



Creating A Single Global Electronic Market

ebXML Technical Architecture

San Jose, CA USA

Wednesday, 9 August 2000



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Initial Thoughts:

- Examine the differences between standards (vocabularies) and the EbXML Infrastructure
- Examine the differences between Core Components and Business Processes.
- Look at the overall architecture of ebXML



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Goals:

- To provide a high level overview of how ebXML works
- Distinguish the run time viewpoints
- To show how different ebXML compliant Vocabularies can interoperate within the ebXML infrastructure.

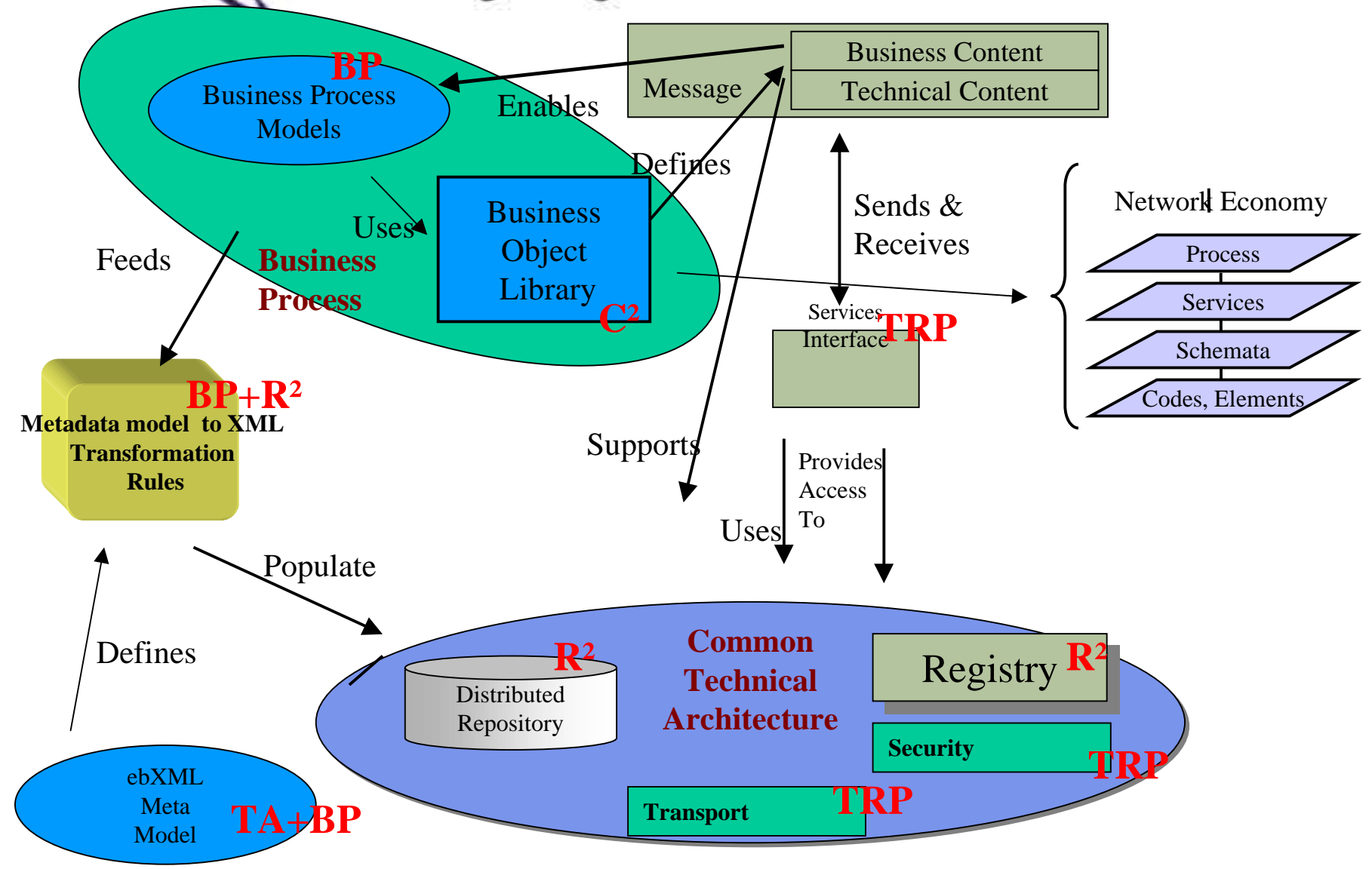


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Why XML

- 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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TA Philosophy

Architect ebXML in Layers

The first layer has to recognize the Repository Items that constitute core components (ie address, tel)

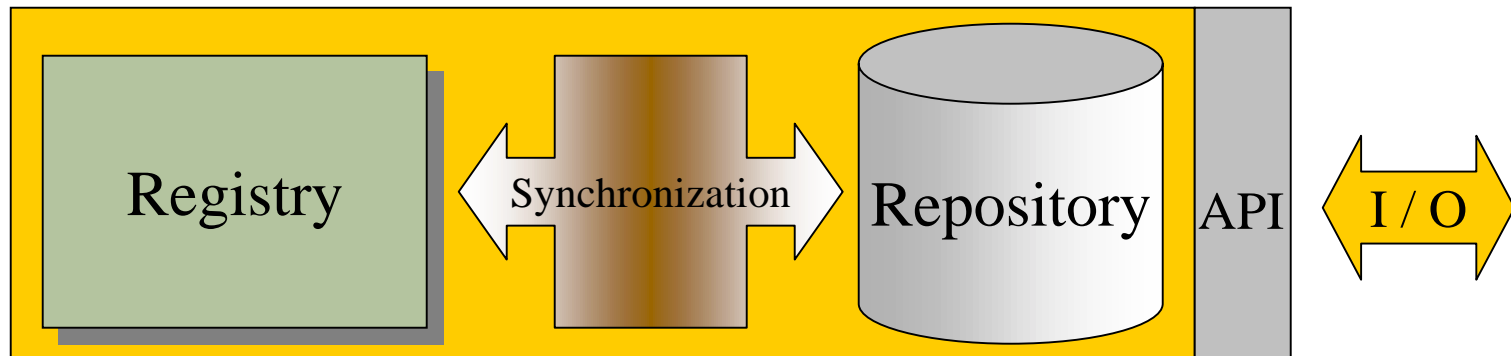
The second Layer has to recognize the Business Process

Third Layer is discovery of what partners require

Current work focuses largely on Layer one!

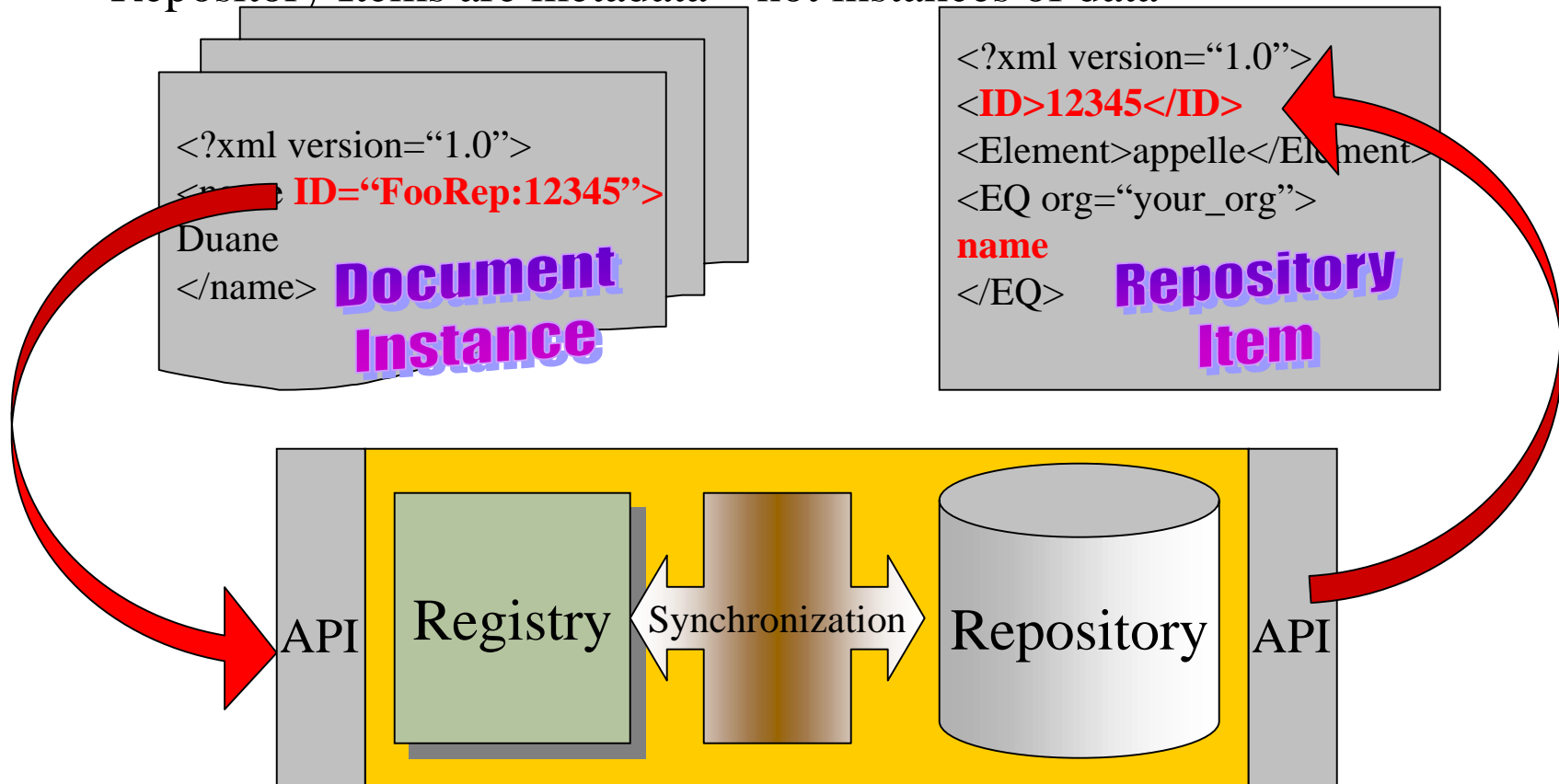
ebXML Architecture

- At the heart of ebXML is a powerful system of Registries and Distributed Repositories.
- Some repositories contain Core Components and some contain Syntax describing Business Process.
- It is important that we can reference Items (CC) from Business Process Layer at the Element Level.



ebXML Architecture

- XML Elements in document instances contain pointers to RI's
- Repository Items are metadata – not instances of data





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ebXML Metadata and Items

Two basic types:

- Core Components – (nouns)
- Business Processes – (verbs)

This is over simplified



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Core Components are:

- A Core Component captures information about a real world (business) concept, and relationships between that concept and other business concepts.
- A Core Component can be either an individual piece of business information, or a natural 'go-together' family of business information pieces.
- It is 'Core' because it occurs in many different areas of industry/business information exchange.



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ebXML Core Components

- 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.sendParty(name) != PurchaseOrder.sendParty(name)`**



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ebXML Business Process

- BP describe document choreography and overall process interfaces.
- Identify which data needs to be present to ensure requirements of both parties are being met.
- Examples can be “Deliver a service” or “Purchase a product”



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Repository Item Examples

- XML elements in business messages can reference items in a repository.
- Examples:
 - `<nameofperson>`
 - `<nomdelapersonne>`
 - `<name>`
 - `<TheThingICallYou>`

All are the same item (semantically)!!!



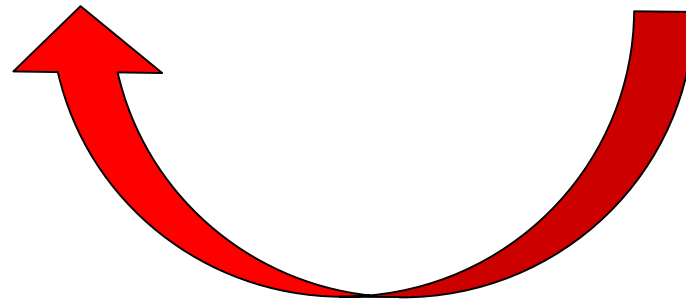
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The Process Layer Example

- Examples:
 - `<name_of_person>`
 - `<nom_du_personne>`
 - `<name>`
 - `<The_thing_I_call_you>`
- Are all XML elements that may be part of a process called “Purchase a Product”

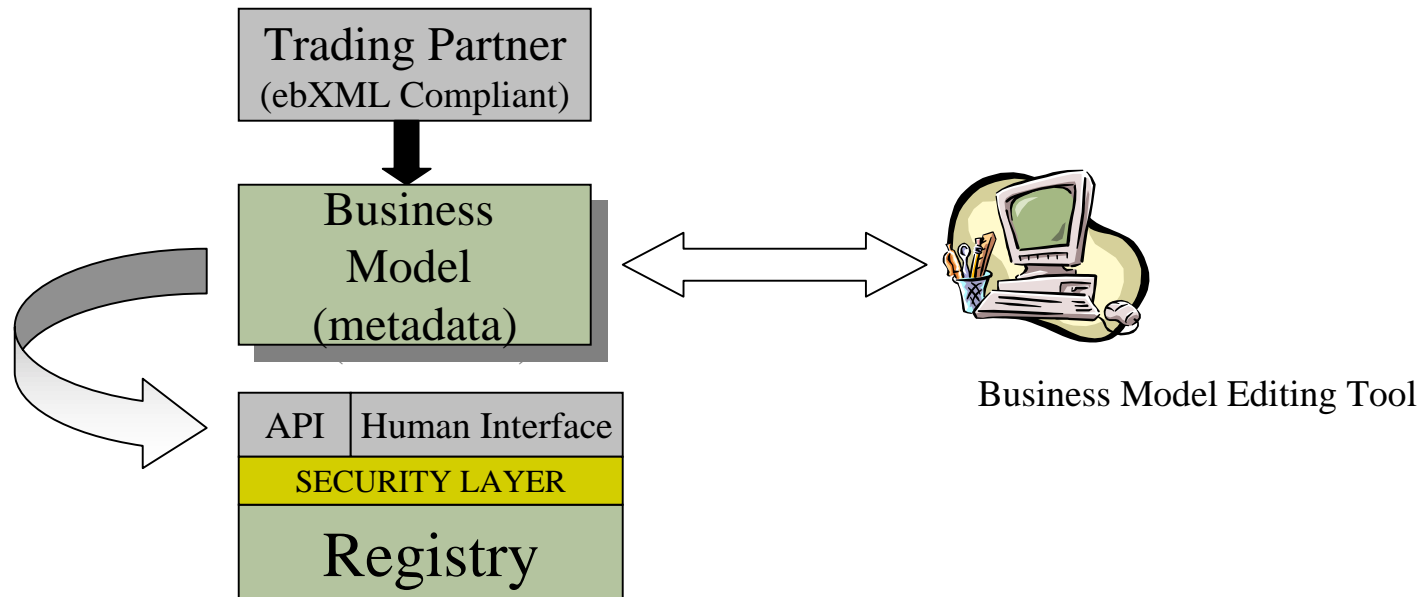
The Layers operate in Parallel

- XML Elements:
 - <name_of_person
GUID="12345">
 - <nom_du_personne
GUID="12345">
 - <name **GUID="12345">**
- Process
 - <Process GUID="678">Purchase a
Product</Process>
 - <Step_1>
 - <Item sentBy="party_1" to="party_2"
GUID="12345">name</Item>



How ebXML Trading Partners interact

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

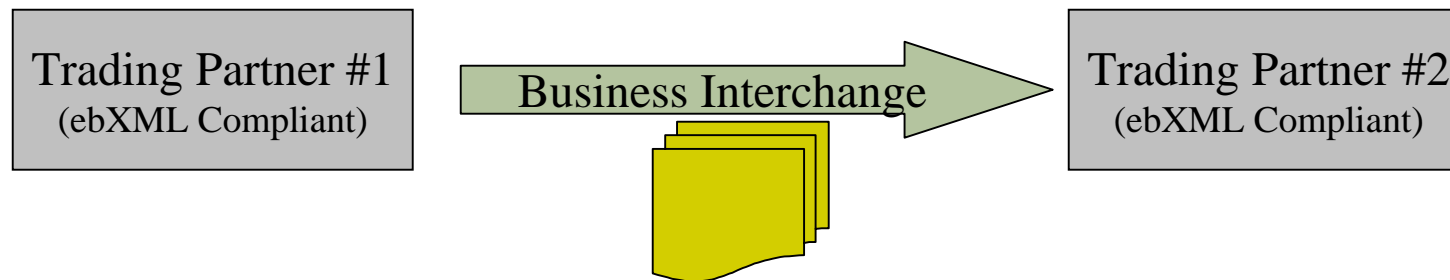




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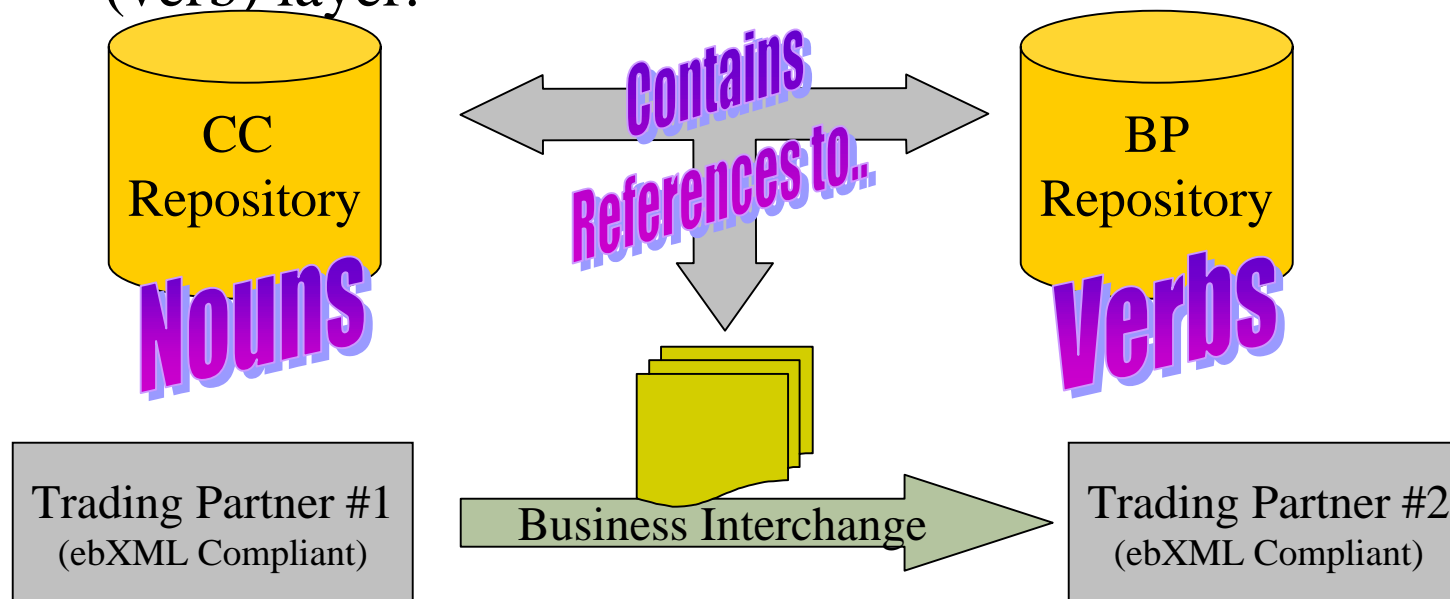
How ebXML Trading Partners Interact

- The Trading Partner sends a business message instance to another ebXML capable trading partner.
- The business message is part of a Business Process

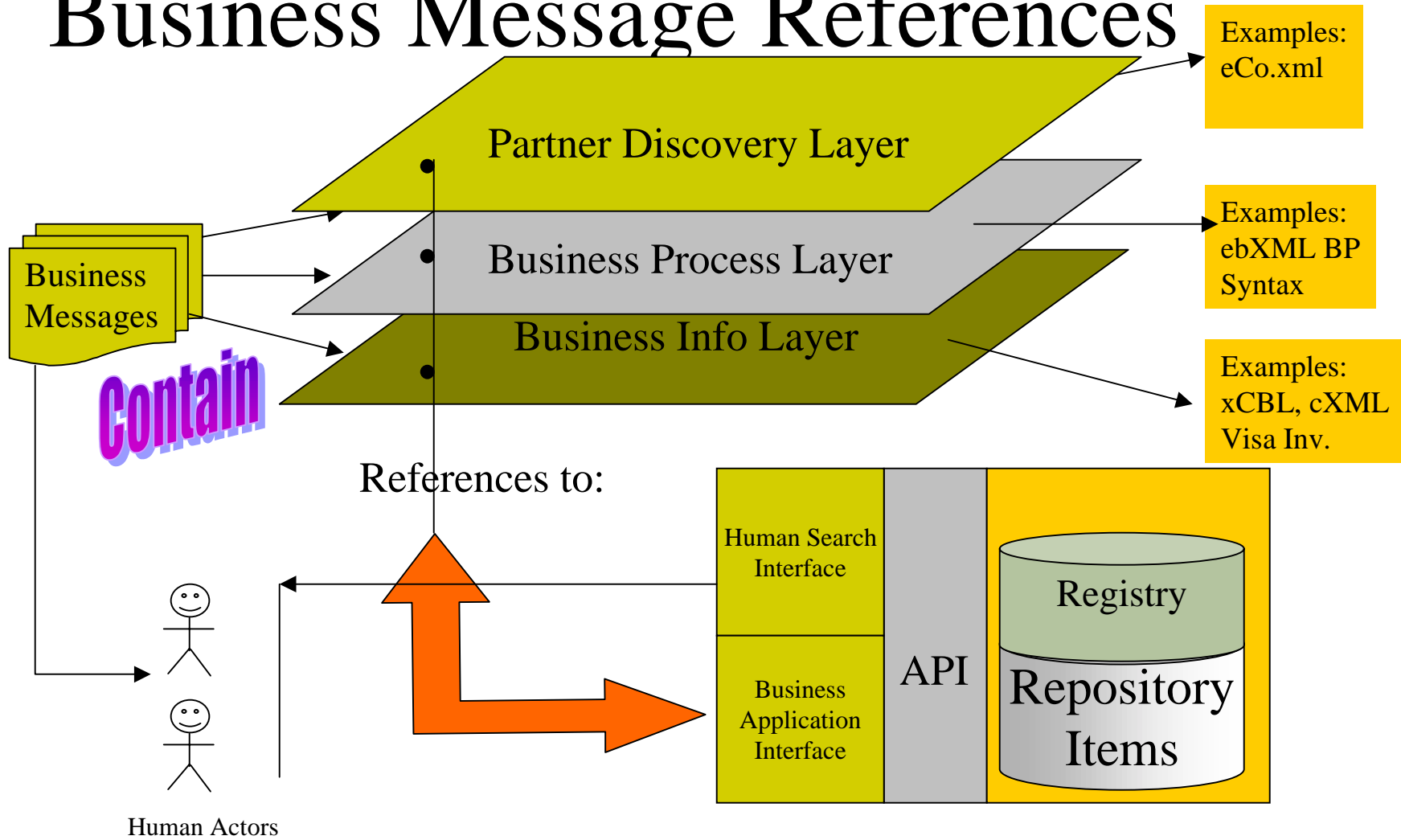


How ebXML Trading Partners Interact (2)

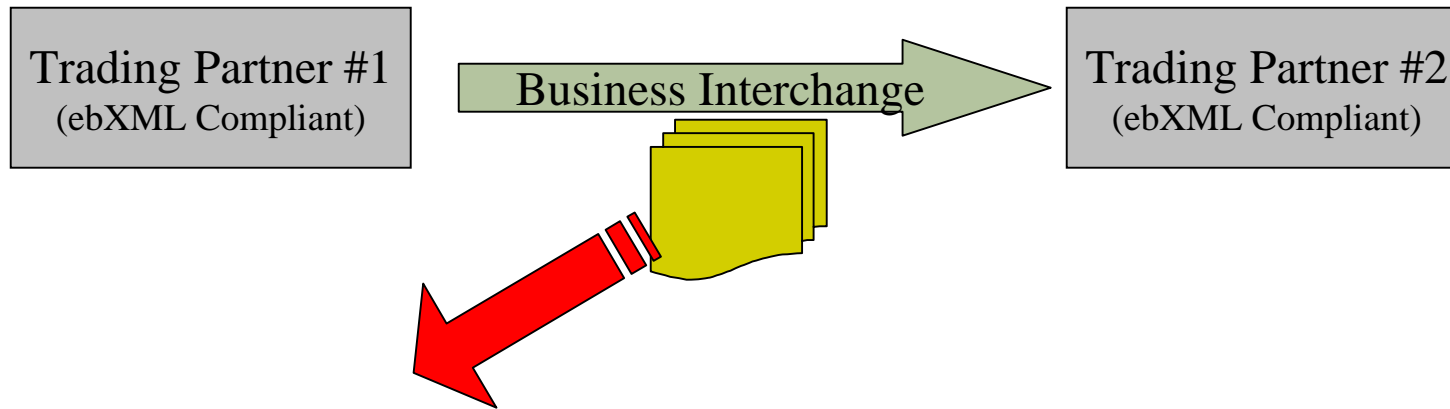
- The transaction contains abstractions of two layers – the Core Components (noun) layer and the Business Process (verb) layer.



Business Message References



Business Message Interchanges



```
<?xml version="1.0"?>
```

```
<purchase_a_product GUID="678">
```

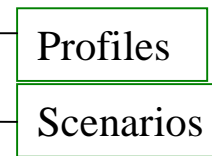
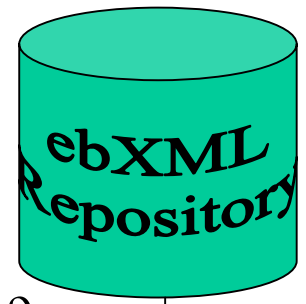
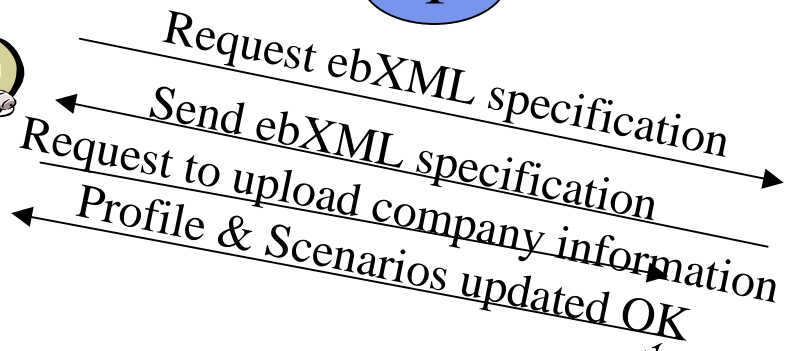
```
<Name GUID="12345">Duane</Name>
```

...

Company X

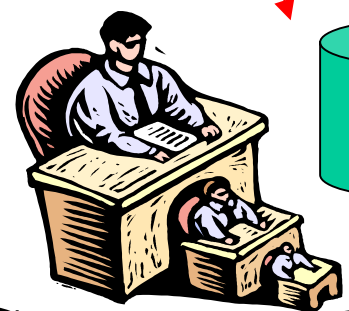


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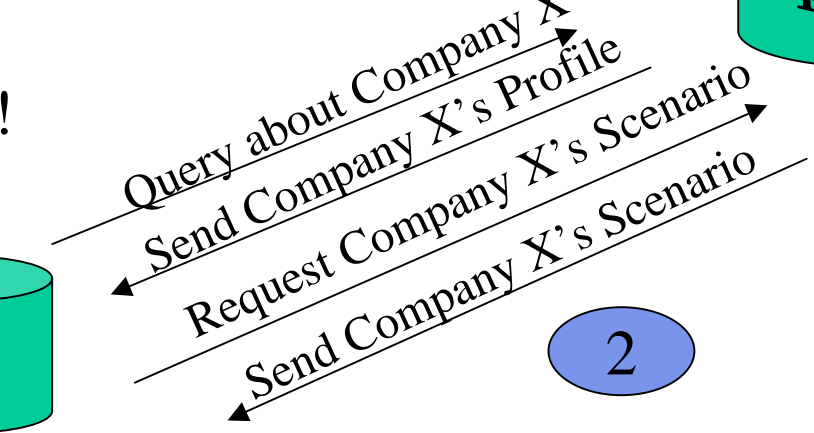
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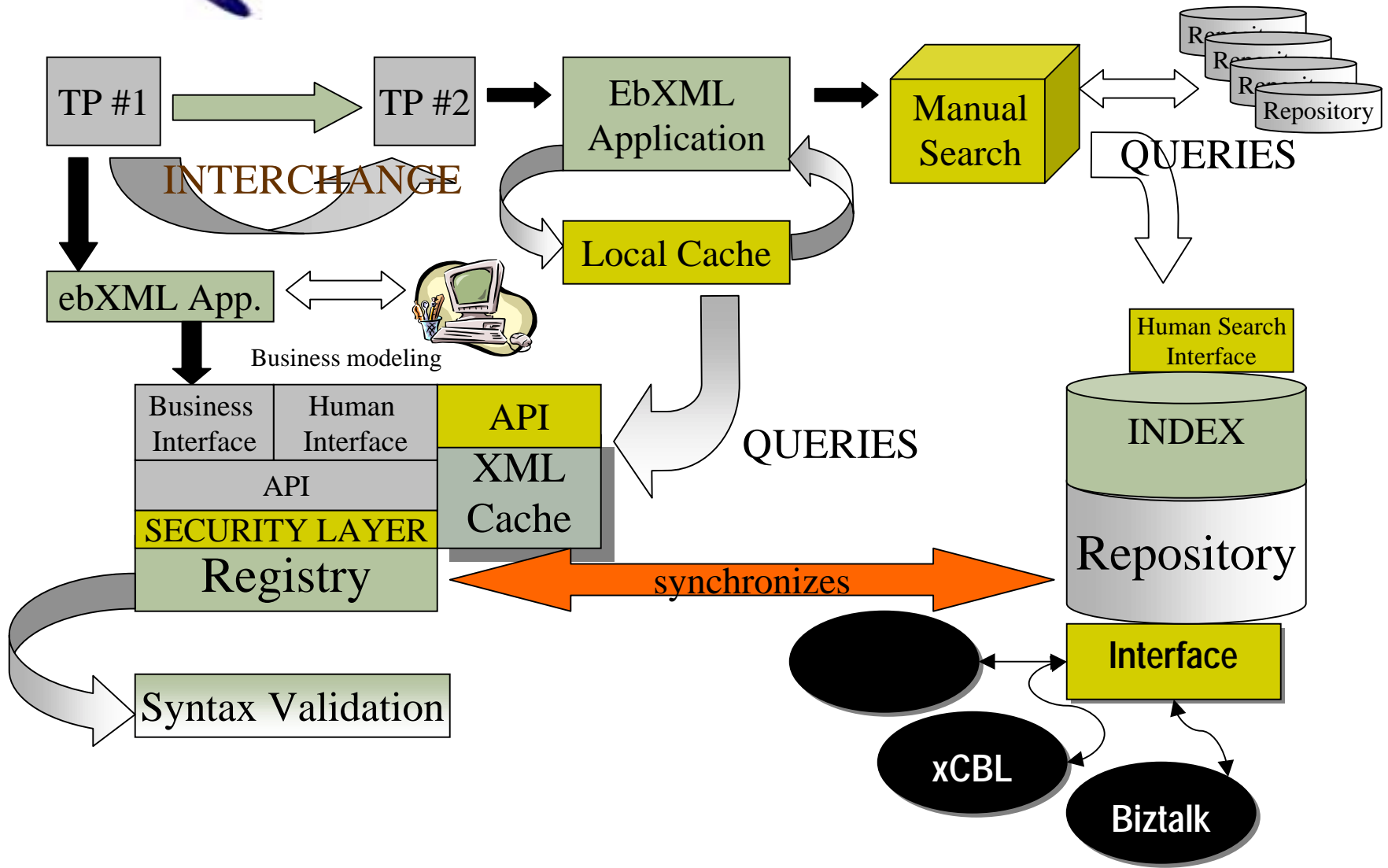
DO
BUSINESS!



Company Y

2







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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