Creating A Single Global Electronic Market

ebXML Technical Orientation

San Jose, CA USA

Monday, 7 August 2000

Creating A Single Global Electronic Market

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

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Introduction to ebXML

Melanie McCarthy

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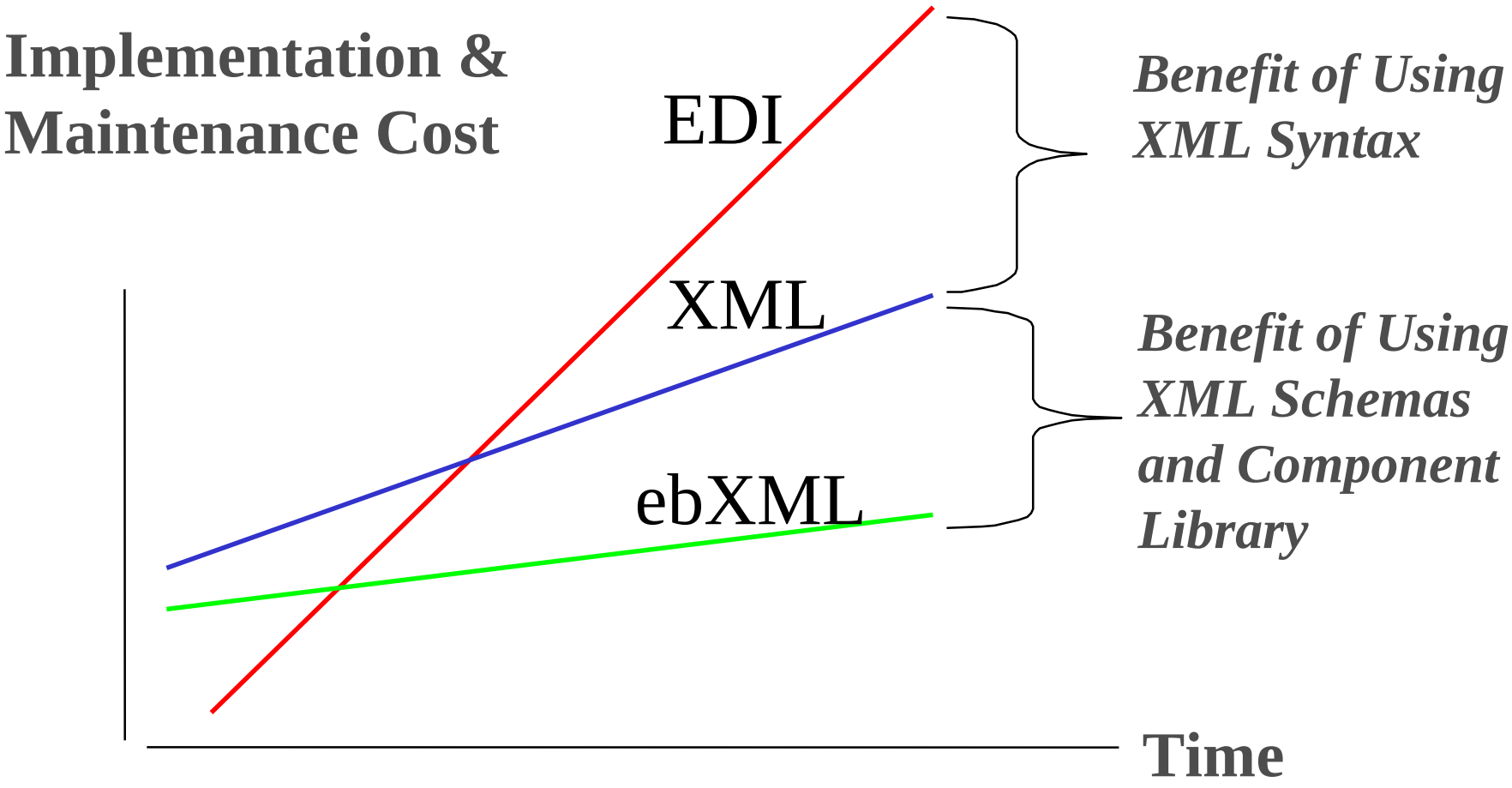
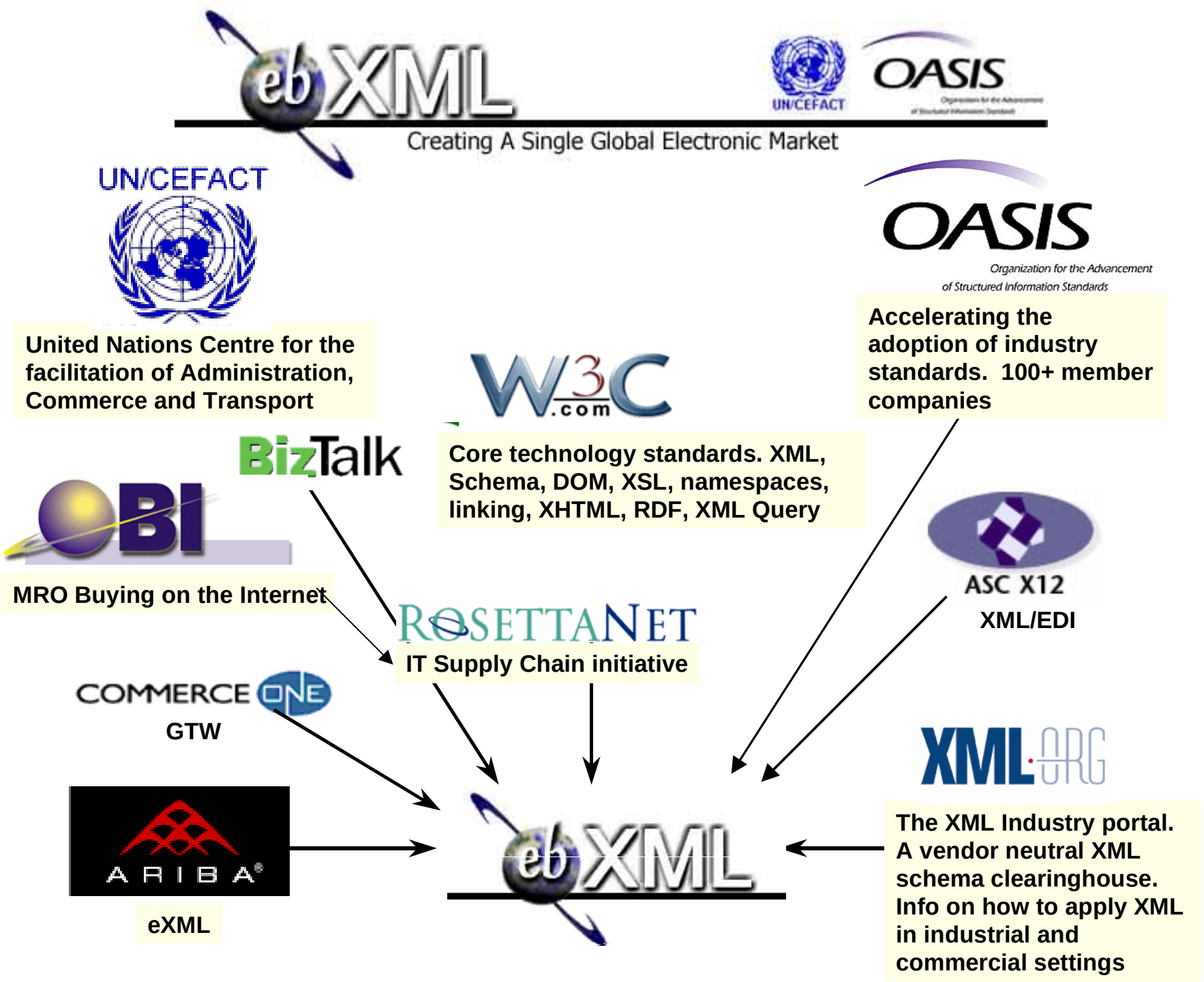
The Economic Analysis of XML

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UN/CEFACT
OASIS
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
ASC X12
XML/EDI
ROSETTANET
IT Supply Chain initiative
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

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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.

ebXML

UN/CEFACT

OASIS

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The “Customer”

Scaleable

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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)

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ebXML Objectives

- Infrastructure
- Global
- Interoperable
- Secure
- Consistent

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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

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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

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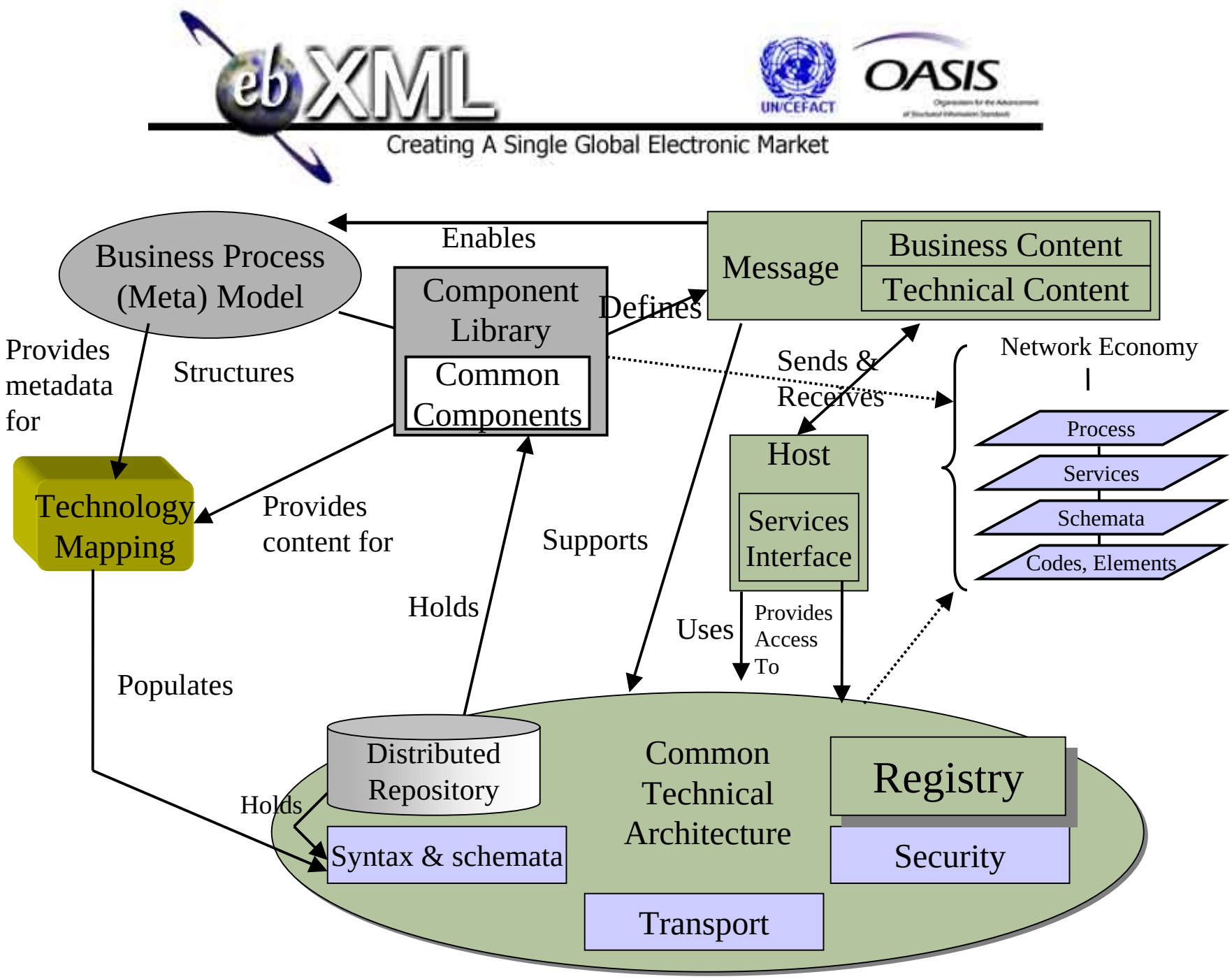
ebXML Run time scenarios

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
Syntax & schemata
Common Technical Architecture
Registry
Security
Transport

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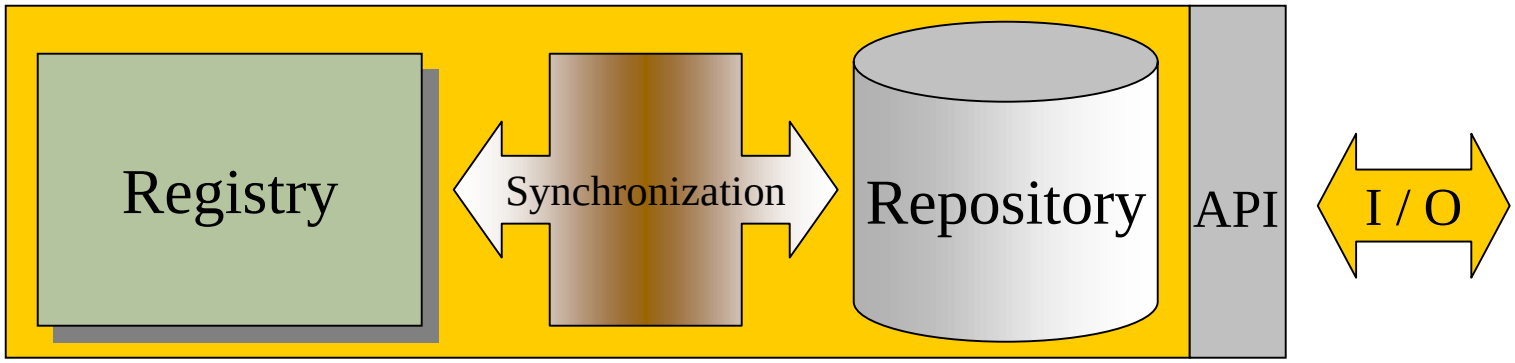
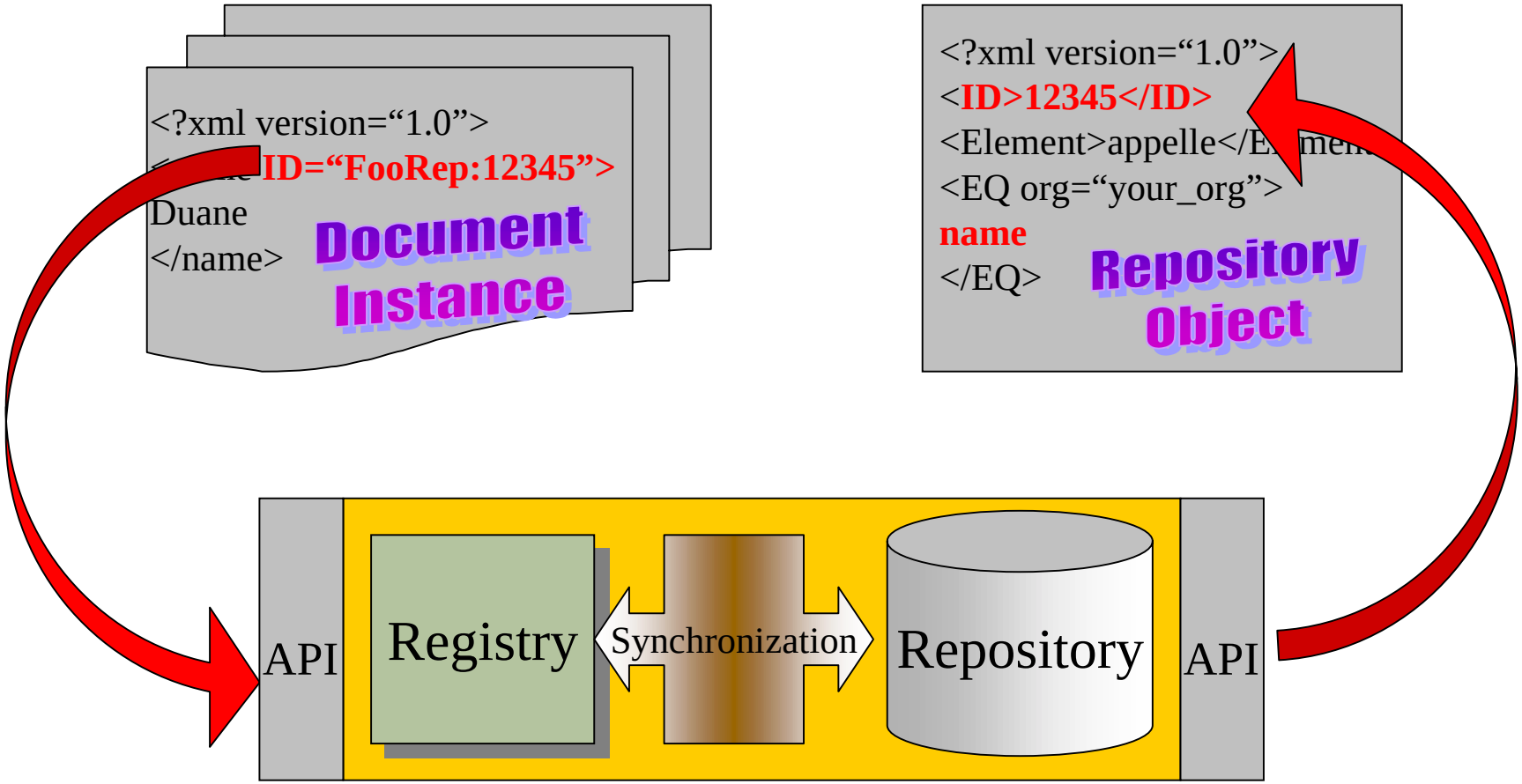
- At the heart of ebXML is a powerful system of Registries and Distributed Repositories.
- Some repository objects are Core Components and some describe Business Process.
- It is important that we can reference Objects (CC) from Business Process Layer at the Element Level.



- Elements in document instances contain pointers to RO's



ebXML Metadata and Objects

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

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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"

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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”

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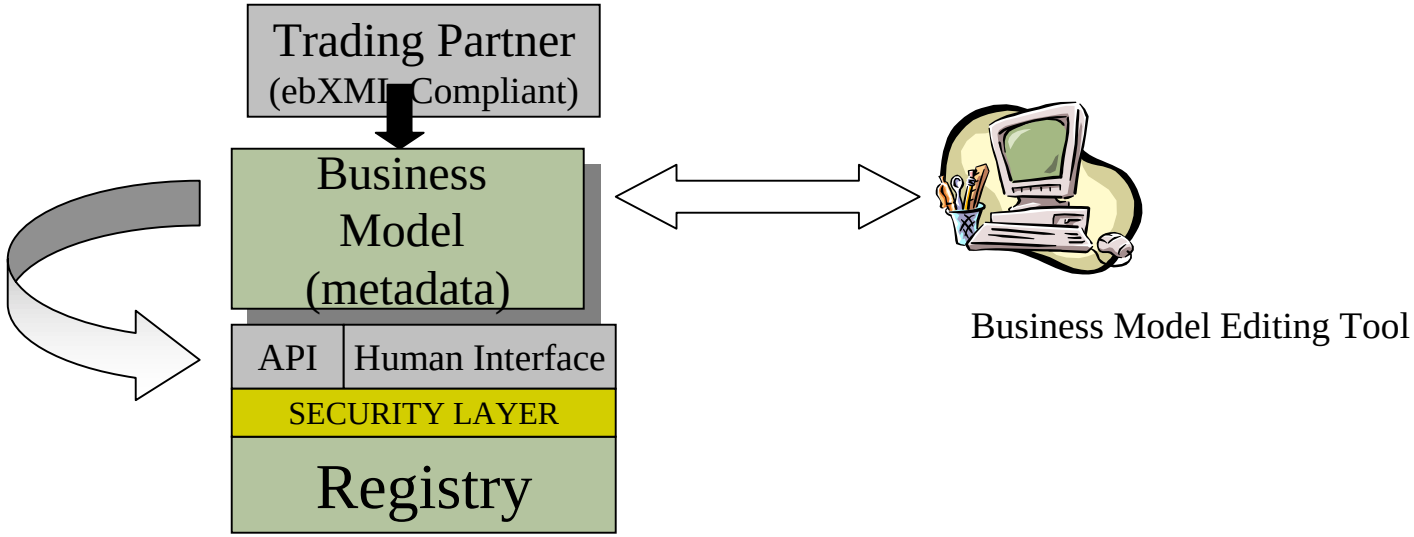
How ebXML Trading Partners Interact

- 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.



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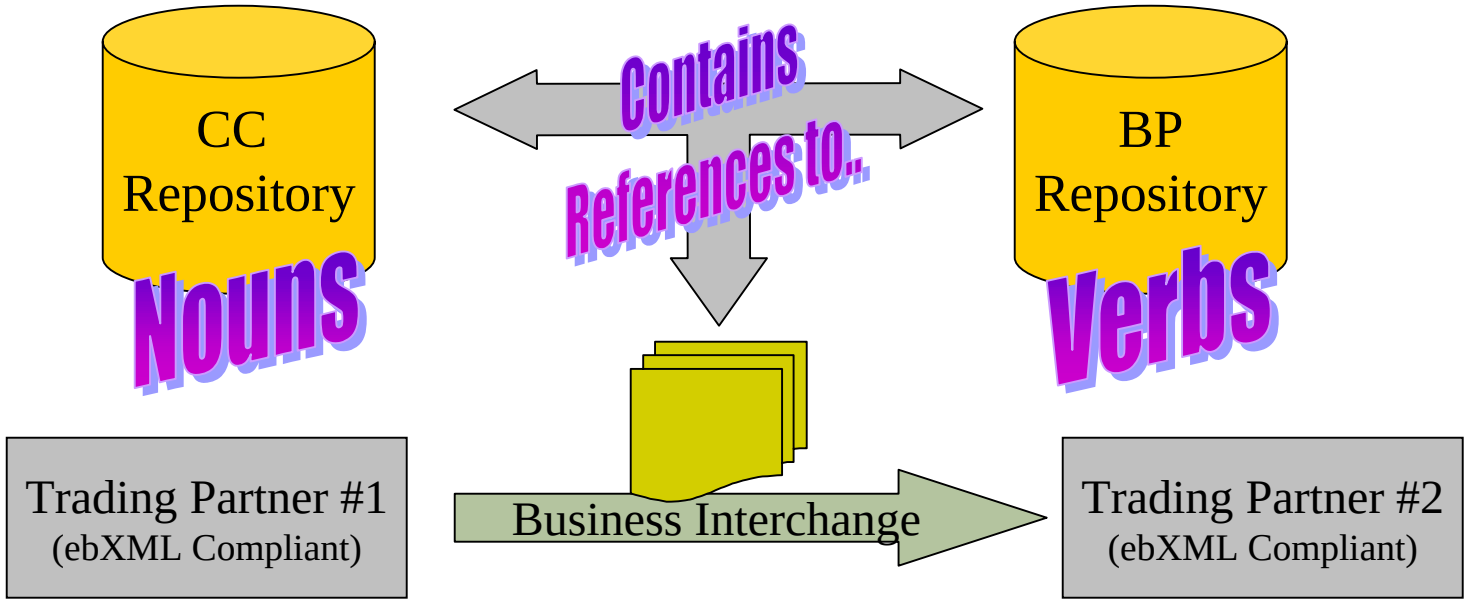
How ebXML Trading Partners Interact (1)

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



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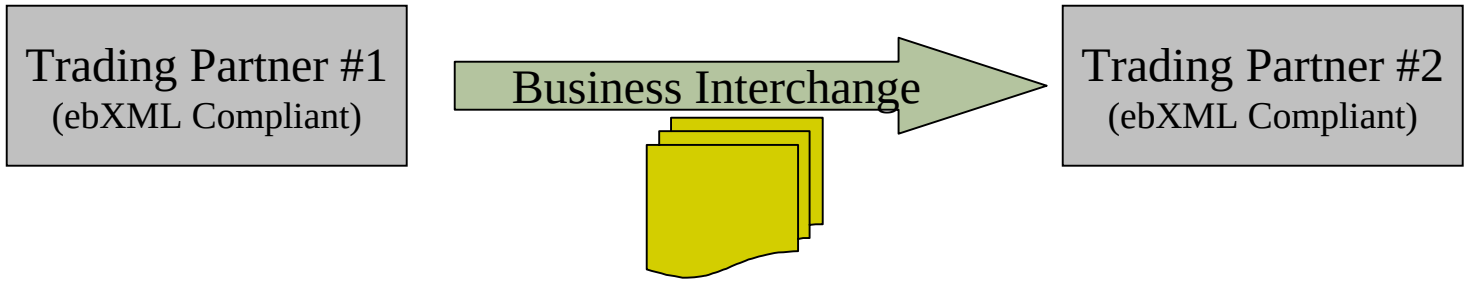
How ebXML Trading Partners Interact (2)

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



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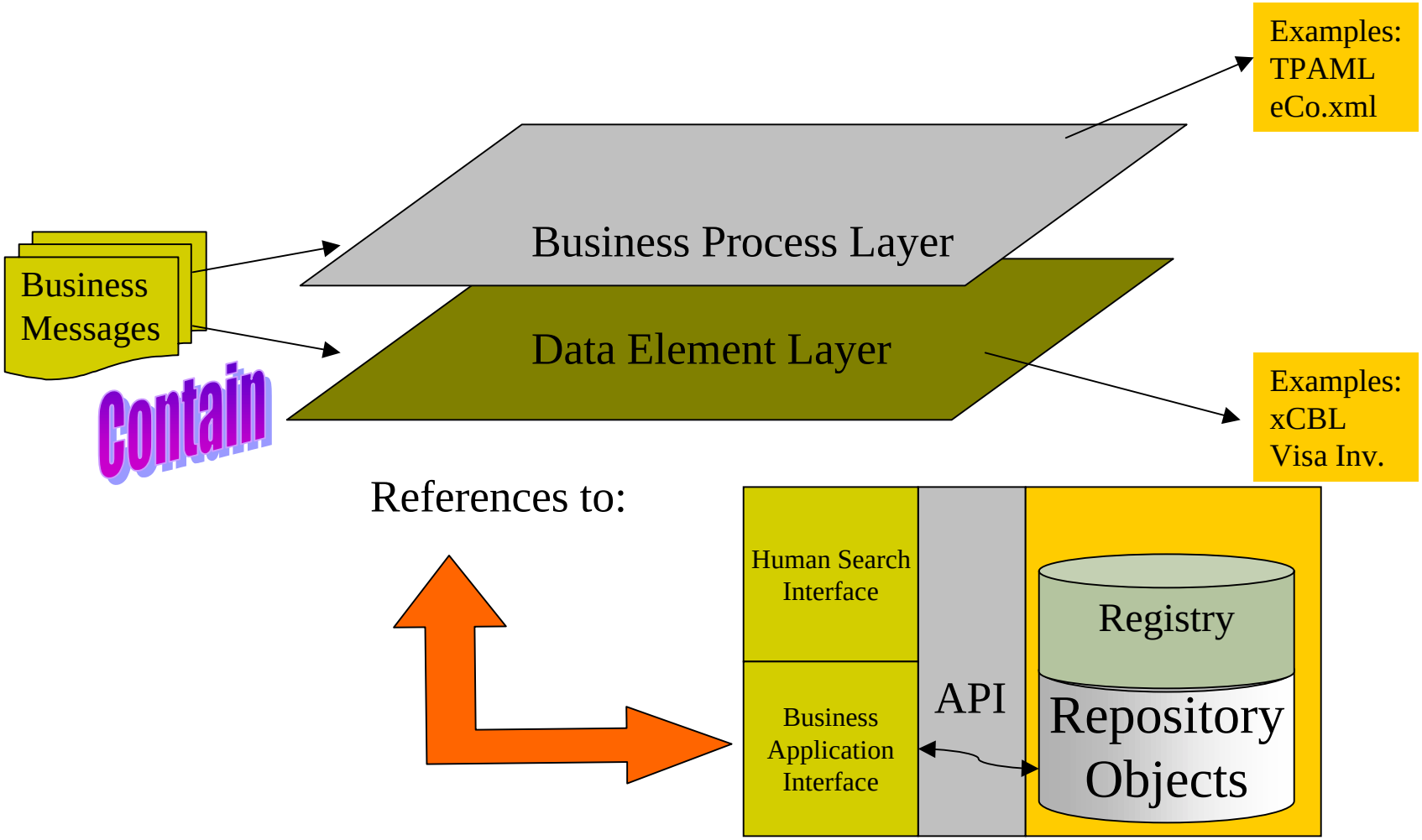
Business Message References



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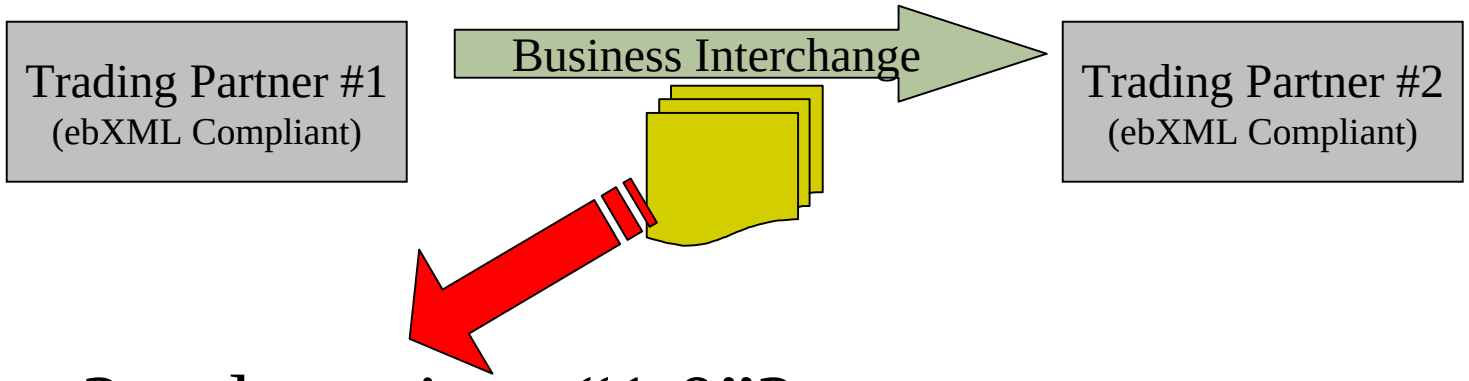
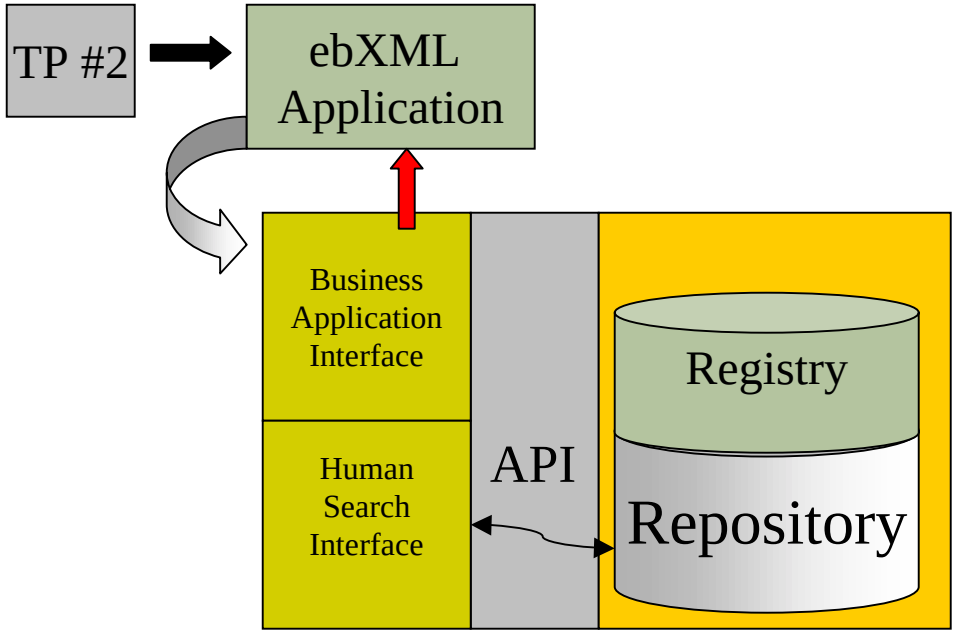
How ebXML Trading Partners Interact (3)

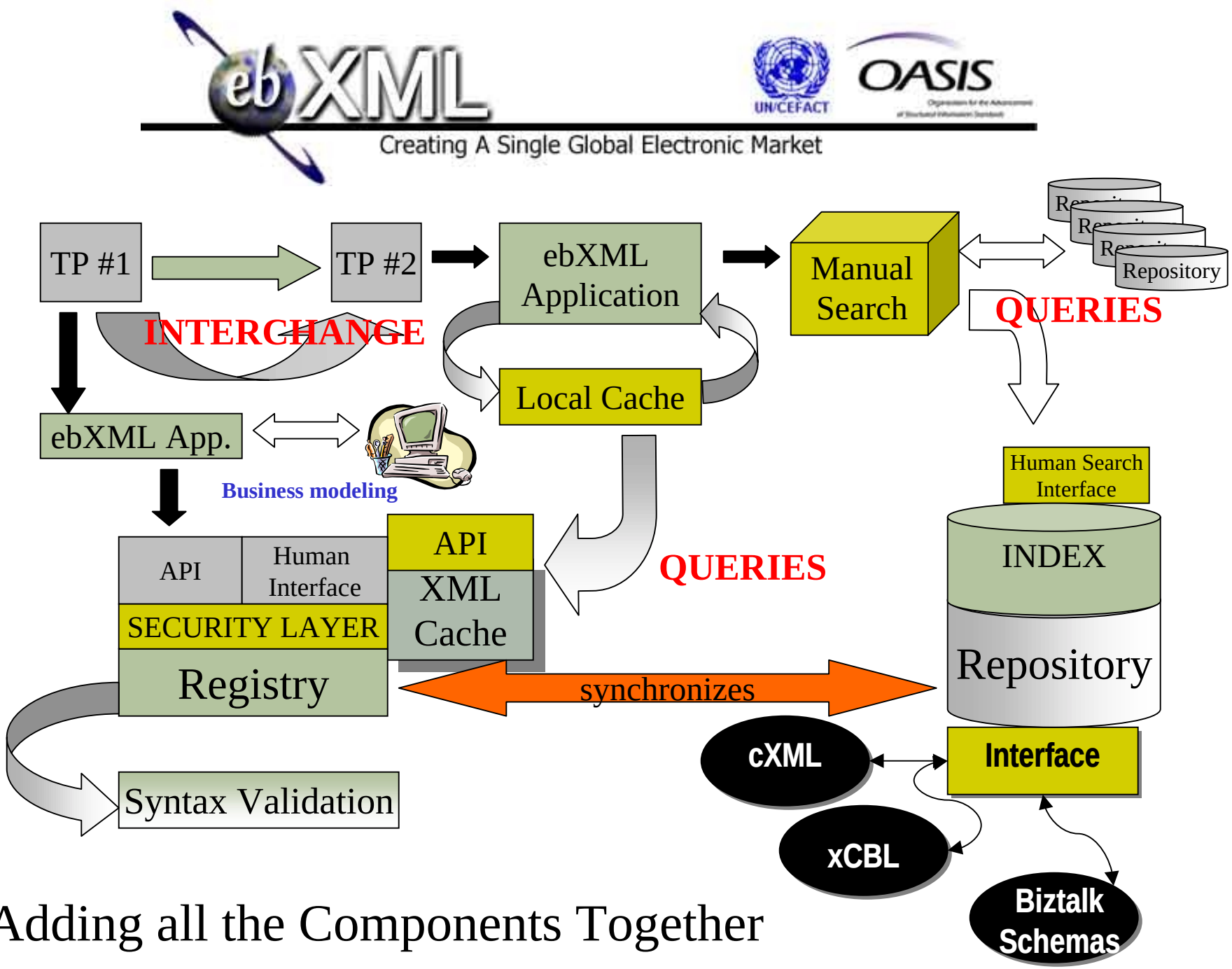


- <?xml version="1.0"?>
- <purchase_order GUID="678">
- <Name GUID="12345">Duane</Name>
- …

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

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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

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Business Process
Process Modeling & Meta-Modeling

Karsten Riemer

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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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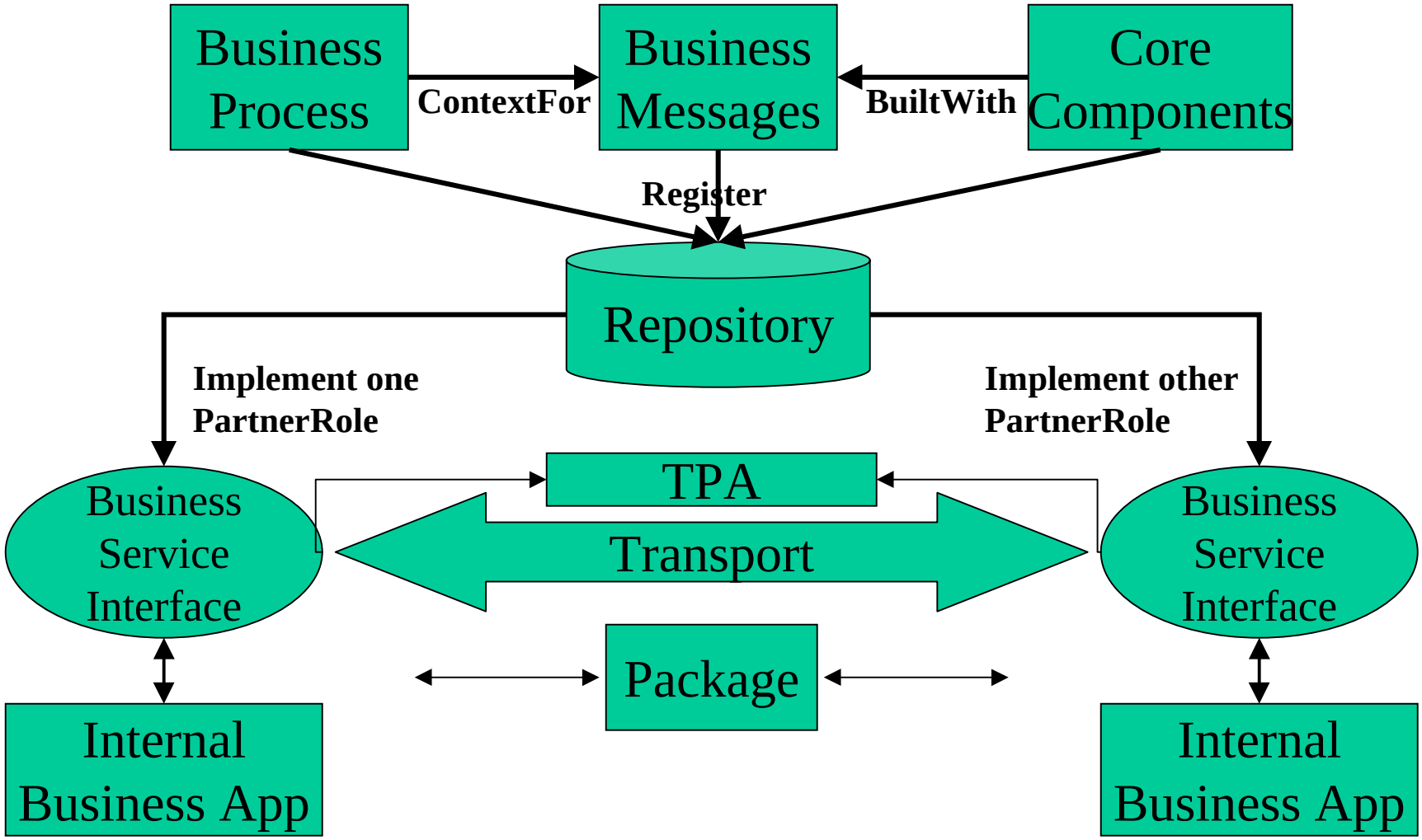

ebXML BP objectives

- 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

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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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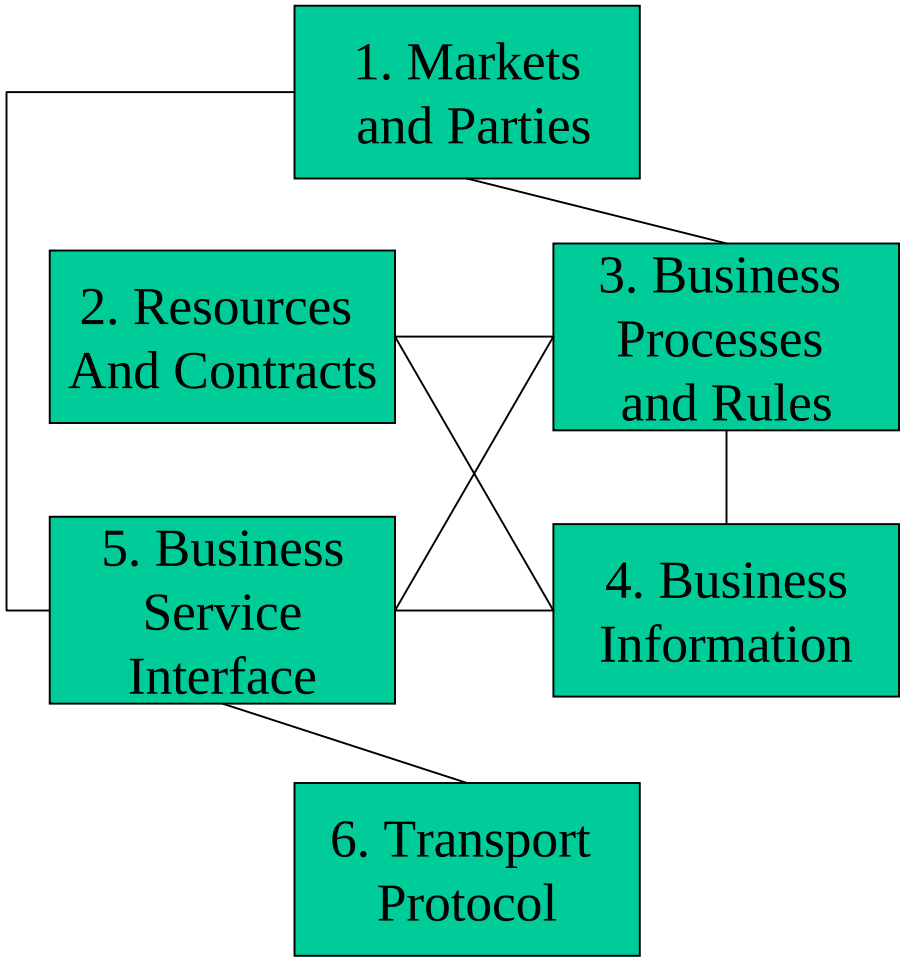
ebXML metamodel

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



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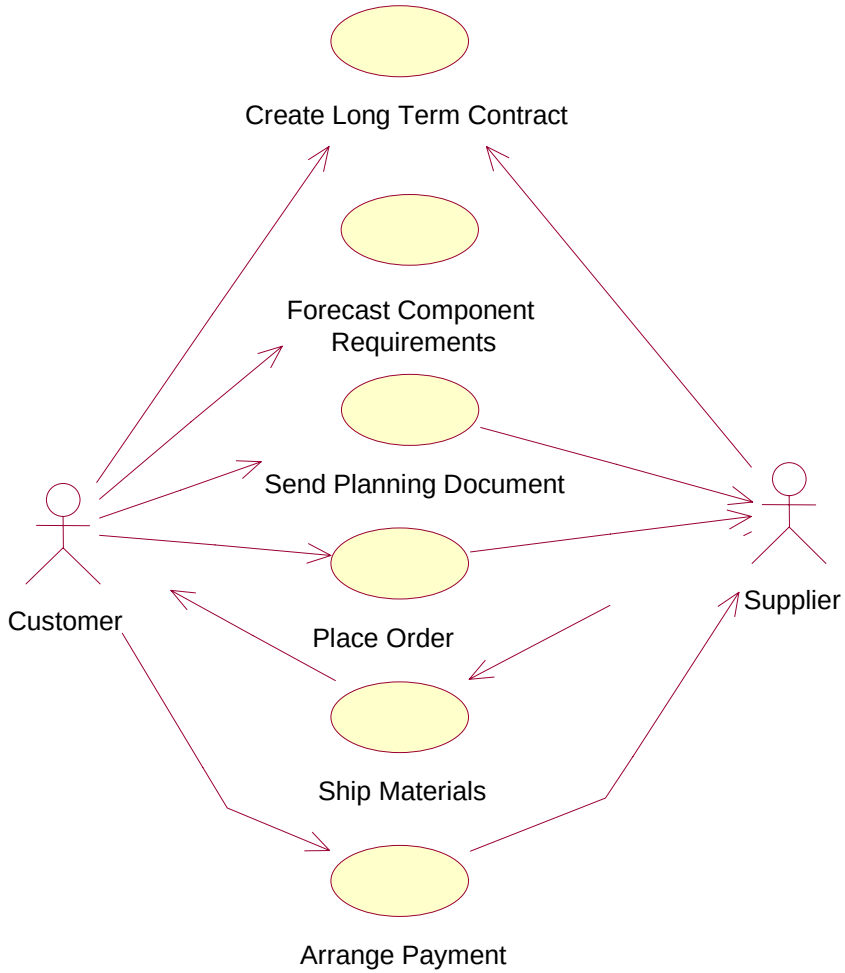
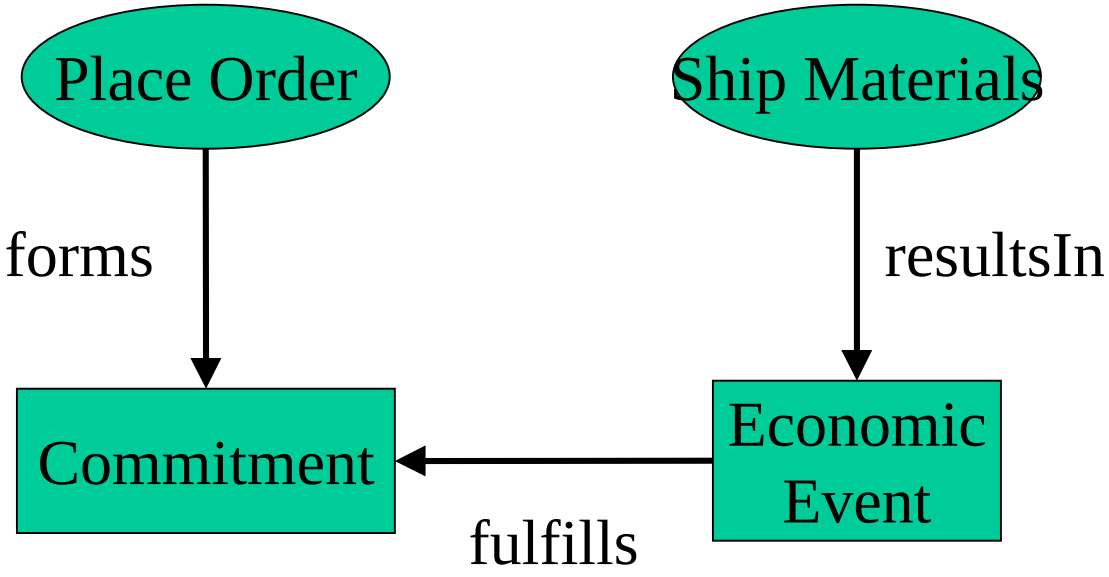
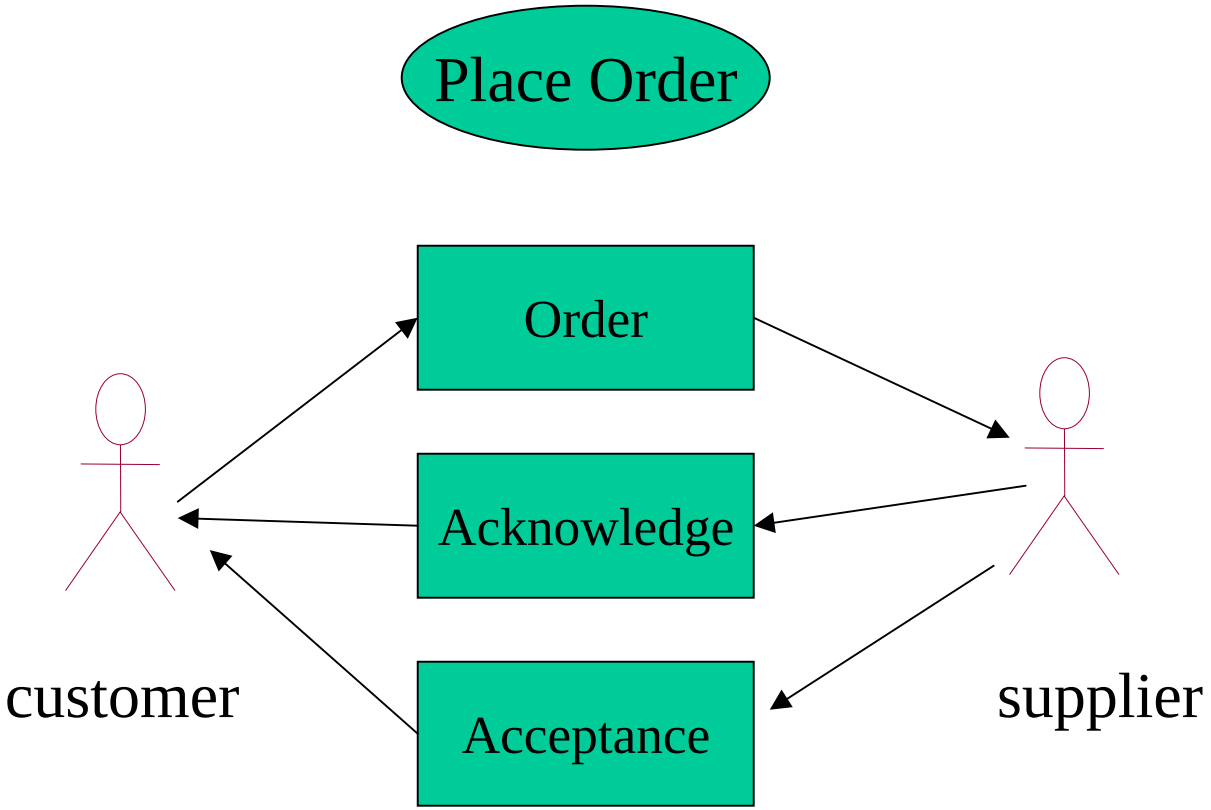
Process Sequence



Business Semantics

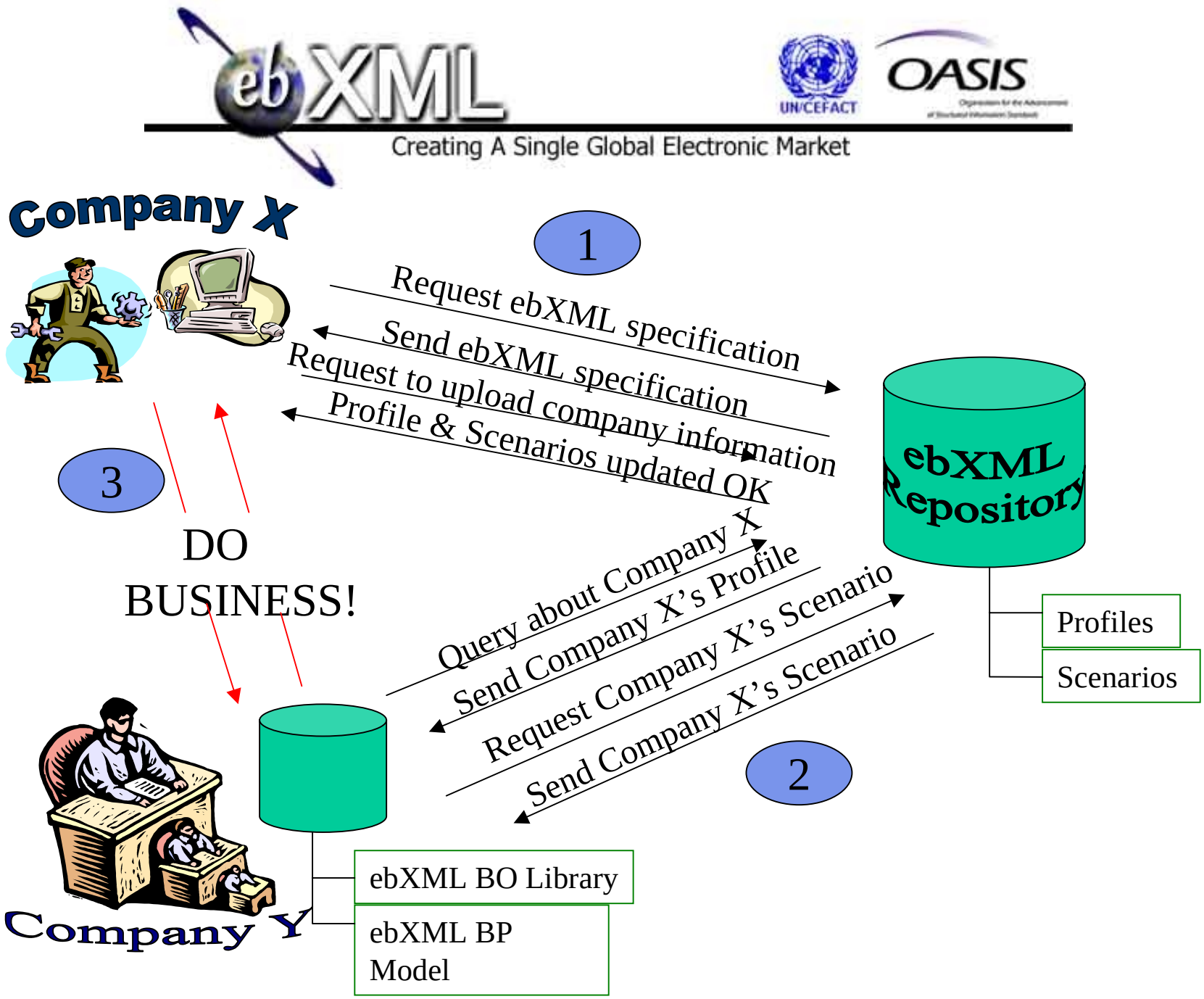


Message Sequence



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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OASIS
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

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Core Components Methodology & Results

Sue Probert

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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?

Pieces of business information → **Core Component (generic)**

used in Context → **Core Component (specific)**

from Business process modelling and Data analysis

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What part do they play?

PROCESS

INFORMATION CARRIER

Core Component

Core Component

Core Component (specific)

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

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Core Components
Vertical Validation Projects

Mary Kay Blantz

Lisa M. Shreve

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Core Components Workshop

UNIQUE UNIQUE UNIQUE UNIQUE

CORE COMPONENTS

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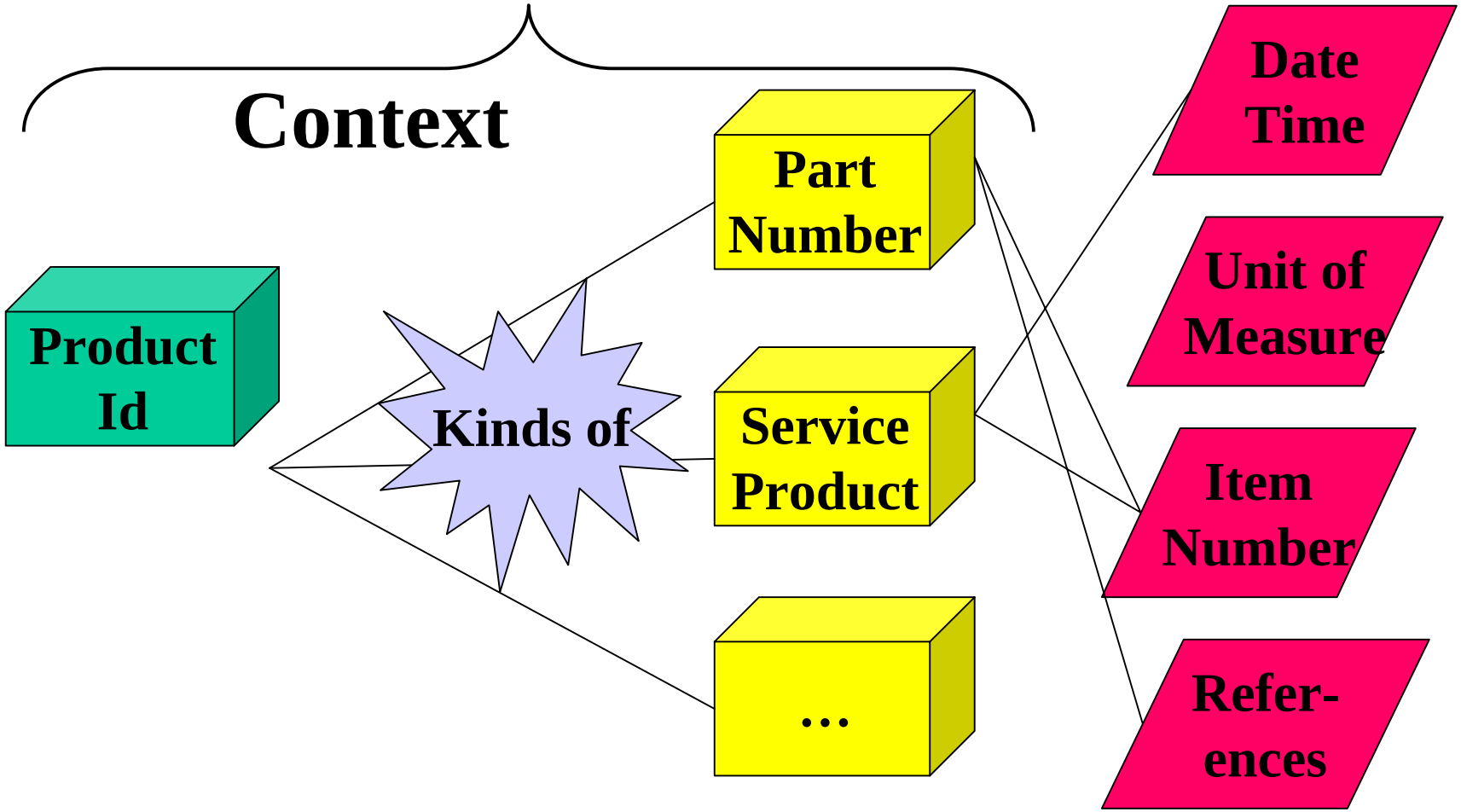
Smart Core Components



What is Context

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

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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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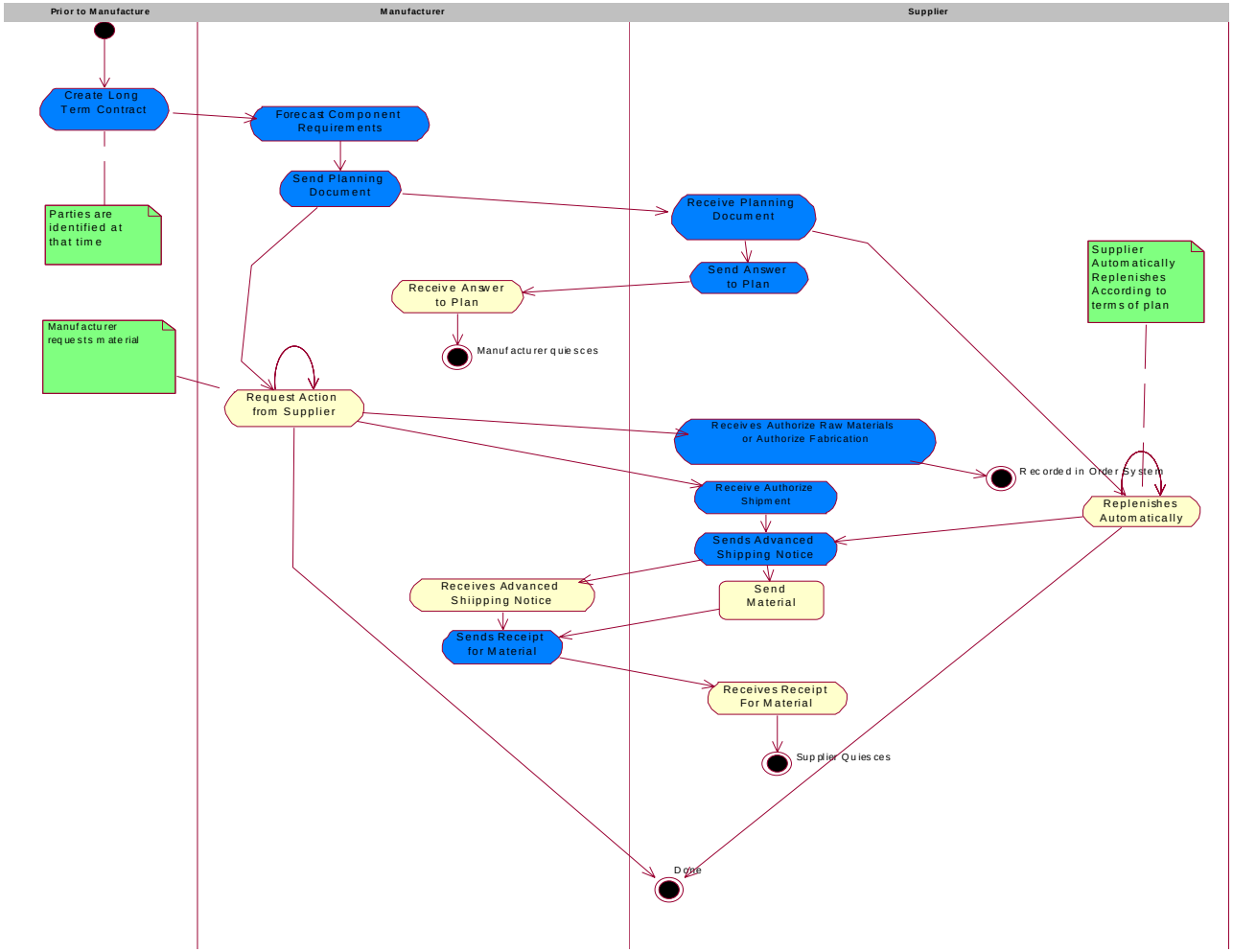
AIAG Process Model



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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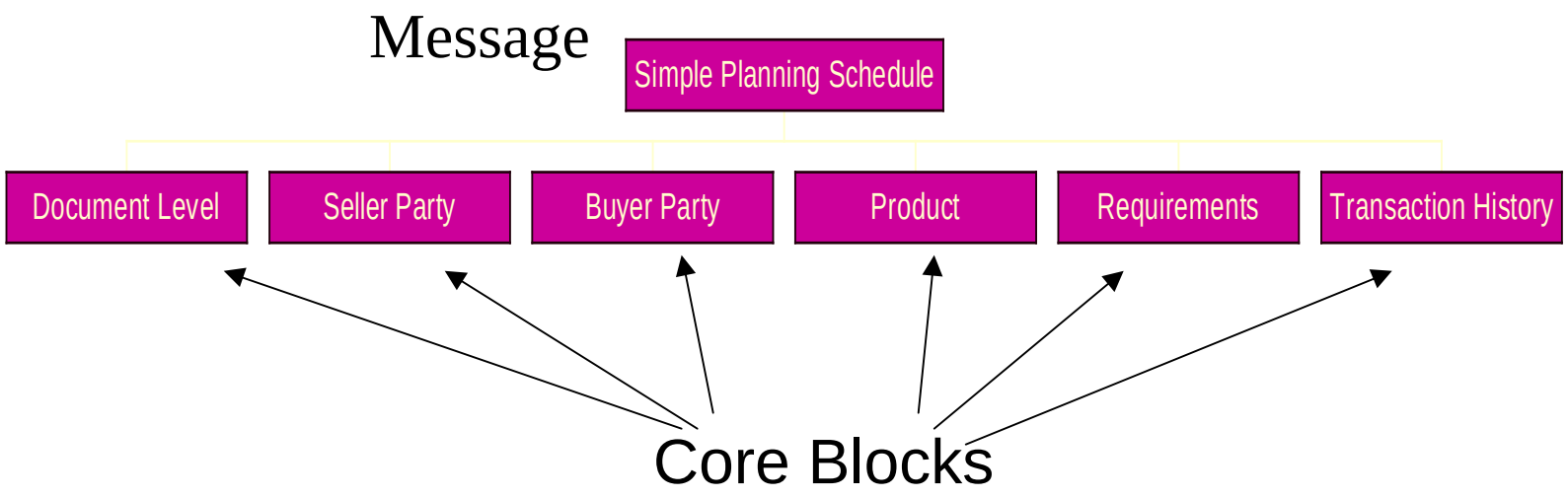
Core Components
Planning Message

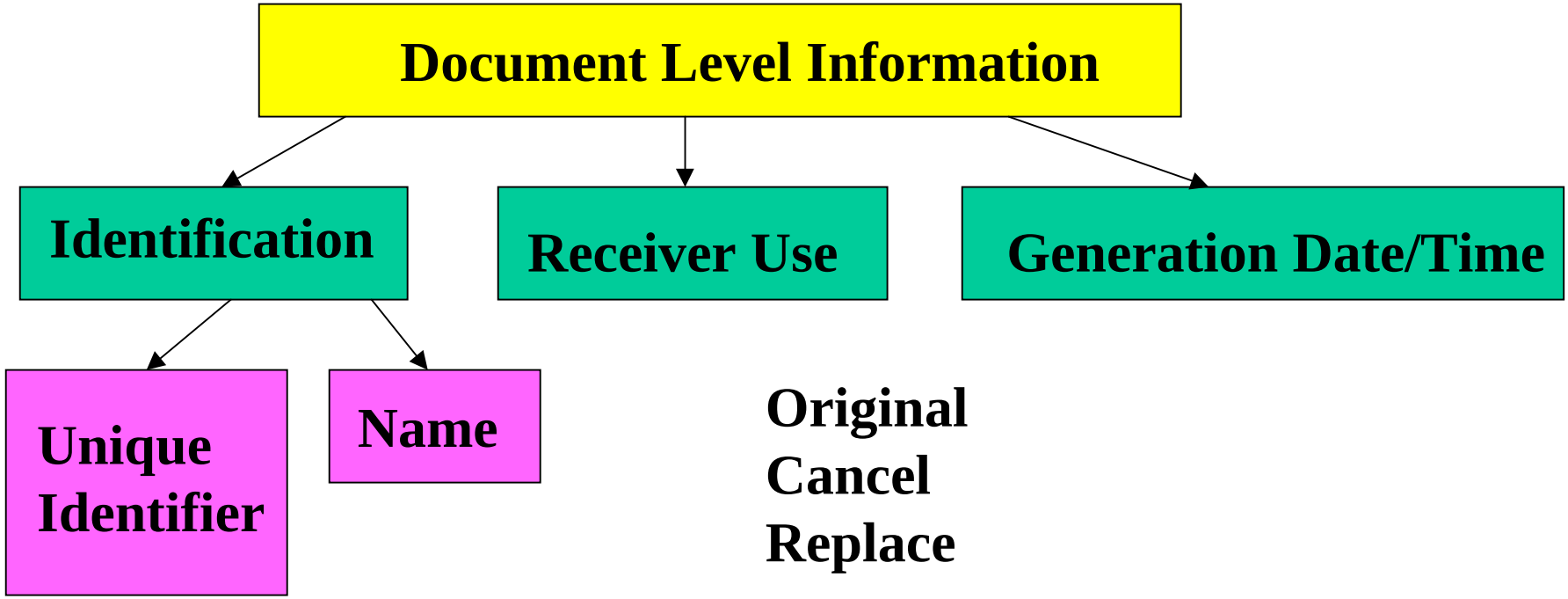
Pick a core block



Determine Composition

Draw a picture of the core block

Draw a picture - any format you find clear



Original
Cancel
Replace

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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

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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

Links | Best of the Web | Channel Guide | Customize Links | Backflip It! | Free Hotmail | Internet Explorer News | Internet Start | RealPlayer | Windows

ebXML Business Entity Definition

Date:

Submitter:

Entity ID:

Entity Name:

Entity Description:

Embedded Components

Name	Type	Identifier*	Description
	Entity Definition		
	Entity Definition		
	Entity Definition		

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Transport, Packaging and Routing

Rik Drummond

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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?

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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

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Finally!

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

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

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ebXML Agenda
San Jose

Klaus-Dieter Naujok

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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

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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

Creating A Single Global Electronic Market

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

Creating A Single Global Electronic Market

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