ebXML Technical Orientation

San Jose, CA USA

Monday, 7 August 2000

Agenda

Welcome & Introductions

Introduction to ebXML

ebXML Requirements

ebXML Scenarios

Business Process Modeling & Metamodeling

Core Components Methodology & Results

Core Component Vertical Validation Projects

Transport, Routing & Packaging

ebXML Proof-of-Concept

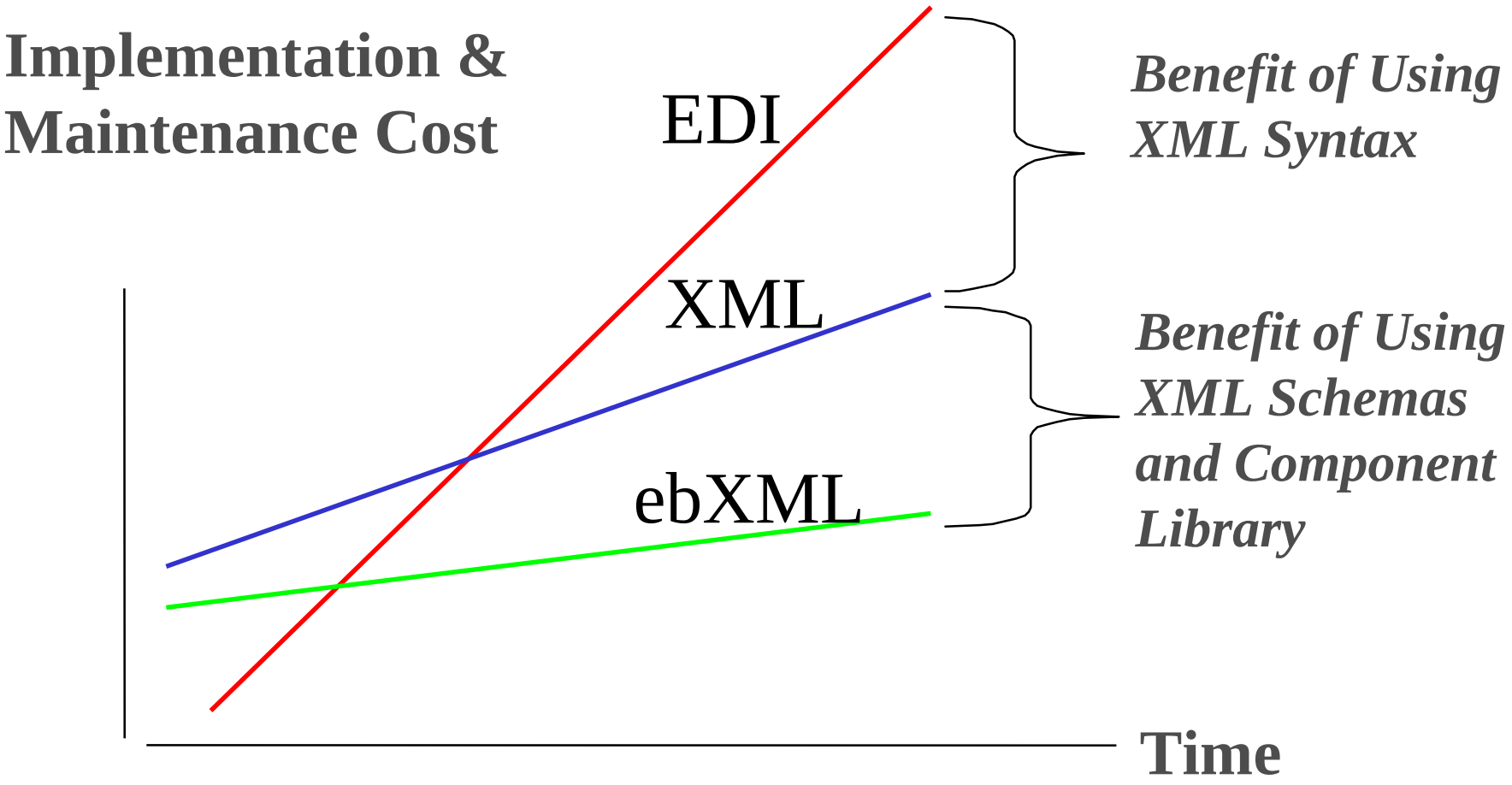
ebXML Agenda for San Jose

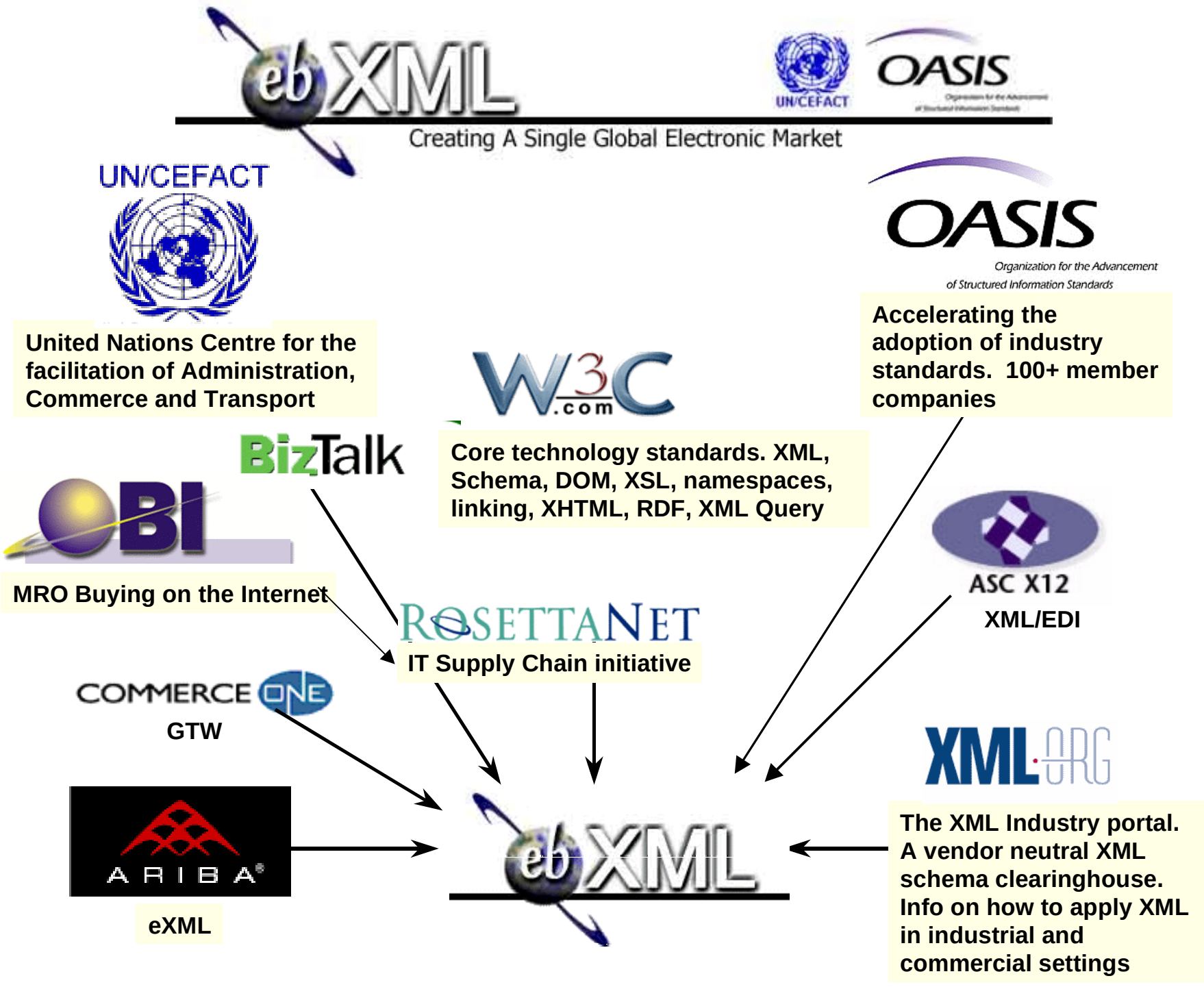
Introduction to ebXML

Melanie McCarthy

Creating A Single Global Electronic Market

The Economic Analysis of XML




ebXML
UN/CEFACT
OASIS
Creating A Single Global Electronic Market
UN/CEFACT
United Nations Centre for the facilitation of Administration, Commerce and Transport
OASIS
Organization for the Advancement of Structured Information Standards
Accelerating the adoption of industry standards. 100+ member companies
W3C.com
Core technology standards. XML, Schema, DOM, XSL, namespaces, linking, XHTML, RDF, XML Query
BizTalk
OBI
MRO Buying on the Internet
ROSETTANET
IT Supply Chain initiative
ASC X12
XML/EDI
COMMERCE ONE
GTW
XML.ORG
ARIBA
eXML
ebXML
The XML Industry portal. A vendor neutral XML schema clearinghouse. Info on how to apply XML in industrial and commercial settings

ebXML Mission

To provide an open XML-based infrastructure enabling the global use of electronic business information in an interoperable, secure and consistent manner by all parties.

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The “Customer”

Why Business is ***Very Interested*** in an XML e-commerce solution

- $ Optimized for easy programming
- $ Relatively inexpensive
- $ Message format easily interpretable
- $ Adaptable to “new programming” languages (i.e. JavaScript, Perl)

ebXML Objectives

- Infrastructure
- Global
- Interoperable
- Secure
- Consistent

ebXML Requirements

Michael Rawlins

Requirements Specification

- Approved at the May Meeting
- Foundation encompasses:
  - General Business Requirements
  - Technical Framework Requirements
  - Organizational Requirements
  - Organizational and Procedural Requirements

General Business Requirements

- Developed for final solution, not just framework
- Example areas addressed:
  - Conducting business electronically
  - Globalization
  - Useability/Interoperability
  - Security, legal, digital signatures

Technical Framework Requirements

- High level requirements in each area:
  - Requirements, Architecture
  - Registry & Repository
  - Business Process and Core Components
  - Transport, Routing, & Packaging

Organizational & Procedural

- Requirements for how ebXML works
- Requirements for what happens after 18 months is over

Current Work Plan

- Work in progress:
  - Requirements Traceability Matrix
  - Promotion to international standards
- New work item
  - Trading partner profile requirements
- Updated plan will be on team web page

Skills and Interests Needed

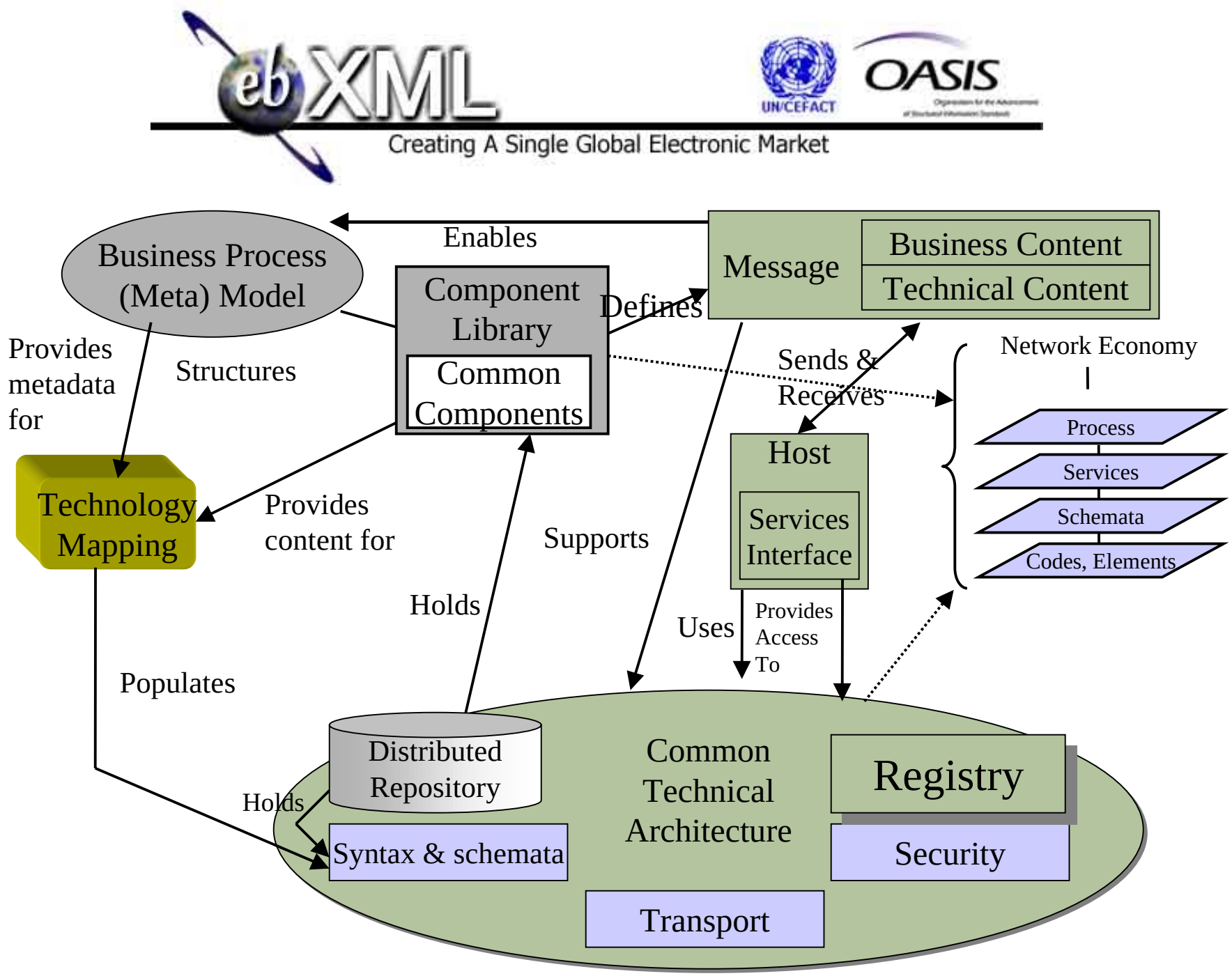
- Orientation toward requirements
- Problem domain expertise
- Modeling expertise

ebXML Run time scenarios

Duane Nickull

Why XML

- Extensible Markup Language
- Not a fixed set of Elements (HTML)
- Allows data to be smart (declarative)
- Extensible (elements, namespaces)
- Widespread adoption & endorsement
- Interoperability is now possible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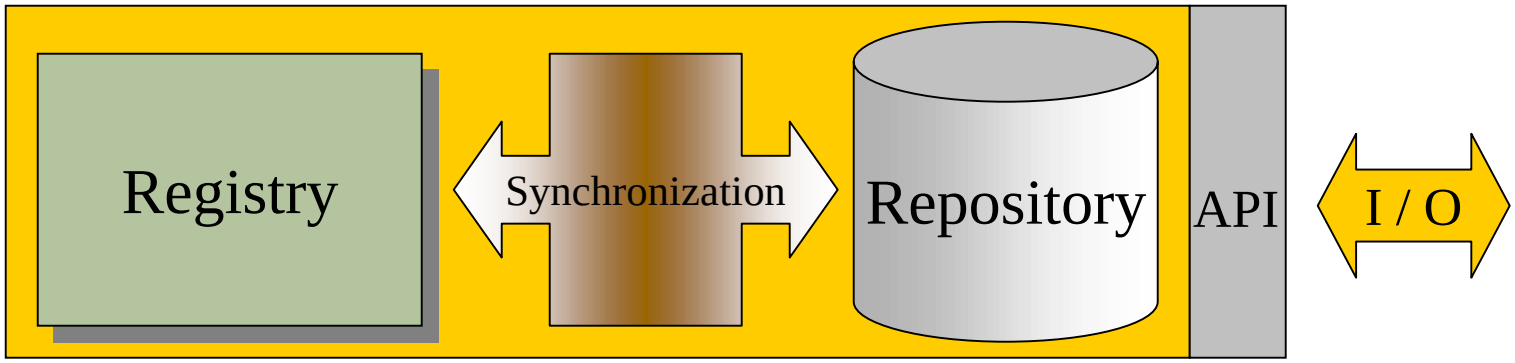
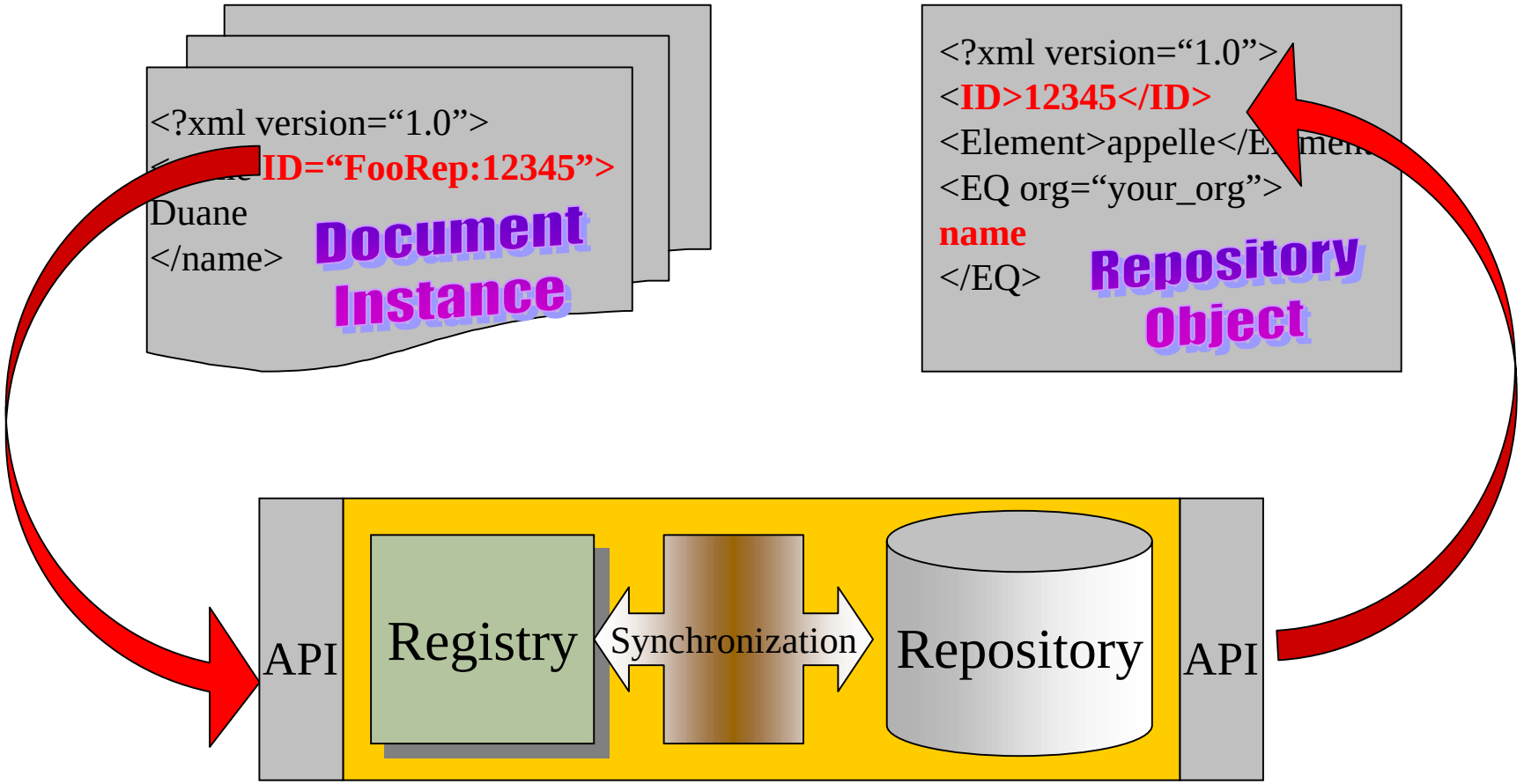
Business Process (Meta) Model
Enables
Message
Business Content
Technical Content
Component Library
Common Components
Defines
Provides metadata for
Structures
Sends & Receives
Network Economy
Process
Services
Schemata
Codes, Elements
Host
Services Interface
Technology Mapping
Provides content for
Supports
Holds
Uses
Provides Access To
Populates
Distributed Repository
Holds
Common Technical Architecture
Registry
Security
Syntax & schemata
Transport

- At the heart of ebXML is a powerful system of Registries and Distributed Repositories.
- Some repository objects are Core Components and some describe Business Process.
- It is important that we can reference Objects (CC) from Business Process Layer at the Element Level.



- Elements in document instances contain pointers to RO's



ebXML Metadata and Objects

- Two basic types:
  - Data elements – (nouns)
  - Business Processes – (verbs)

ebXML Core Components

- Core components are Data Elements[1] of the component library that are common to multiple business domains.
- Vocabularies (eg. xCBL 2.0) contain elements that may be semantically identical to some of the common core components. Examples can be an <address> element on a xCBL invoice and the <partyAddress> on a Visa XML Invoice.
- Core Components must have contextual identity at run time
  - i.e. PurchaseOrder(name) != Invoice(name)

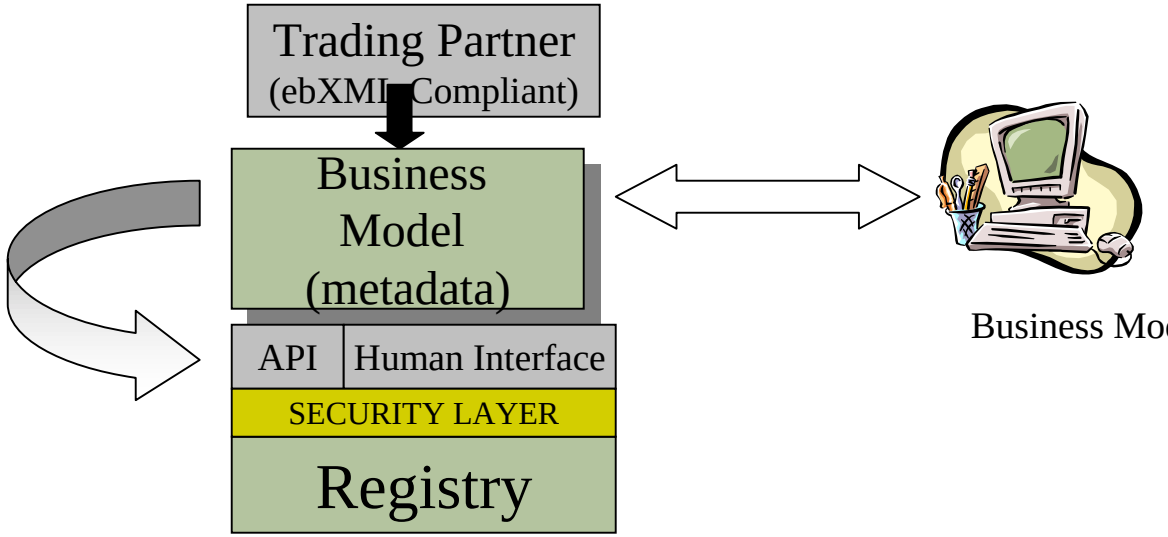
• Data Element is defined in the ebXML Glossary as of 07.21.00 while Core Component is not defined, it is presumed to be similar in meaning to “Data Element”

ebXML Business Process

- BP describe document choreography and overall process interfaces.
- Identify which components need to be present to ensure requirements of both parties are being met.
- Examples can be “Send an Invoice” or “Submit a Purchase Order”

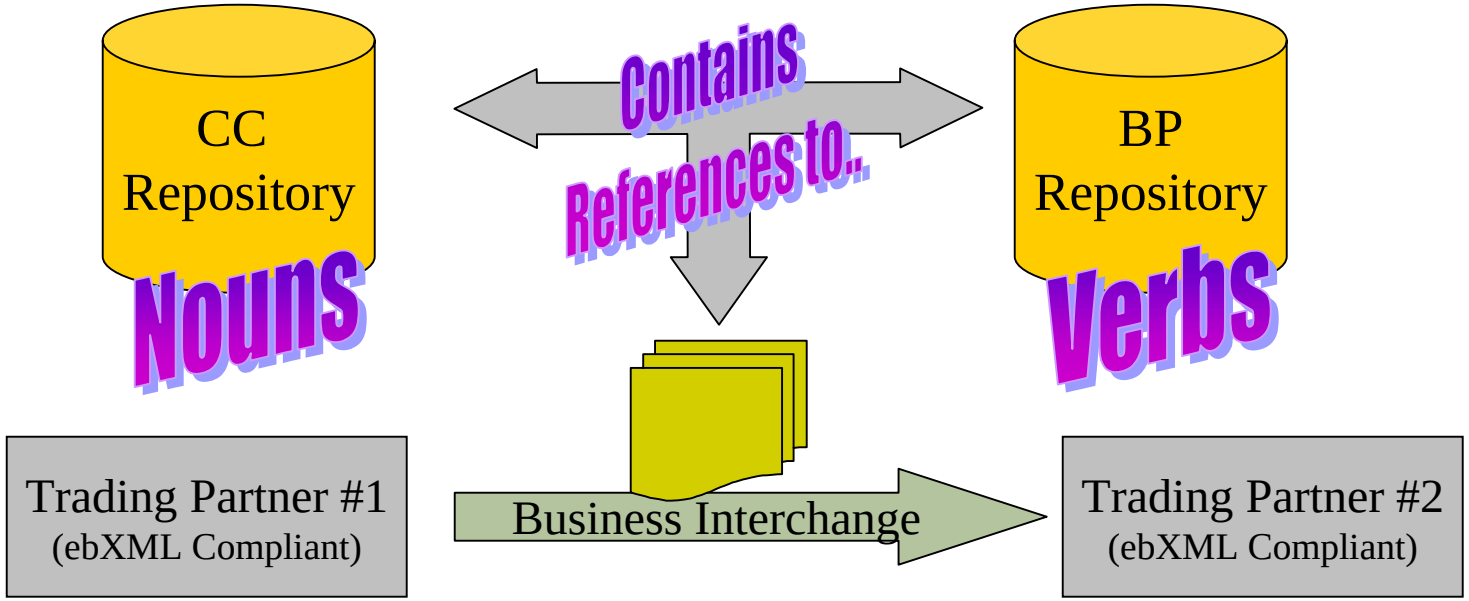
How ebXML Trading Partners Interact

- A Trading Partner can create a model of its business and business objects. Isn't always necessary – ie. SME's can buy packages from ASP's which will likely use existing vocabularies (xCBL, cXML et al).
- A Trading Partner can also identify and use components/processes used by its partners.



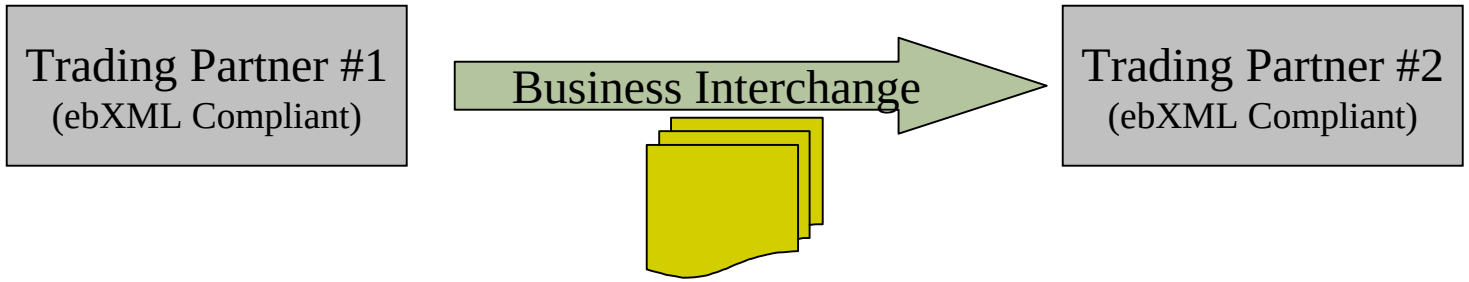
How ebXML Trading Partners Interact (1)

- The transaction contains abstractions of two layers – the Core Components (noun) layer and the Business Process (verb) layer.

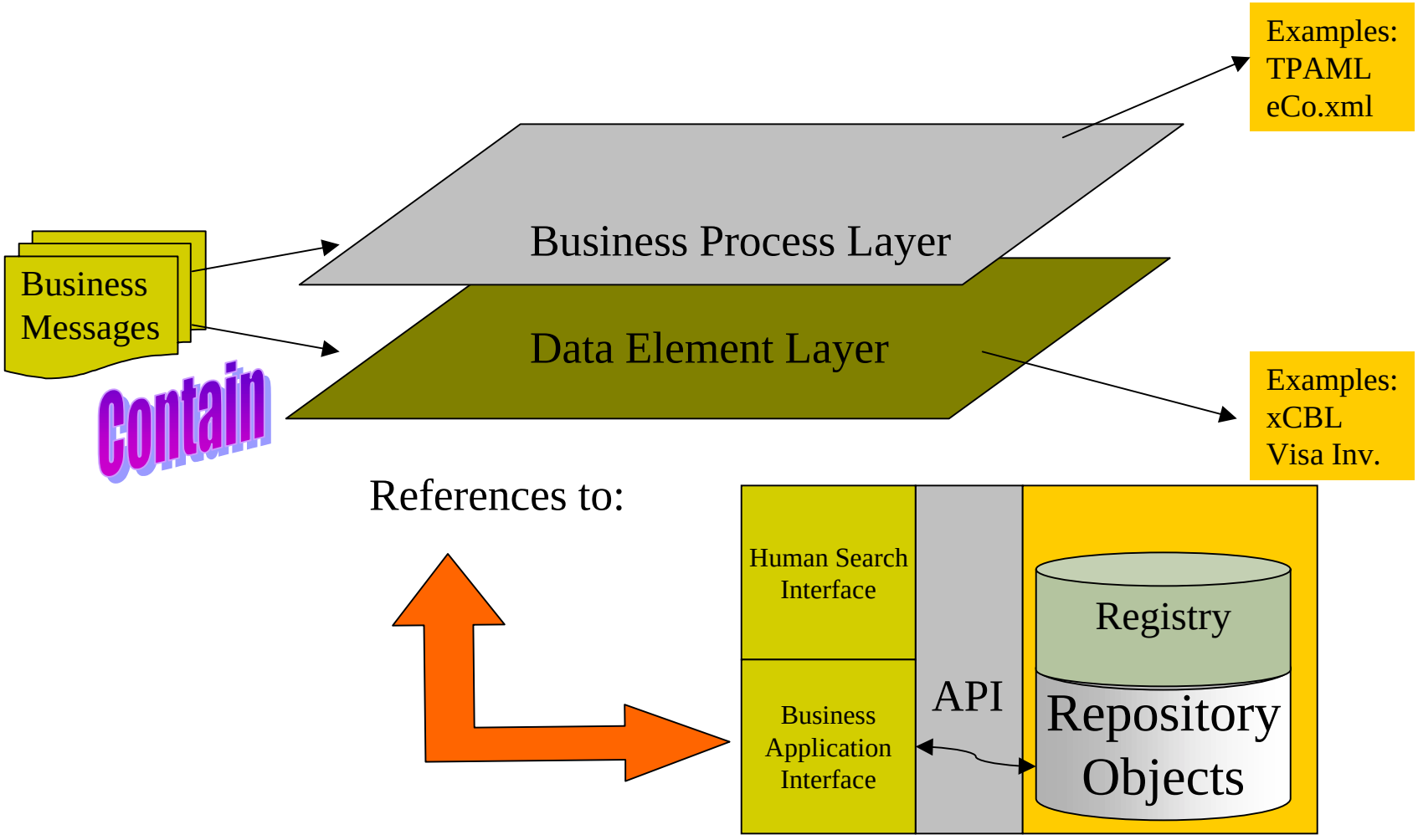


How ebXML Trading Partners Interact (2)

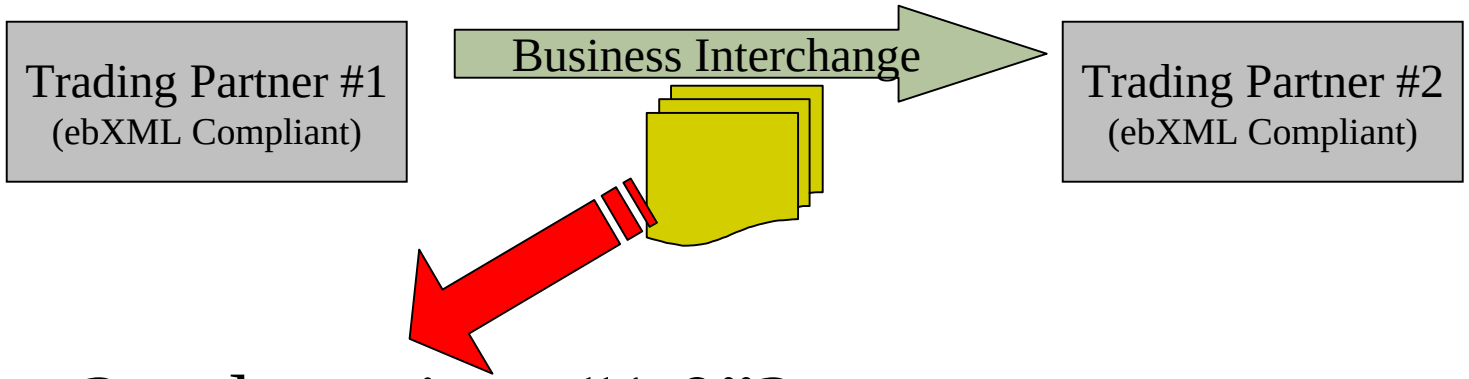
- The Trading Partner sends a business transaction to another ebXML capable trading partner.



Business Message References



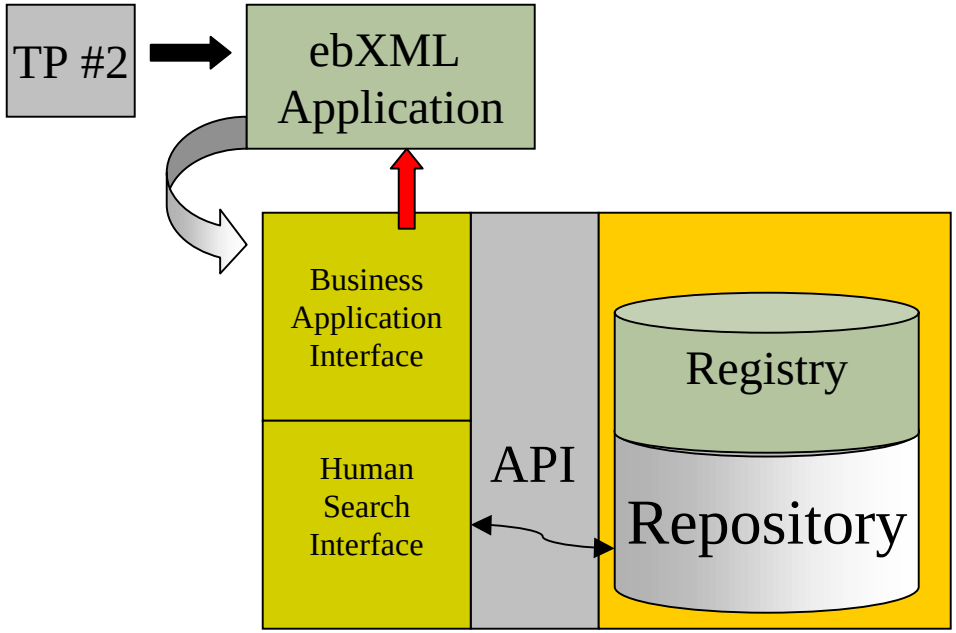
How ebXML Trading Partners Interact (3)

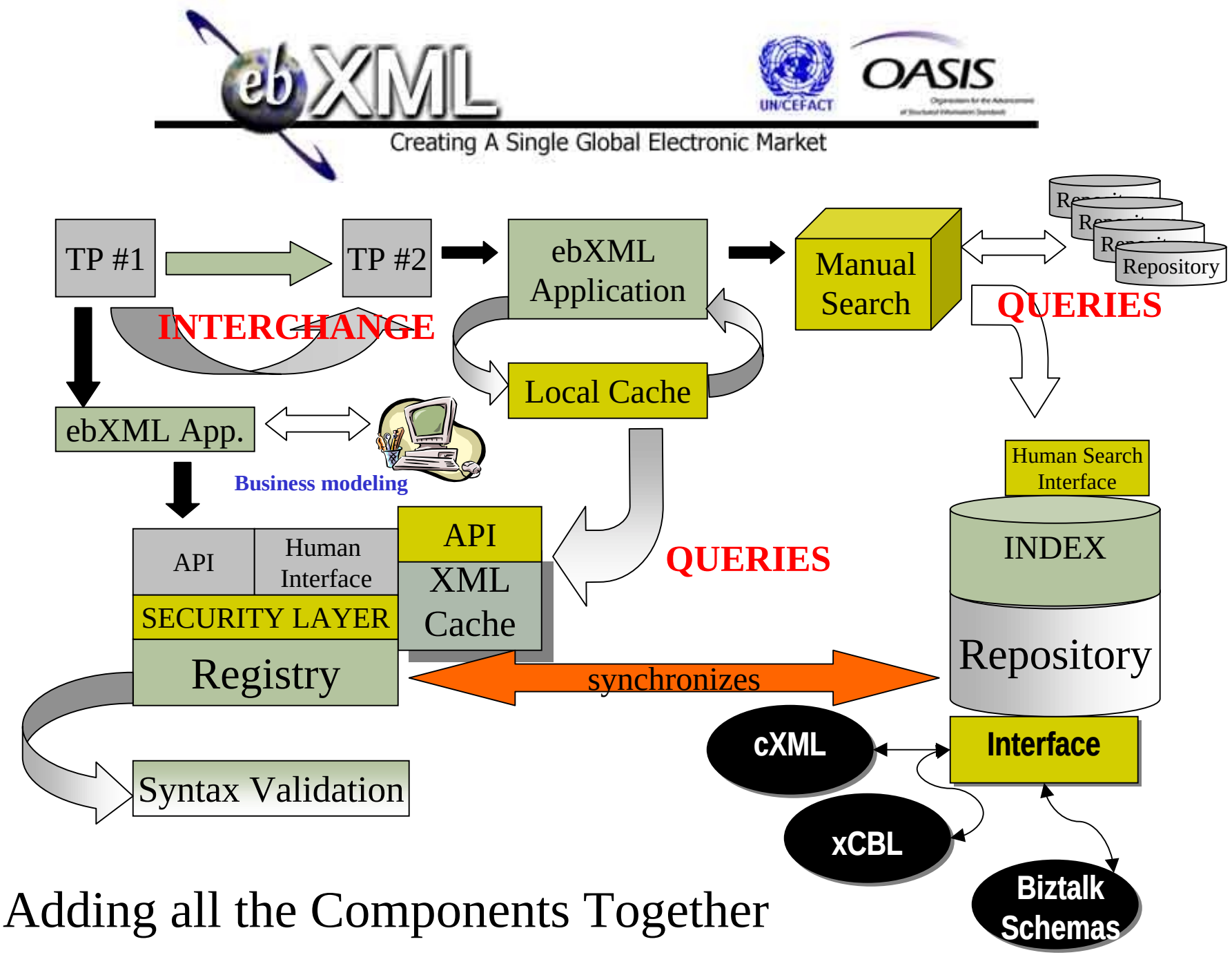


- <?xml version="1.0"?>
- <purchase_order GUID="678">
- <Name GUID="12345">Duane</Name>
- …

How ebXML Trading Partners Interact (4)

- If the object is available, the information can be acted upon.
- If it is not found, the ebXML Application must then check the Registry/Repository via a query mechanism.
- If a reference can be found, the information can now be acted upon.





Adding all the Components Together

Some Final Thoughts..

- ebXML to build an open architecture, not a "Standard"
- Truly interoperable and Extensible (Global)
- Includes everyone from SME's to Fortune 1000

Thank you!

Duane Nickull

www.xmlglobal.com

Business Process
Process Modeling & Meta-Modeling

Karsten Riemer

ebXML Vision

- A global electronic market place where enterprises of any size, anywhere can:
  - Find each other electronically
  - Conduct business through the exchange of XML based messages
    - Using standard message structures
    - According to standard business process sequences
    - With clear business semantics
    - According to standard or mutually agreed trading partner agreements
    - Using off the shelf purchased business applications

ebXML

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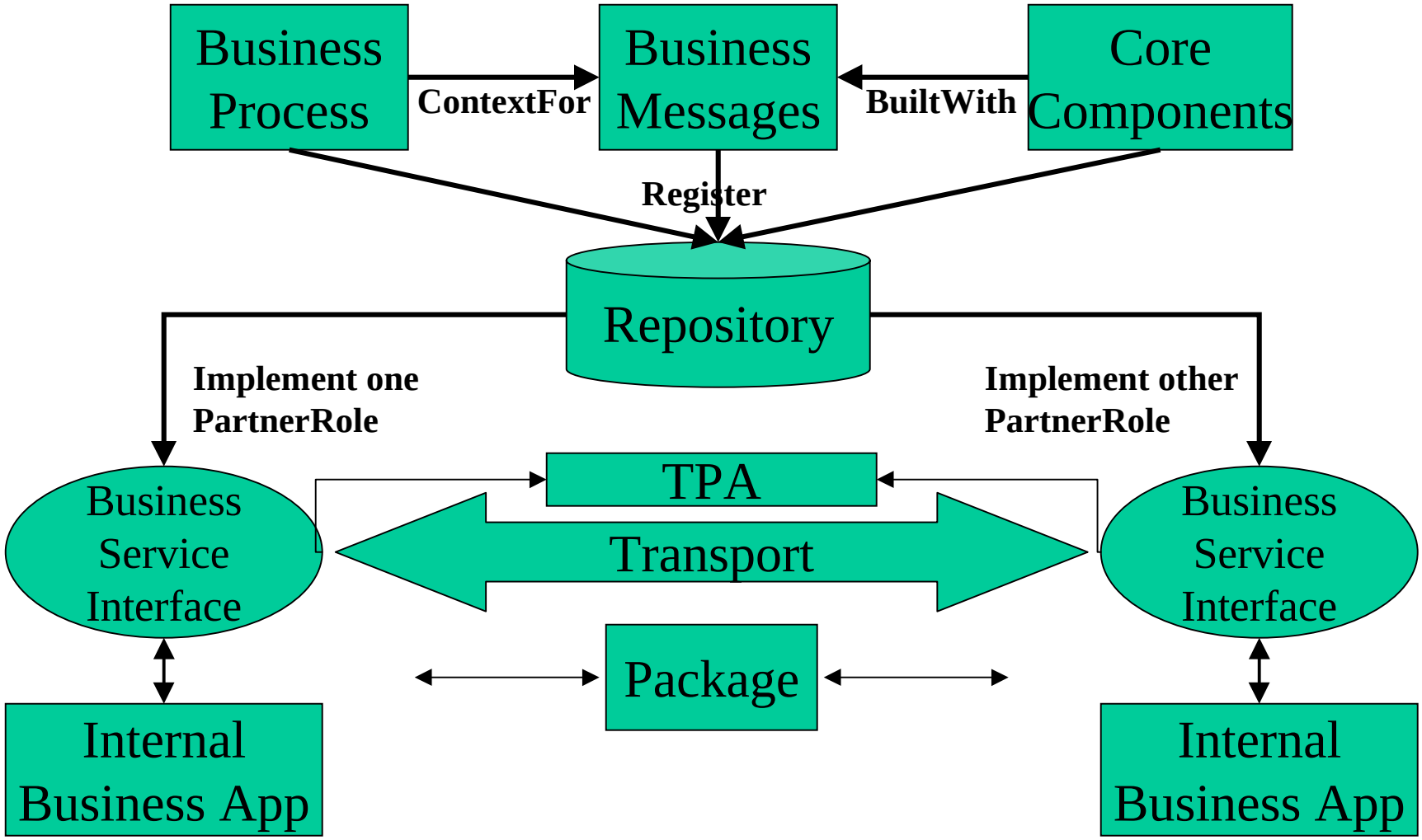

ebXML BP objectives

- Provide a framework for registration and discovery of parties and processes
- Provide definition of message exchange sequence in a process
- Provide clear business semantics around message exchanges
- Provide context for message structure definition
- Provide mapping of trading partner agreements to business process definitions

History of ebXML BP

- Survey of existing models/metamodels
  - ECO, RosettaNet, Edifecs, OAG, REA, Swift, TMWG, EDOC, SunIT
- Synthesis into ebXML BP metamodel
- Iterative refinement
- Mapping to Core Components, Transport&Routing
- Synthesis into overall ebXML metamodel

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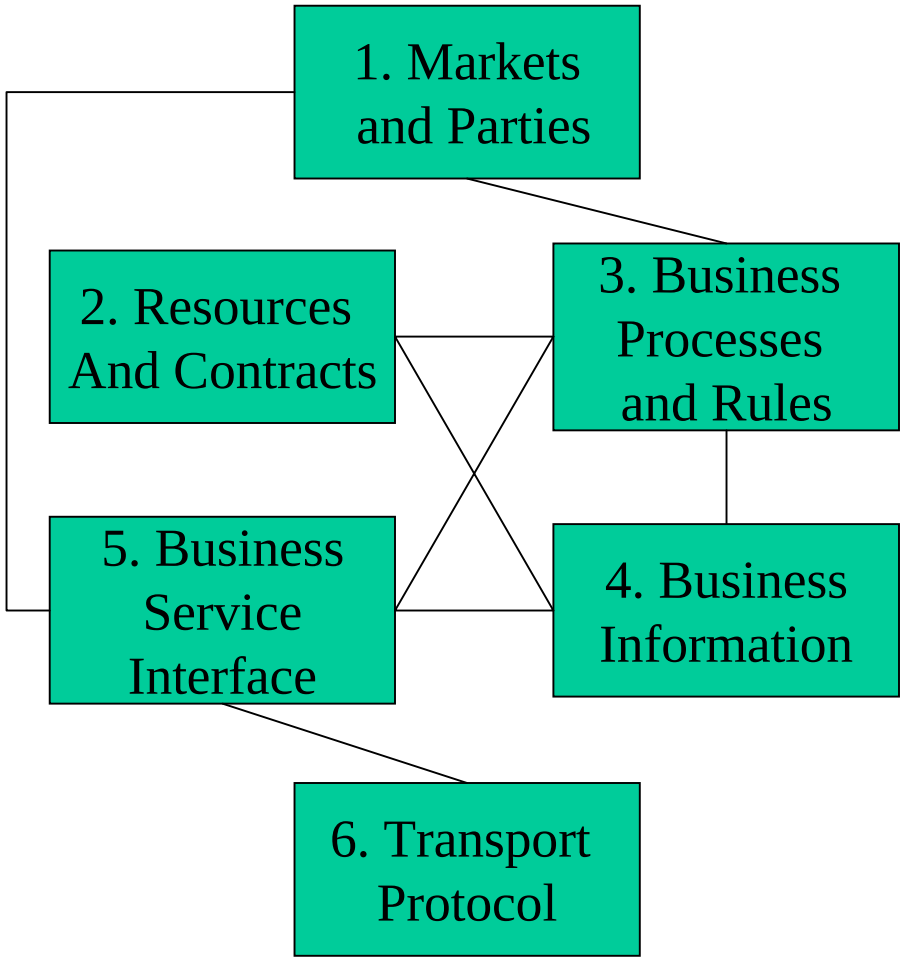
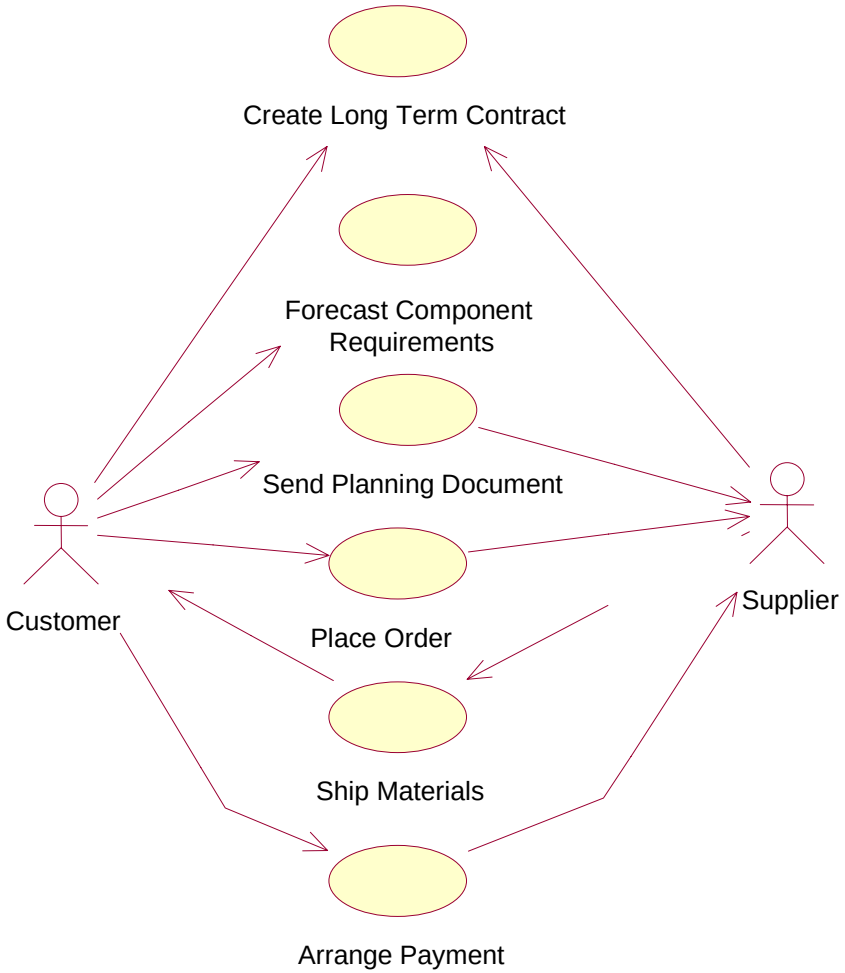
ebXML metamodel

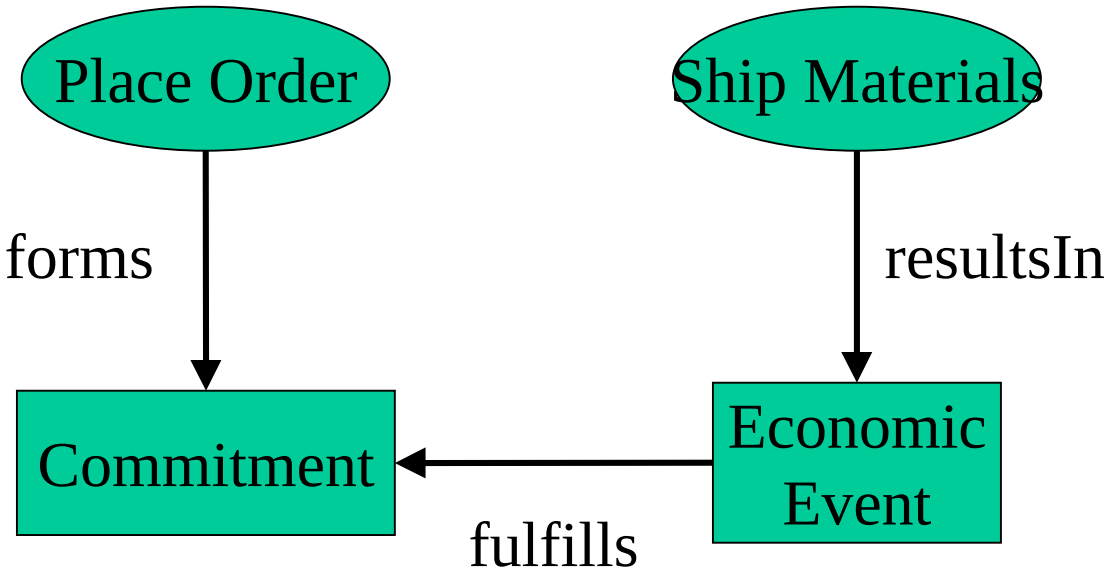
- Relates ebXML Specifications
- Determines repository‘Schema’
- Expressed as a UML profile



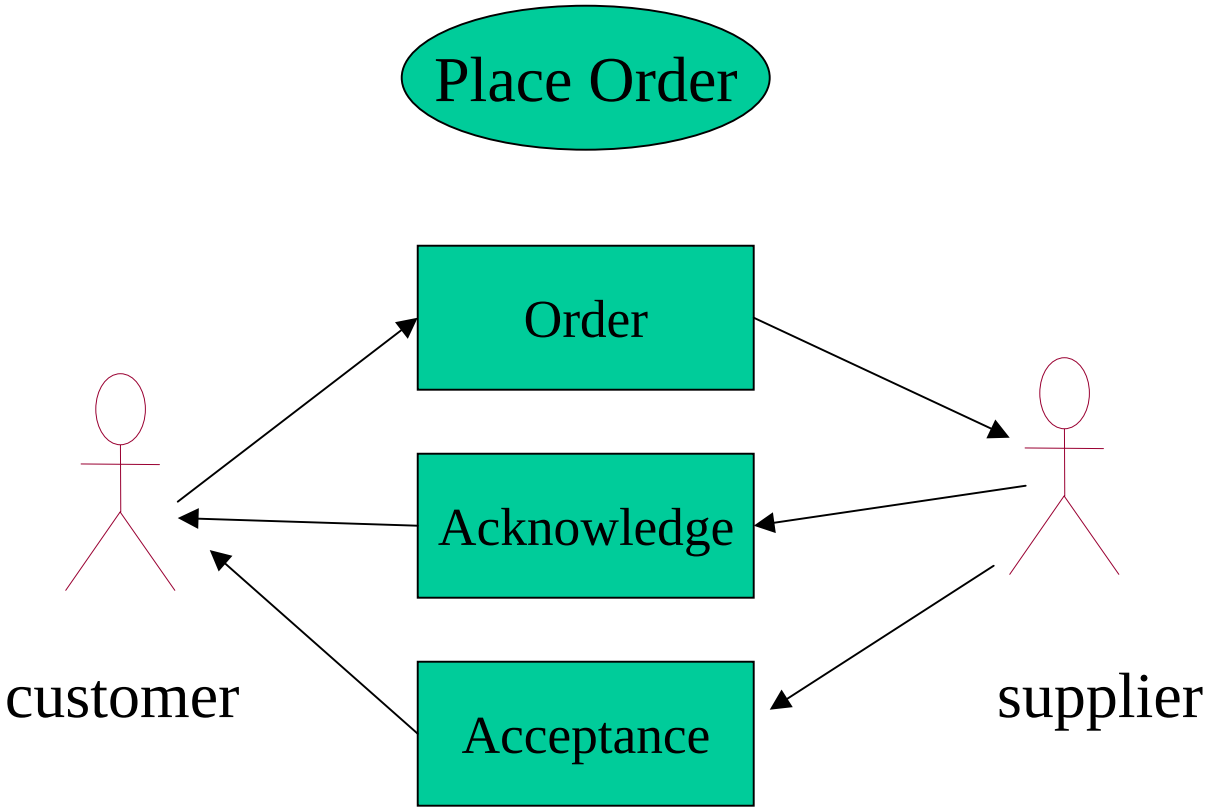
Process Sequence



Business Semantics

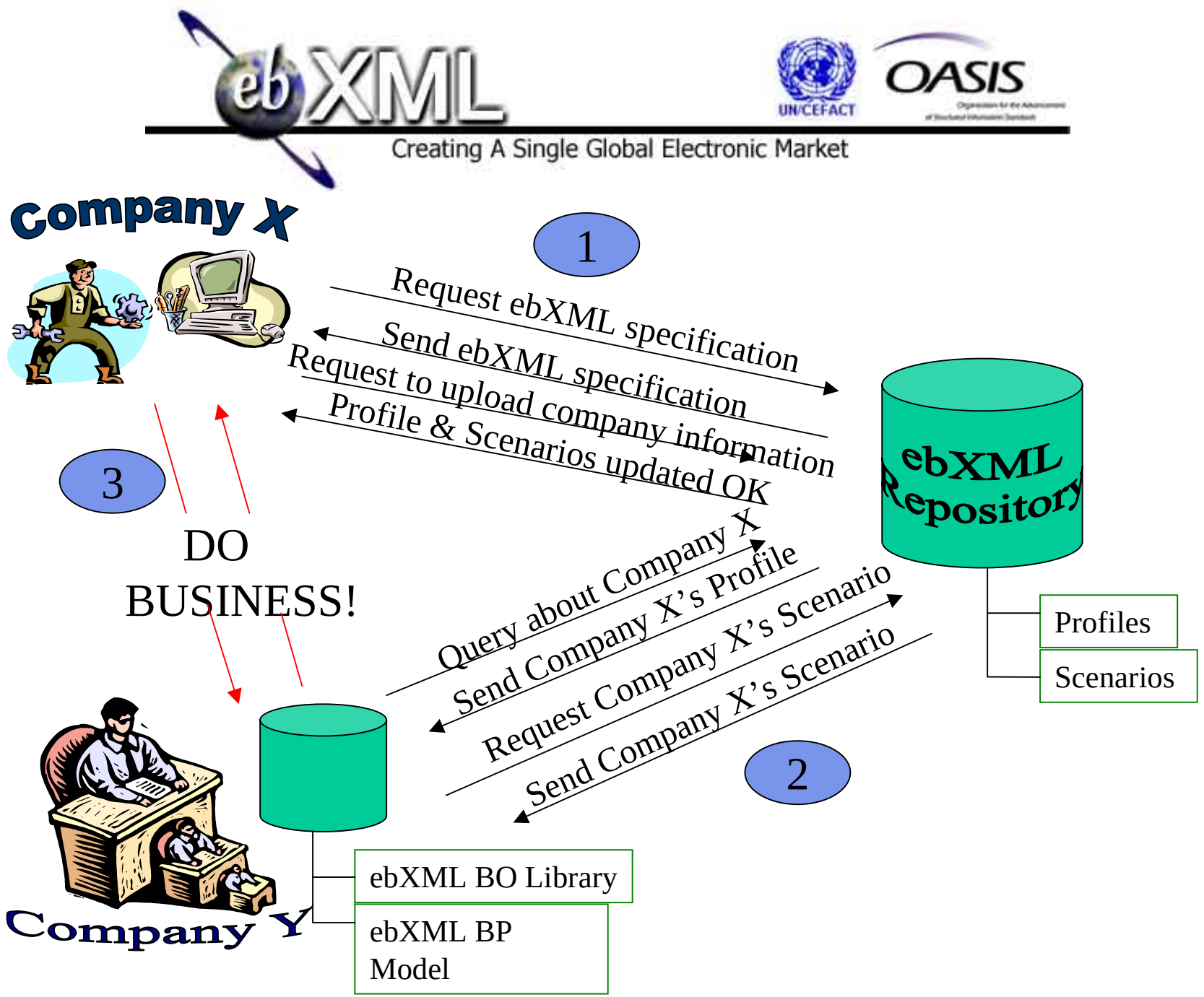


Message Sequence



BP Relationships to CC/TR&P/RegRep

- Provides context for Core Components
  - Message structure depends on market, process type, process step, partner role, economic resource
- Provides “schema” and “classifiers” for Repository
  - Register and discover parties by markets, by resource type, by partner role, by process type, by contract type
  - Register and discover processes by type, by party
  - Discover message structures by process type, by market
- Provides partner roles for TPA part of TR&P
  - Process defines both sides, partner role defines just one side’s responsibility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Company X
1
Request ebXML specification
Send ebXML specification
Request to upload company information
Profile & Scenarios updated OK
ebXML Repository
Profiles
Scenarios
3
DO BUSINESS!
Query about Company X
Send Company X's Profile
Request Company X's Scenario
Send Company X's Scenario
2
ebXML BO Library
ebXML BP Model
Company Y

Scenario - Existing Industry Standard

- Define
  - Standards group aligns process definition to fit ebXML metamodel - Standards group registers process in repository
- Vendor Implementation
  - Software vendor A & B develop Apps each fulfilling a partner role in process
- Partner Implementation
  - Enterprise X implements package A and registers a “Portal” in repository - Enterprise Y implements package B and discovers X’s “Portal” in repository
- Doing Business
  - X and Y exchange messages, each using a purchased package and using each other’s “Portals”

Scenarios – New process definition

- Define
  - Enterprise X defines process to fit metamodel
  - Enterprise X registers process in repository
- Partner Implementation
  - Enterprise X buys or builds app fulfilling one role
  - Enterprise X registers “Portal” in repository
  - Enterprise Y discovers X’s “Portal” in repository
  - Enterprise Y buys or builds app fulfilling other role
- Doing Business
  - X and Y exchange messages, each using a purchased or homegrown package and using each other’s “Portals”

ebXML metamodel in a staged approach

- You may use TPA section without the rest
  - To exchange your own message structures via TRP
- You may use Information section without the rest
  - To define message structures to be used in some other TRP
- You may use Process section without the rest
  - You may optionally define contract semantics of a process
- You may use Market section without the rest
  - To create an independent set of yellow or white pages
- Or: - Use all of them to reach the full vision of ebXML

Example illustrating all of the above

- A young .com decides to become a travel service broker
- Defines a travel profile update process within the travel market
- Defines contractual terms of successful brokered transaction
- Defines required information exchanges
- Registers a “Portal”
- Rakes in the money as users use his “portal”

Summary

- ebXML metamodel holds together BP/CC/TRP
- ebXML metamodel is the “schema” for the repository – provides classifiers
- BP provides process structure and business semantics around information exchanges
- BP provides process “specification” for TPA’s
- BP provides framework for registration and discovery of parties and processes

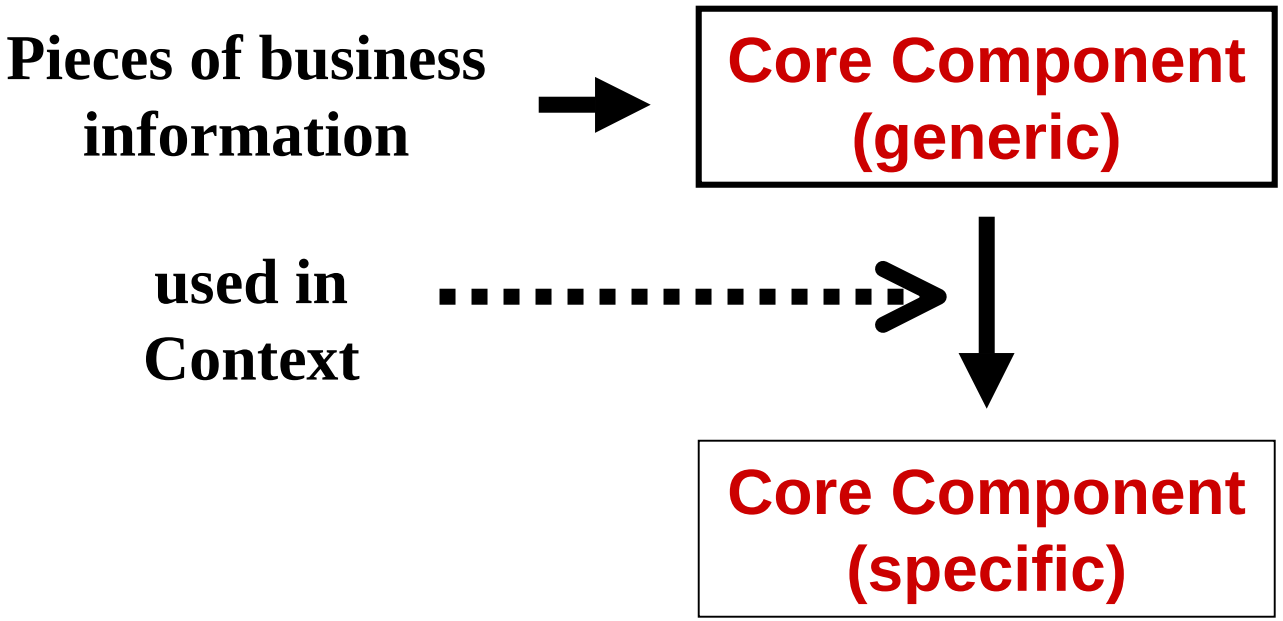
Core Components Methodology & Results

Sue Probert

ebXML Core Components

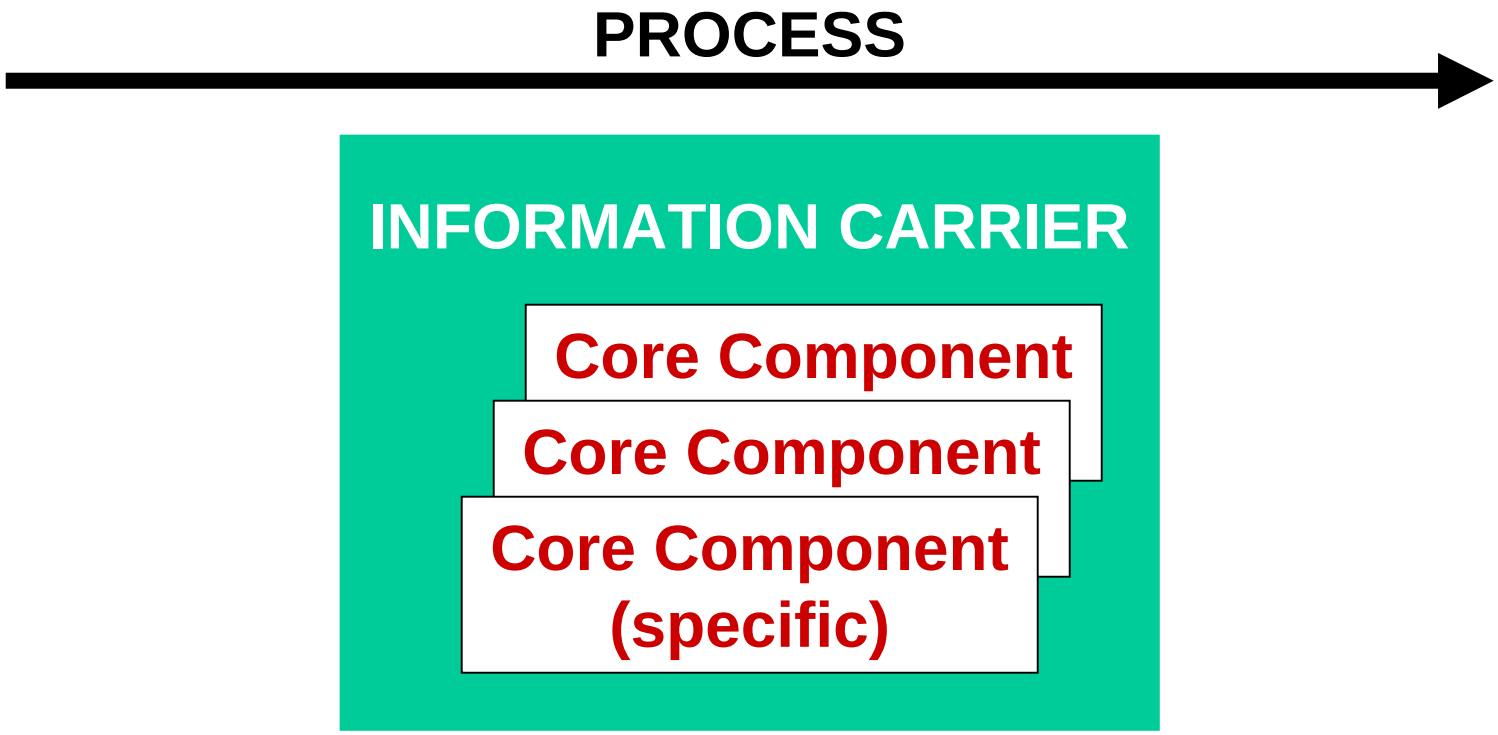
- What are Core Components?
- What part do they play in ebXML?
- Why a new approach/methodology?
- What has been developed?
- What are our goals?
- Where have we got to?
- What next?

What are they?



from Business process modelling and Data analysis

What part do they play?



Why a new approach/methodology?

- To draw on the vast pool of
  - semantics knowledge and experience which is
    - documented in multiple notations
    - based on multiple syntaxes
- To be able to
  - combine these
  - agree on a core set of
    - syntax-neutral
    - well-defined

  global business semantic building blocks

Why a new approach/methodology?

- The resultant definitions can
  - provide a semantics library
  - and enable the realisation of . . .
- Business data exchange models
  - in any past, present or future syntax
  - providing a foundation for interoperability

What has been developed?

- A methodology to
  - identify and model common core components
- A tool for
  - graphically capturing their structures in XML
- For any CC the methodology defines:
  - Entities and their relationships
  - Data elements, their representation and any classifications/code lists
  - Attributes
  - Use Cases/Patterns

Where have we got to?

- Draft methodology defined and published for comment
- Web-based interactive tool developed for collecting definitions and storing in XML format
- Inter-sessional domain workshops have tested draft methodology on an agreed ‘Core’ set of CCs
  - e.g. Party
- Context effects considered
  - i.e. making CCs ‘SMART’
- Re-use and extension methodologies under development
- Relationship with business models explored with BP PT
- Use cases in four business domains investigated
- Compilation of plan for building data element repository
- Demonstrators being planned

What is planned for this week?

- Collate and analyze inter-sessional results
- Refine methodology/tool from experience gained
- Continue collating/defining CCs in domain sub groups
- Further develop CC methodologies for
  - context, re-use, and extensibility
- Complete draft ideas for
  - data element repository structure
  - how to collate contents
- Further develop liaison with BP PT
- Develop liaison with R&R PT

What are the CC PT next goals?

- Enhanced methodology and/or tool(s)
- Further methodology development for
  - context, re-use, and extensibility
- Completed ‘first draft’ ideas for
  - data element repository structure
  - how to collate contents
- Established good liaison
  - with Business Process PT
  - with Registry & Repository PT

Core Components
Vertical Validation Projects

Mary Kay Blantz

Lisa M. Shreve

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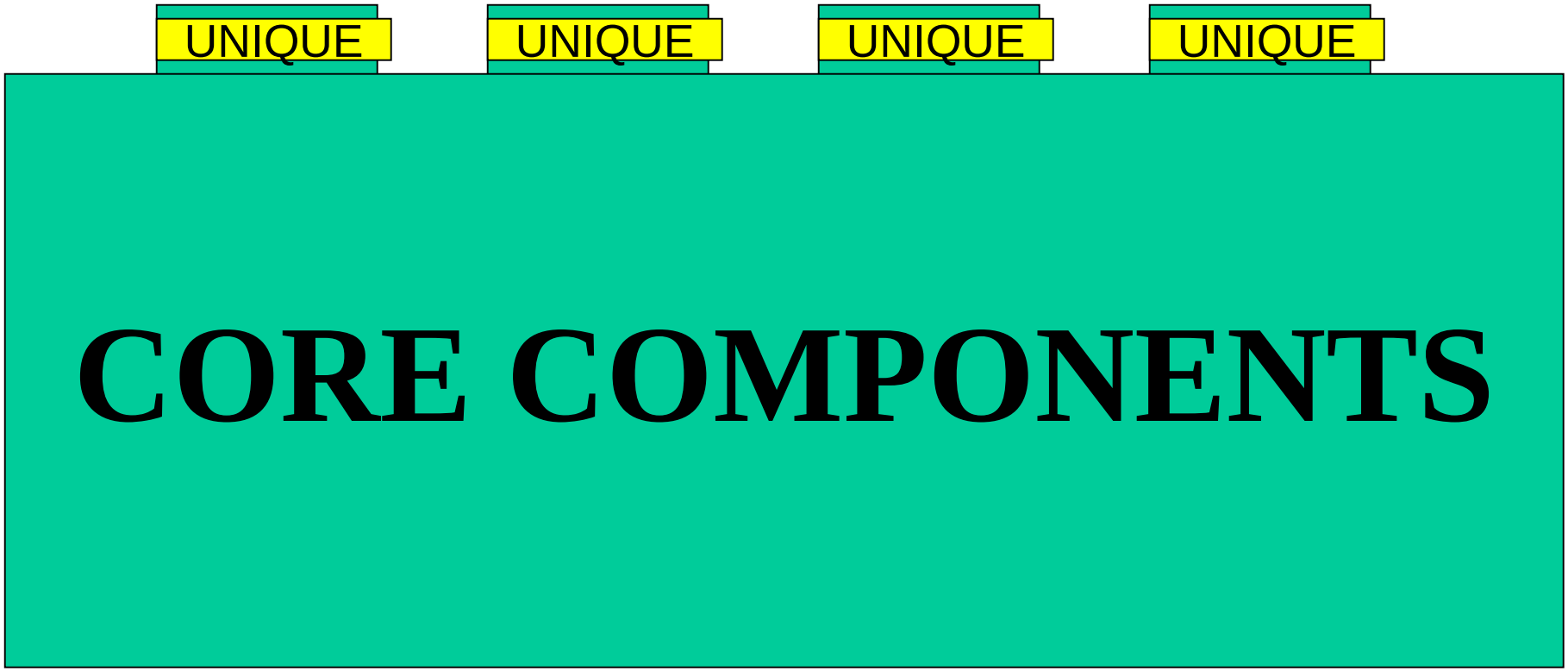
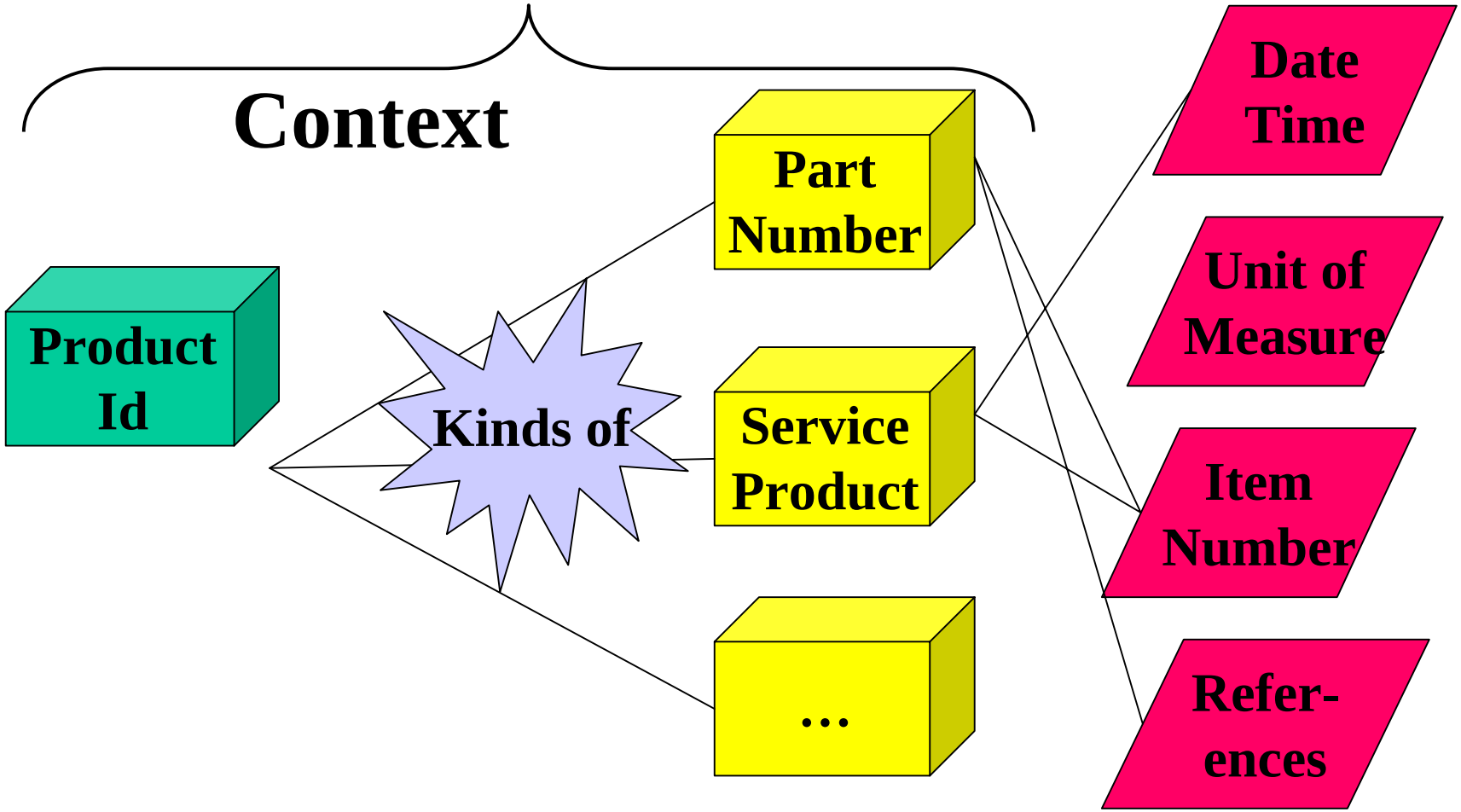
Core Components Workshop



Smart Core Components



What is Context

- Business sub-process
- Industry
- Region/Geography
- Product
- Legislative

Vertical Validation Project Examples

- Materials Management/Automotive
- International Transport
- Travel Industry/OTA
- Finance/Payments & Securities/S.W.I.F.T.
- Retail
- Healthcare
- Insurance

AIAG Work Shop Steps Followed

- Model of the process
- Determine core blocks
- Pick a core block
- Draw a picture of the core block
- Update the spreadsheet
- Give the spreadsheet to the Master Scribe

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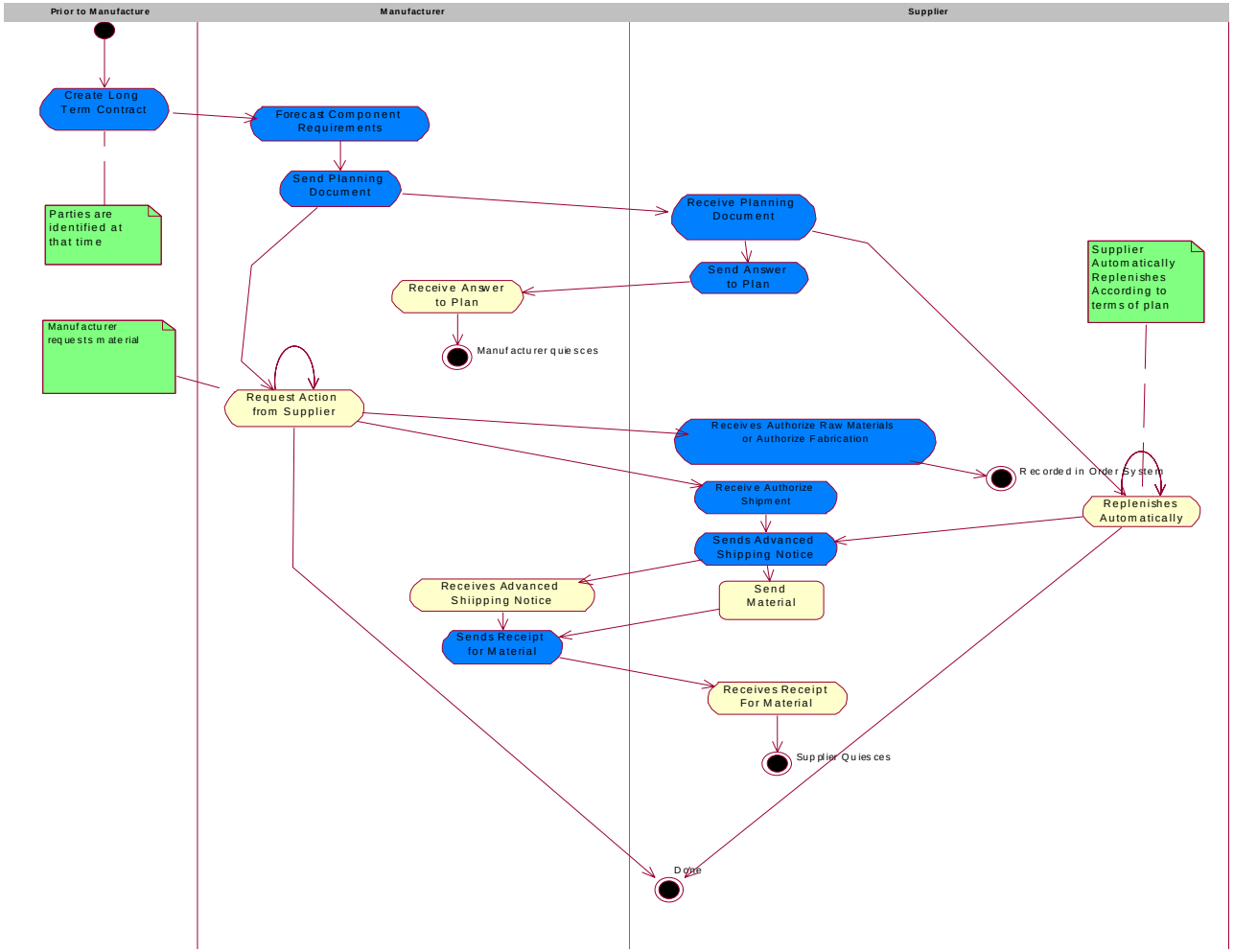
AIAG Process Model



Selected Simple Message Functional Breakdown

- For simple Planning Schedule:
  - Reviewed DELFOR and 830 [for reference]
  - Found functional groups of information
  - Listed each, and chose a name
  - Eliminated unused groups

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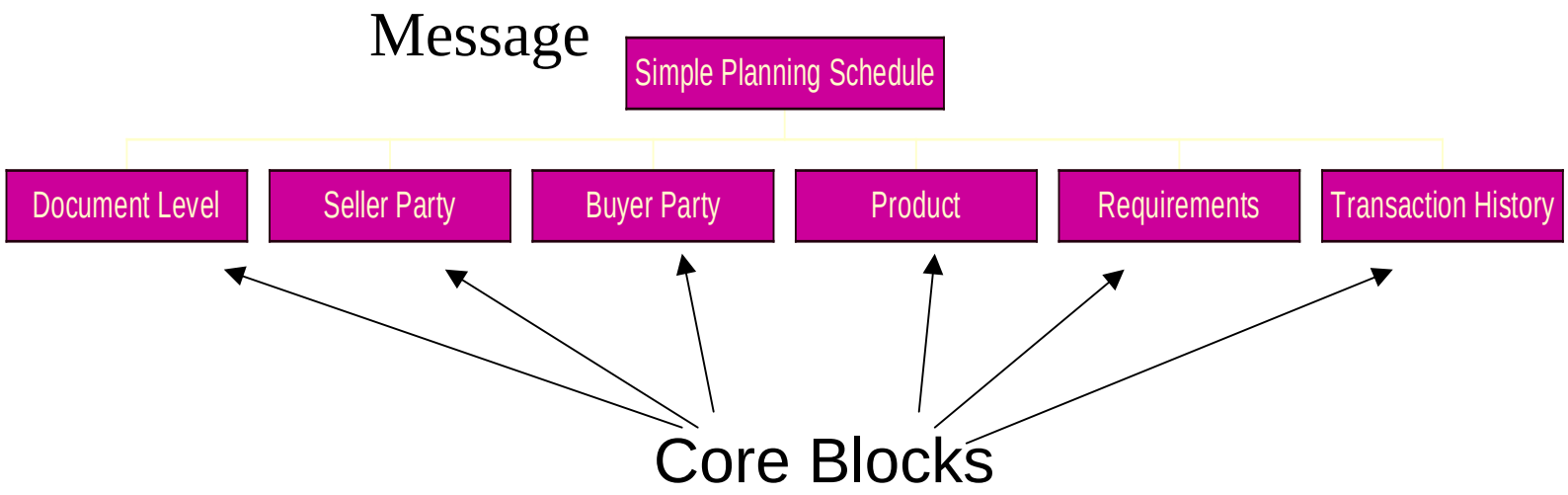
Core Components Planning Message

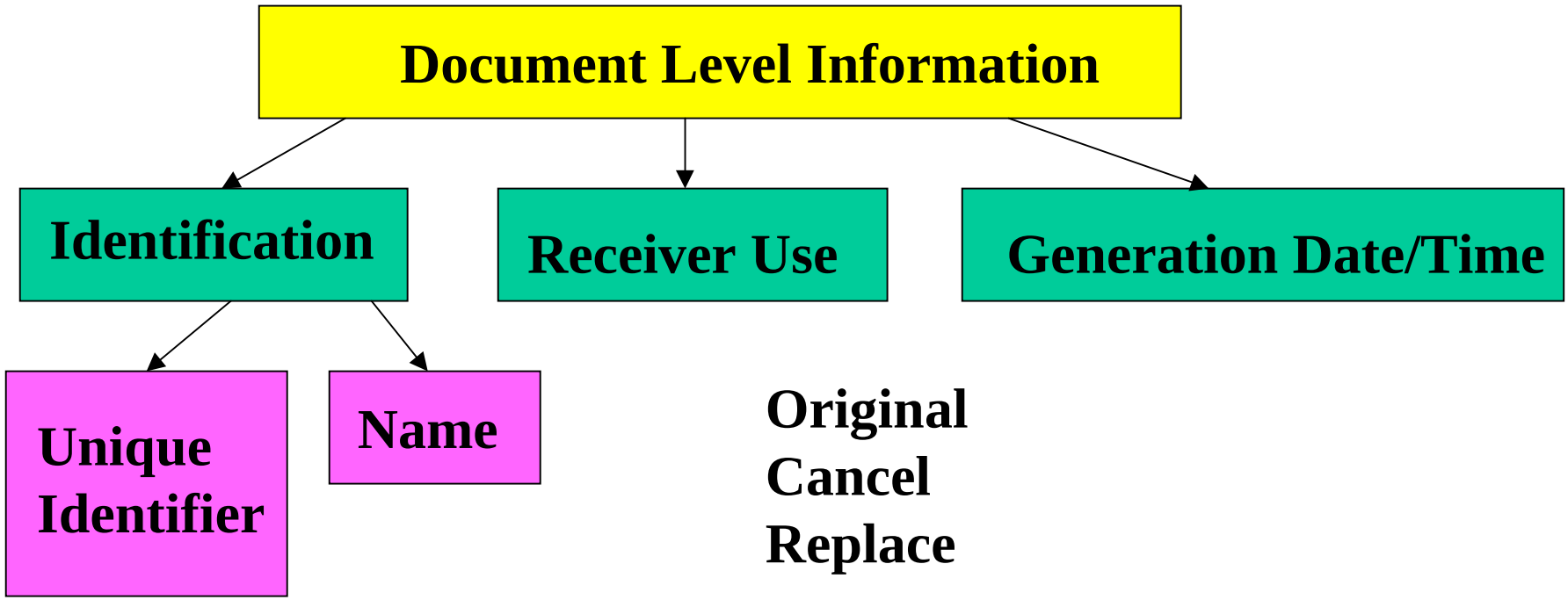
Pick a core block



Determine Composition

Draw a picture of the core block

Draw a picture - any format you find clear



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CB Work Plan

- Compare picture to Smart Core Component list
- Enter Core Block and Smart Core Components
- List ‘new’ Smart Core Components on separate sheet
- Note any disagreements about naming on ice cube

Record Results

Update the spreadsheet

Core Blocks	Smart Core Components	Elements	Usage
Document Level			
	Date/Time	ISO 8601 - yyyymmddThh:mm:ss (GMT)	
		Role/qualifier	Generation
	Identification	ID	Release Number
		Type	Shipment Based
		Purpose	Original
		References	PO Number
		Date/Time	StartDate, EndDate

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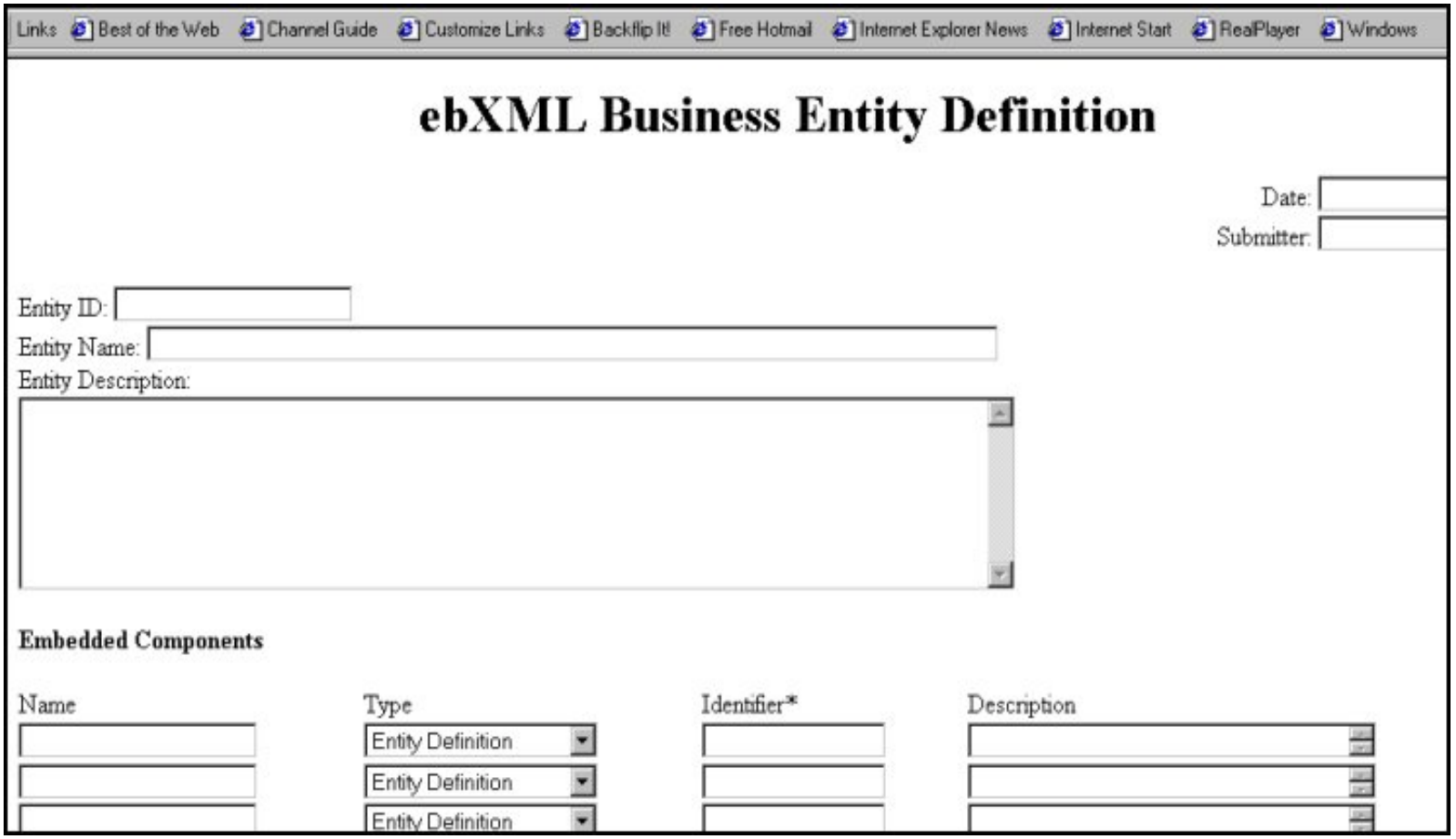
Web Form Tool for Component Model



Transport, Packaging and Routing

Rik Drummond

Leadership

- Team lead – Rik Drummond
- Vice Team Lead – Chris Ferris
- Editor – David Burdett

Requirements

- Reliable messaging
- Transport agnostic
- KISS
- Support for LE and SME
- Use existing standards were ever possible

Deliverables

- Requirements document – complete
- Packaging specification – complete
- Headers, phase 1 - complete
- Headers, phase 2 - in progress
- Security - TBD
- Reliable messaging - in progress
- Trading partner Profile - early in progress

Packaging

- Mime multipart related outer wrapper with two parts
  - Xml headers defined as a DTD, future schema
  - Payload, can be anything

Headers

- Describe source destination, application, and auxiliary elements such as message ID, related message information, etc

Security

- W3C Digital Signature specifications for headers
- S/MIME, PGP or Digital Signature from W3C

Reliable Messaging

- One and only one time delivery
- Persistence
- KISS

Trading Partner Profile

- The configuration of the trading partner profile which will be used by all technical groups to store preferences

Questions?

Proof-of-Concept

Nick Kassem

Goals and Objectives

- Contribute to the specification process
  - Early validation and sanity checking
  - Provide feed-back to the WGs
- Capture mind-share
  - Within the developer community
  - Within the vendor community
- Foster collegial and co-operative working environment, through open
  - collaboration
  - technical discourse

Non-Goals

- Lead the WGs
- Promote vendor products
- Slow down the specification process

Accomplishments to-date

- Successful inter-operability at the Brussels meeting using TR&P + OTA payload
- Establishment of a public test server
- Planning and interoperability event on Wednesday using TR&P + RosettaNet payload
- Plans for TR&P + RR for Tokyo meeting

Finally!

- Join POC-WG and
  - Contribute
  - Critique
  - Collaborate
  - Celebrate

- Contacts
  - nickk@eng.sun.com
  - ebxml-poc list

ebXML Agenda
San Jose

Klaus-Dieter Naujok

Monday, August 7

1:00 pm – 4:00 pm Working Group Meetings

4:00 pm – 5:30 pm Opening Plenary

5:30 pm – 6:30 pm Steering Committee (all team leads)

7:00 pm – 9:00 pm Welcome Reception

Tuesday, August 8

7:00 am – 9:00 am Continental Breakfast

8:00 am – 12:00 pm Technical Coordination (Steering Committee)

9:00 am – 5:00 pm Working Group Meetings

5:00 pm – 7:00 pm Steering Committee (all team leads)

7:00 pm – 9:00 pm Welcome Reception

Wednesday, August 9

Special Presentations

- 13:00 – 14:00 Technical Architecture
- 14:00 – 15:00 tpaML (Trading Partner Agreement Markup Language
- 15:00 – 16:00 Proof-of-Concept Demonstration

Thursday, August 10

7:00 am – 9:00 am Continental Breakfast

9:00 am – 5:00 pm Working Group Meetings

5:00 pm – 7:00 pm Steering Committee (all team leads)

Creating A Single Global Electronic Market

Friday, August 11

7:00 am – 9:00 am Continental Breakfast

9:00 am – 12:00 pm Working Group Meetings

1:00 pm – 3:00 Closing Plenary