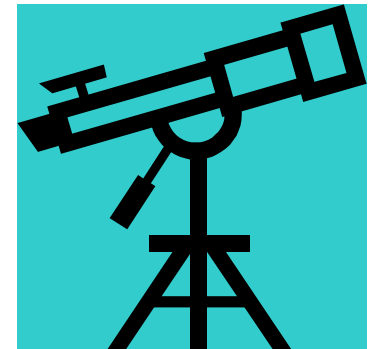


# ebXML and the e-Business Protocol Stack

John Yunker  
Amazon.com

# Business Vision

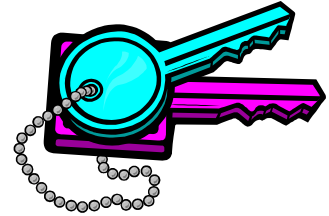
- Align, implement, optimize, and evolve value chain partnerships



# Principles

- Business requirements drive technology solutions
- Embody best practices in collaborative ebusiness standards
- Focus on expected business results

# Keys to the Vision



## Requirements

- Alignment of business goals and objectives
- Alignment of business processes and procedures
- Alignment of business objects and information
- Alignment of technology
- Partner, model, and service discovery

## Standards Solutions

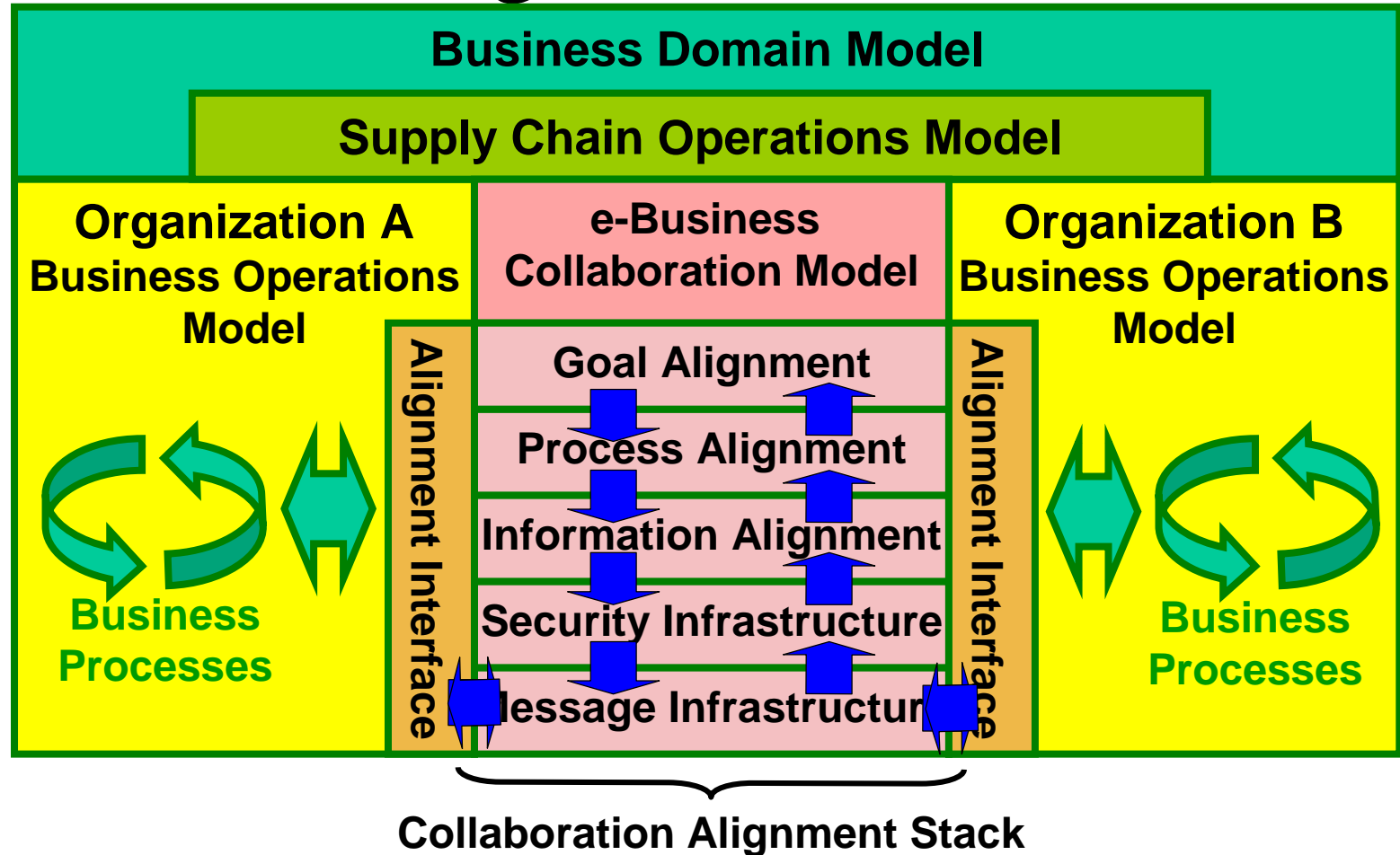
- Operations reference models and commitment / collaboration patterns
- Partner process models and protocols
- Core ontologies, REA, and XML messaging standards
- Internet Implementation frameworks
- Registries with partner, process and service descriptions

How to make  
computers understand  
business conversations?



Put your **business objectives**  
into the system

# The alignment domain



# The elaboration methodology

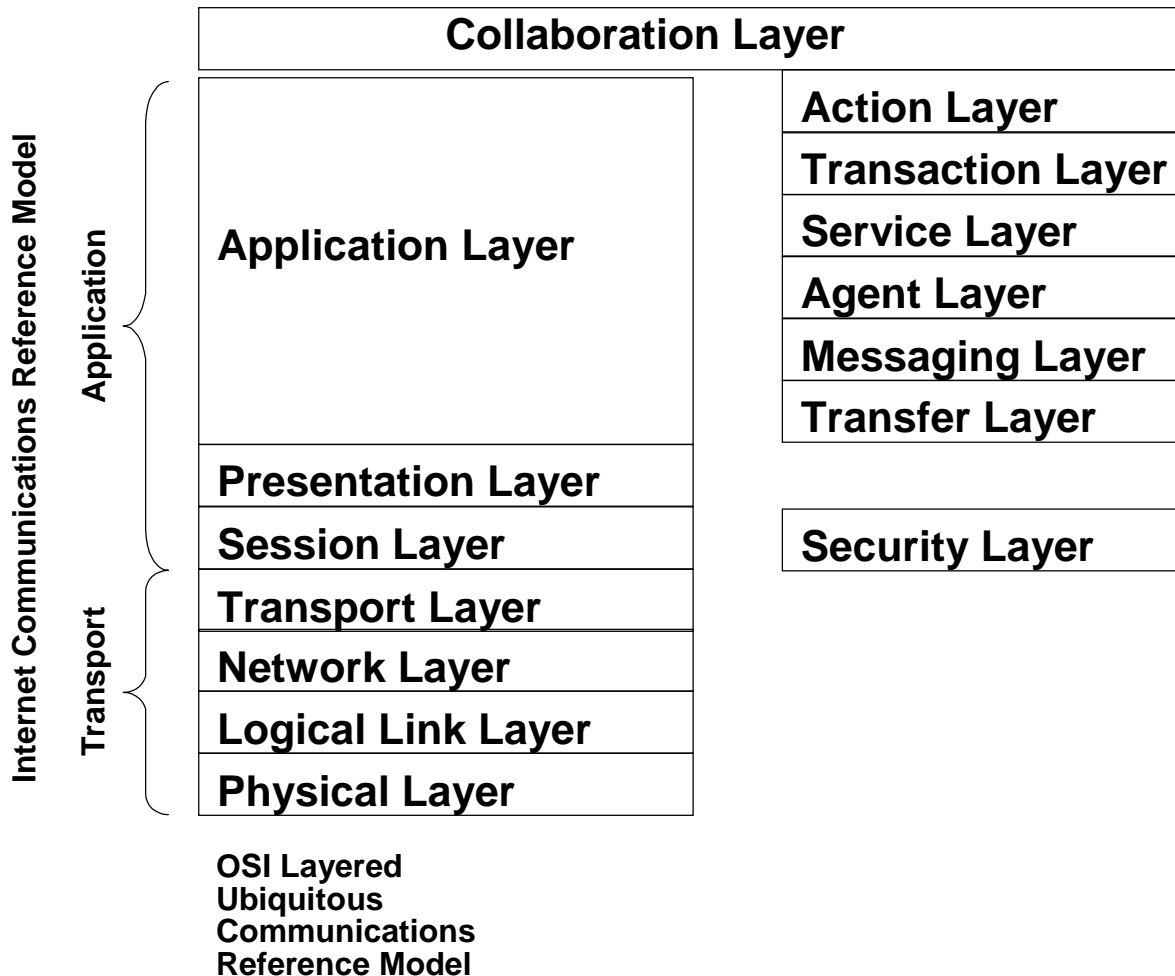
	Stakeholder	Business Focus	Model Activity	Elaborated Into
B2B	Management	Goal alignment	Business agreements and metrics	Business commitment and collaboration specification
	Operations	Process alignment	Business operation and interaction processes	Business collaboration protocol specification
	Analysts, Developers	Information alignment	Business object state	eBusiness message
A2A	Systems Integrator, Network Admin	Security infrastructure	Partner authentication and authorization	Collaboration role and digital signature
	Application Integrator	Messaging infrastructure	Component interaction sequence diagrams	eBusiness implementation framework

# The UMM and ebXML

- United Nations Center for Electronic Facilitation of Administration of Commerce and Trade (UN/CEFACT) has developed the **UMM** which is both:
  - a business modeling methodology
  - a meta-framework for organizing business/technology dependencies
  - an extension of UML
- ebXML uses the UMM as it's modeling foundation
- UMM structures modeling into layers of "views".

		Perspective	UMM View		
ebXML UN/CEFACT	{	Business Operations Requirements	Business Domain View (BDV)	}	Requirements
		Business Collaboration Requirements	Business Requirements View (BRV)		
		Commercial Transaction Protocol and Business Collaboration Protocol	Business Transaction View (BTV)		
ebXML OASIS	{	Functional Service Protocol	Business Service View (BSV)	}	Specification
		Network Implementation Protocol	Implementation Framework View (IFV)		

# Alignment with OSI Stack

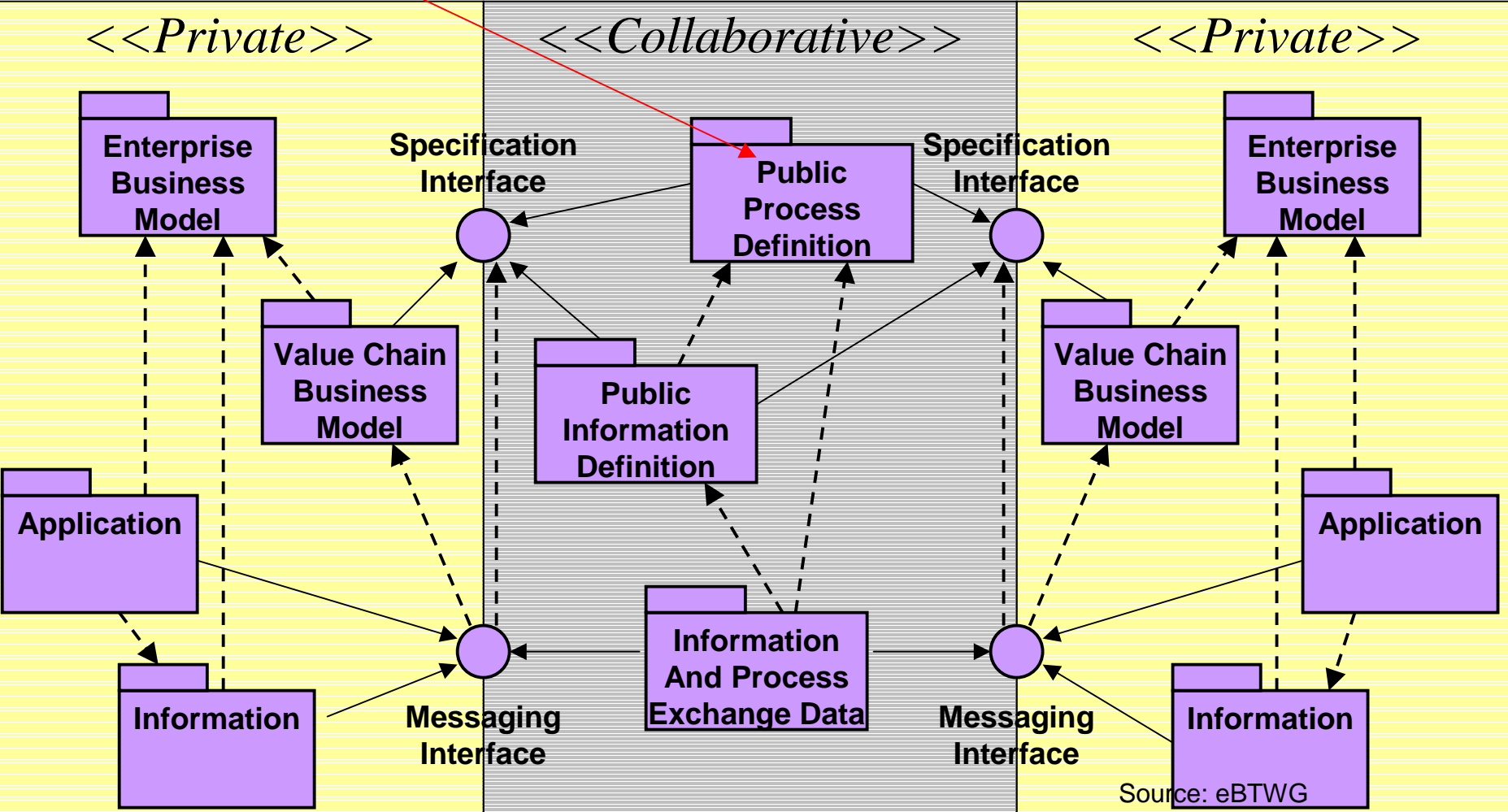


**Public in this context means known to all parties, not the at large public**

# Domain of Alignment

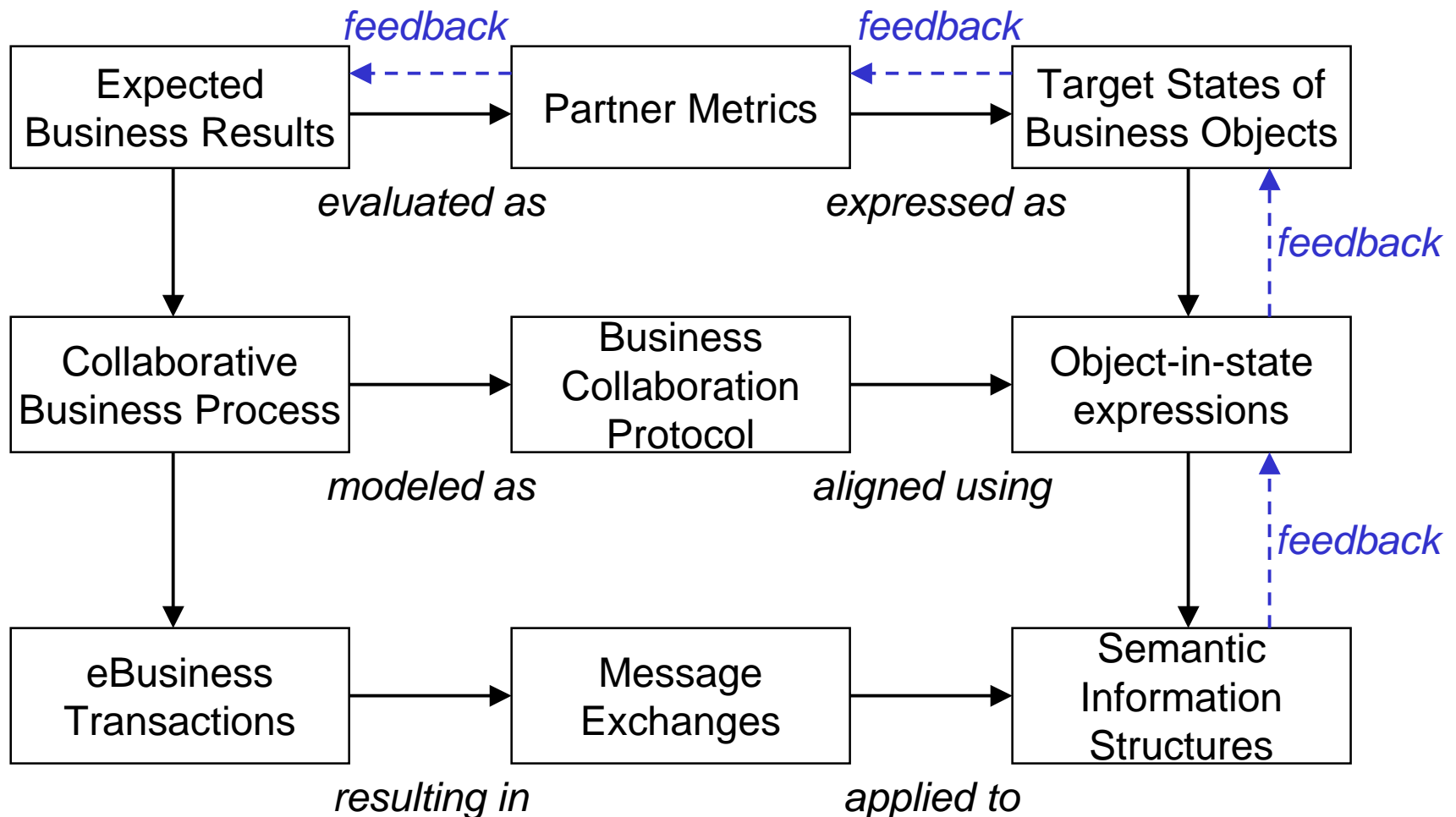
**Key**

- > Dependency
- > Interface



Source: eBTWG

# Elaboration of Business Objectives

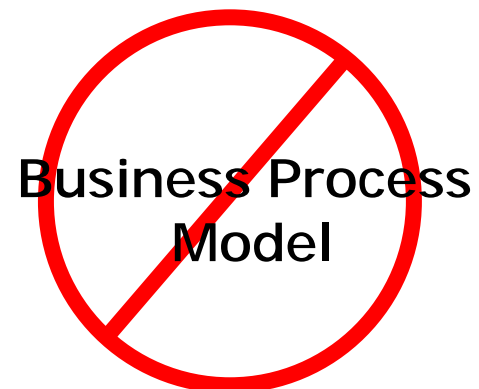


# Business Process Modeling

- Business domain model
  - Enumeration of business area, process area, business process, stakeholder, and resources
- Business collaboration model
  - Elaboration of collaboration use case, partner type, business process activity
- Business transaction model
  - Elaboration of transaction controls, protocol, transitions, and document flow
- Business transaction patterns
  - Abstraction for reuse and consistent application

# Business Collaboration Model

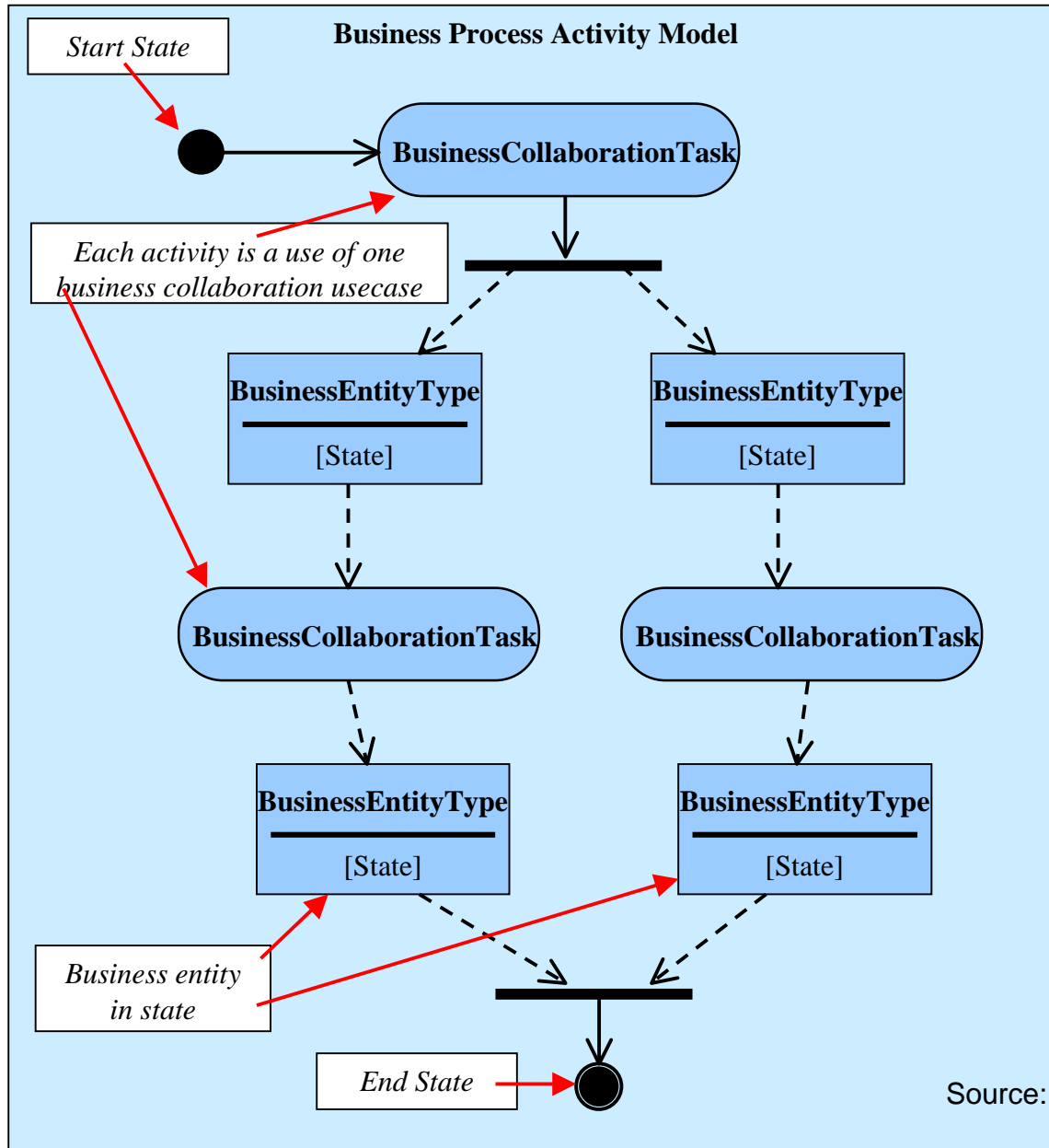
A prescription of the business and network protocols between independent business processes that permit the legally enforceable formation of commercial contracts between independent entities



# Not a Business Process Model

It describes a particular set of interactions between two or more business process models provided by independent business entities that collaborate to reach common or complementary goals.

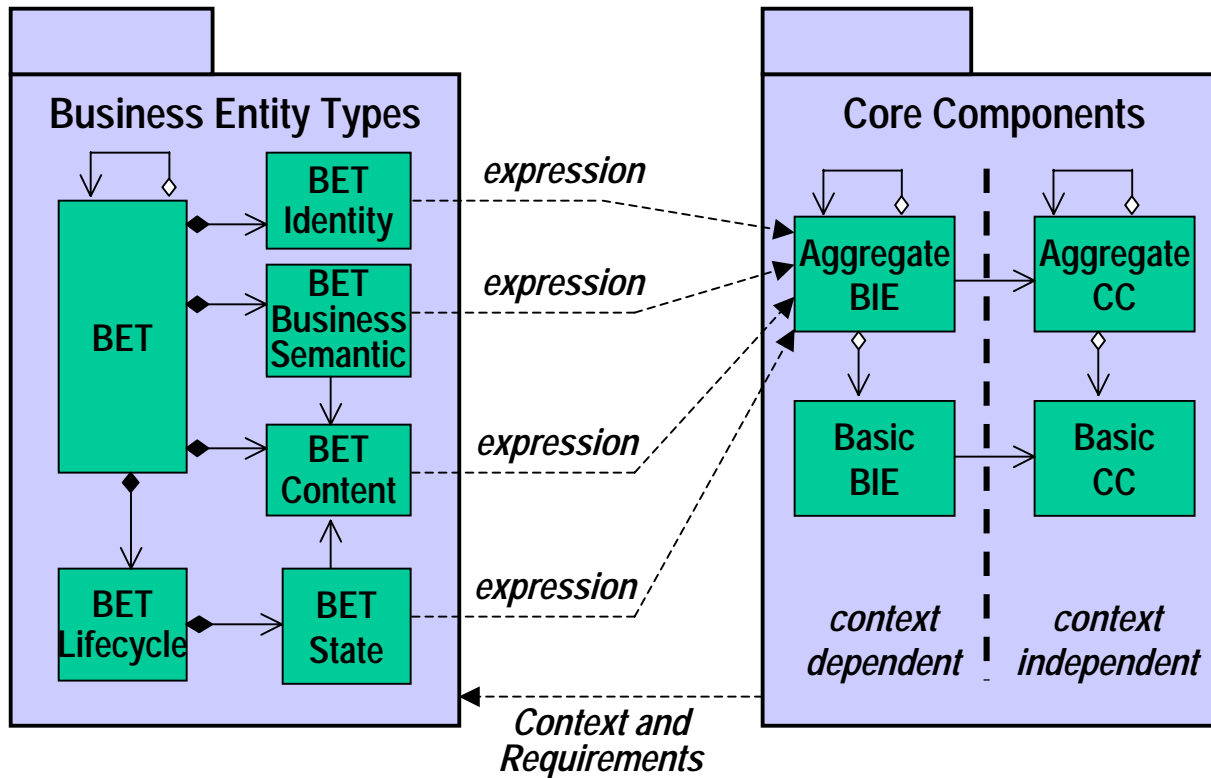
# Collaboration Activity Model



# Business Information Modeling

- Business domain view
  - Identification of business resources
- Business requirements view
  - Elaboration of economic elements, business entity types, business entity states
- Business transaction view
  - Selection of core components, business information entities, construction of business documents
- Business service view
  - Alignment of business information objects

# Core Components vs Business Entity Types



# Business Objects and States

- **Business States** are named states of Business Objects
  - which affect both trading partners
  - to which both partners must agree
  - which signify **milestones** in the life of a business deal.
- **Examples:** Order.accepted, Order.fulfilled, Order.cancelled, Payment.received

# Business State Alignment

- Means both trading partners must agree on the **state** of each **Business Object** at the end of each **Business Transaction**.
- For example, the Order is not accepted until both partners **agree explicitly** that it is accepted.
- The Business Transaction protocol must insure that **both partners** transition to the new Business State - **or neither** does.
- Think “**electronic handshake**”.

# REA Ontology

- Stereotype business objects as
  - Commitments to provide a product or service
  - Resources being exchanged
  - Events of the exchange
  - Agents participating in the Resource exchange
  - Claim for a Resource in an asynchronous exchange

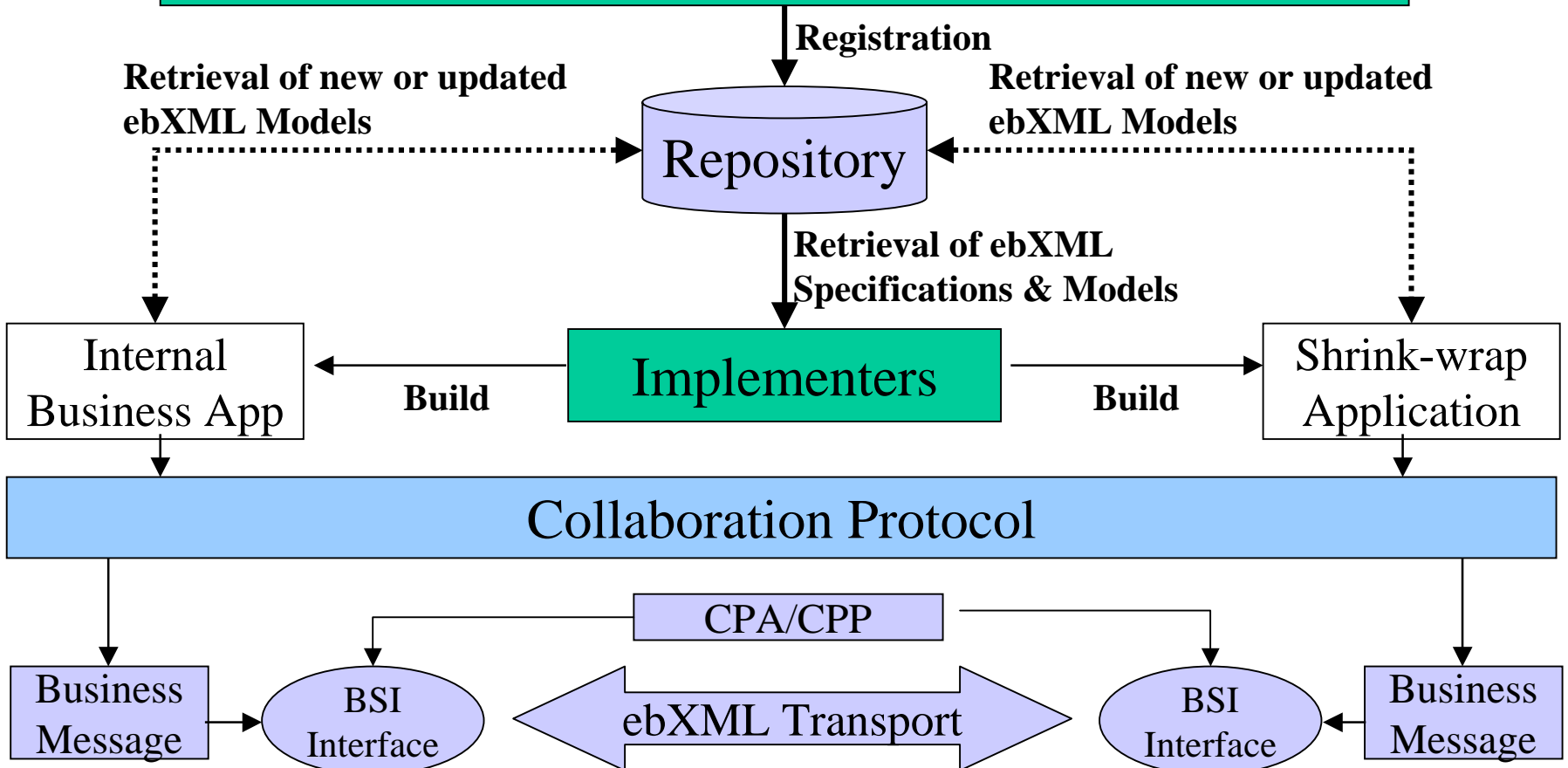
# Put it all together

- Business objectives and commitments are expressed in terms of objects reaching state
- Business collaborations are orchestrated activities resulting in resource exchange
- Business transactions align partner process and object states
- Business services execute specific business actions in the context of the collaboration

# ebXML Architecture

Business Process and Information Models

UML to XML conversion



# Model Layering

- Collaborative objectives measure business states known to multiple parties
- Collaborative processes orchestrate alignment of business state
- Collaborative business states are based on information available to multiple parties
- Business message and business service specifications coordinate information required to compute business state

# Execution Layering

- Collaboration management monitors and optimizes business compliance
- Collaboration protocol layer orchestrates business activities
- Business object layer proxies monitor collaborative business states
- eBusiness transaction layer aligns information across partner services

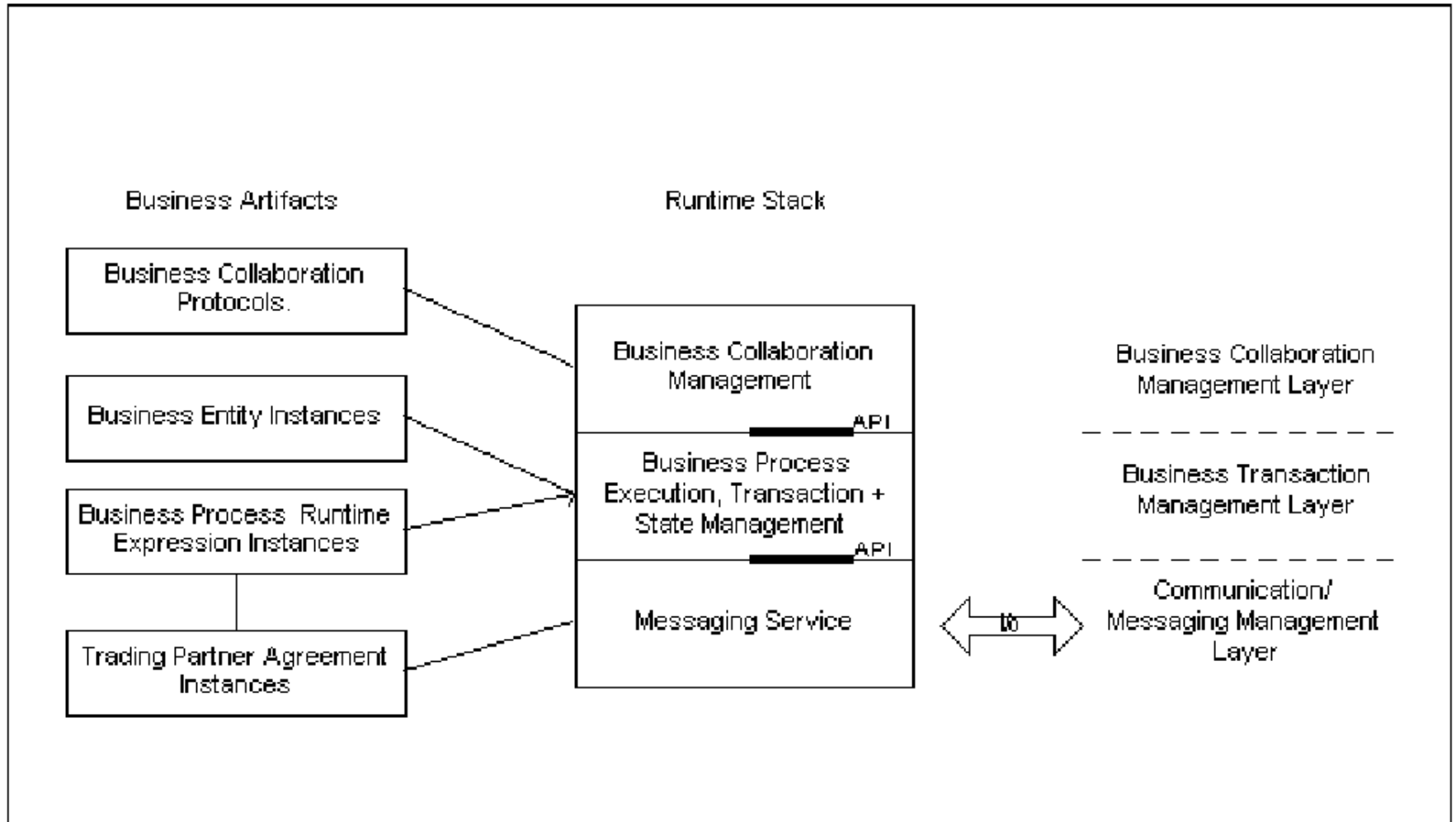
# Business States are Business Events

- Business collaborations consist of a graph of dependencies between objects and processes
- When a business object reaches a collaborative business state, it in effect triggers a business event
- Business events are the lightweight glue for business collaborations

# ebXML provides

- Value through Business Collaboration
- Ontology through Business Entities and Core Components
- Alignment through Transactions
- Connectivity through Messaging, Profiles and Protocol Agreements
- Discovery through Registry / Repository

# ebXML Runtime Stack



# Thank You!

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ebXML: <http://www.ebxml.org>

UN/CEFACT eBusiness Architecture:

[http://webster.disa.org/cefact-groups/tmg/downloads/eBWG/drafts/eBA-TS\\_V0pt83.zip](http://webster.disa.org/cefact-groups/tmg/downloads/eBWG/drafts/eBA-TS_V0pt83.zip)

UMM:

<http://webster.disa.org/cefact-groups/tmg/downloads/BPWG/reference/UMM-N090R10/UMM-N090R10-ALL.zip>