration (Customer - Cashier) should be recorded in another activity diagram
Business Context & Business Processes

- Business Context determines the business-related constraints, e.g.:
  - timeouts
  - compensation needed for failed transactions
  - relationships between several business processes
  - etc.

- These constraints cannot (easily/at all) be explained at the technical level
**BOTs and Process Mediation**

- BOTs explain requirements for specific business data.
- BOTs allow to follow the state of collaboration.
- BOTs explain how to adjust missing/superfluous data between partners, to cause desired state changes.
- Business Context + BOTs provides good indications how to implement process mediators / brokers.

**Diagram:**

- **Customer (RNIF)**
  - Transaction boundaries (also legal)
  - Payment
  - SecureFlow Invoice
  - SecureFlow RemAdv

- **Process Mediator**
  - SecureFlow QuoteReq
  - SecureFlow QuoteConfirm
  - SecureFlow POReq
  - SecureFlow POConfirm

- **Shipping Agency (EDI)**
  - Transaction boundaries (also legal)
  - SecureFlow REQUOTE
  - SecureFlow QUOTES
  - SecureFlow ORDERS
  - SecureFlow ORDRSP
  - SecureFlow INVOIC
  - SecureFlow REMADV
  - SecureFlow APERAK
  - SecureFlow CTRL

**Additional Notes:**

- **Customer (RNIF)**
- **Process Mediator**
- **Shipping Agency (EDI)**

**Key Terms:**
- SecureFlow
- QuoteReq
- QuoteConfirm
- POReq
- POConfirm
- REQUOTE
- QUOTES
- ORDERS
- ORDRSP
- INVOIC
- REMADV
- APERAK
- CTRL
Summary

- ECIMF Business Context concept ties together eBTWG CCs, BOTs, Collaborations and Commitments
- eBTWG work on business modeling fits well with the 4-layer model of ECIMF, and provides a detailed view of each layer
Further information

- ECIMF Project Information Center
  - http://www.ecimf.org

- UN/CEFACT eBTWG
  - http://www.ebtwg.org