ECIMF Business Context Interoperability

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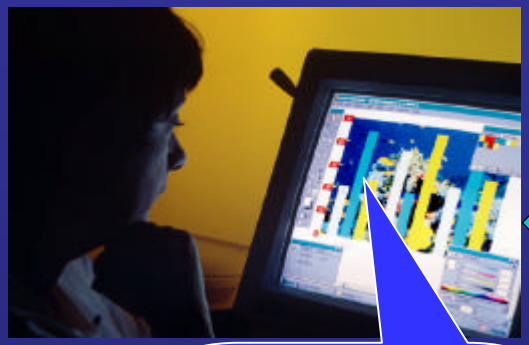
Interoperability challenge



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Business context

Semantics

Business processes

Syntax

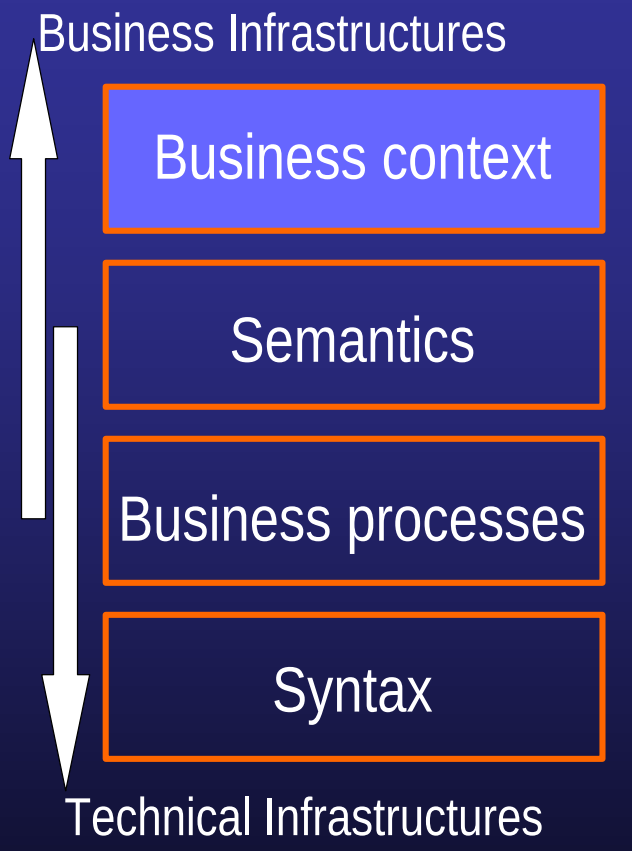
ECIMF Interoperability Framework

5000€/pcs

- 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

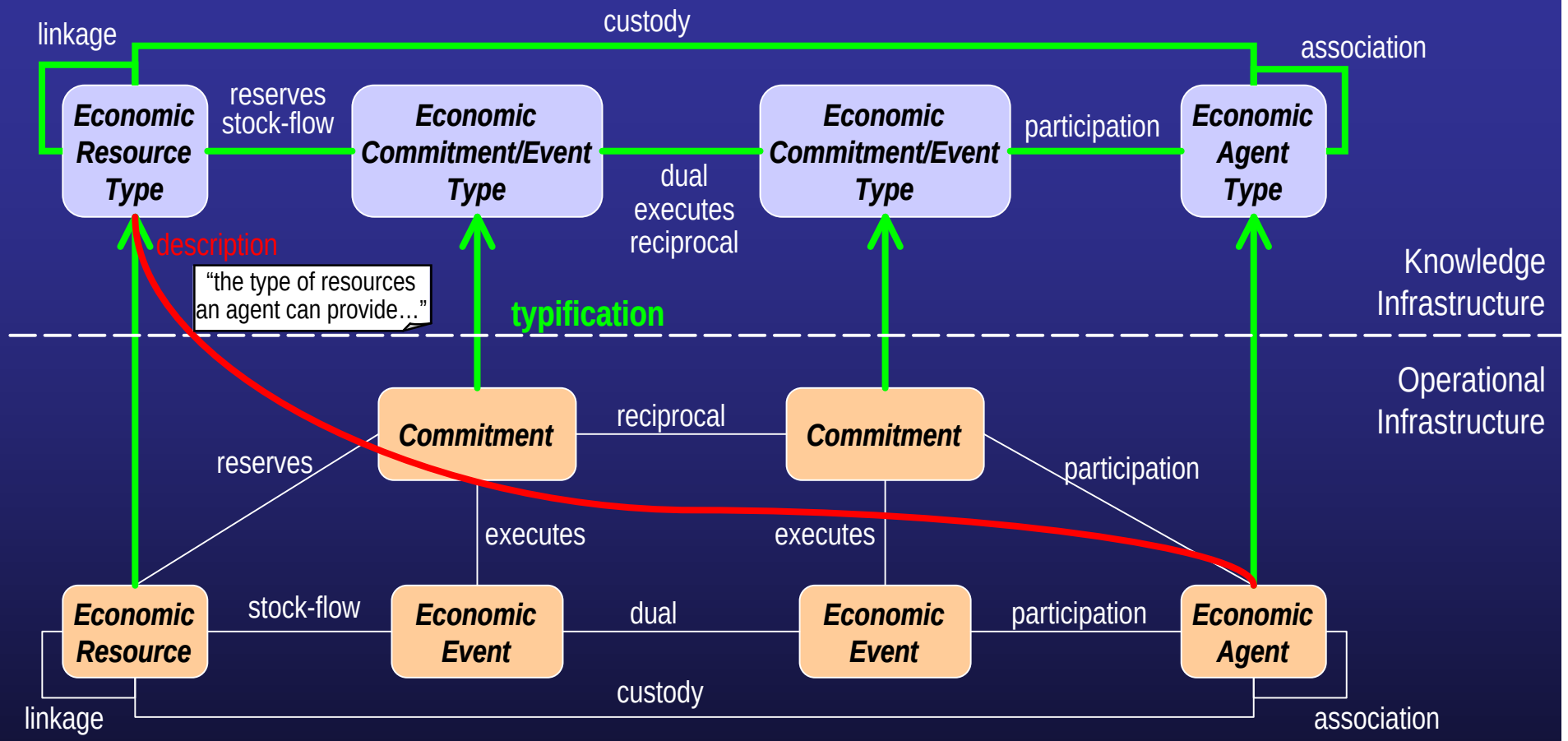
- ECIMF Interoperability Model
  - Interop. of technical infrastructures
  - Interop. of business infrastructures
- ECIMF Business Context Modeling
  - Captures economic aspects, based on REA
    - **Resources**: what is traded
    - **Events**: when and how it happens
    - **Agents**: who is involved
    - 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

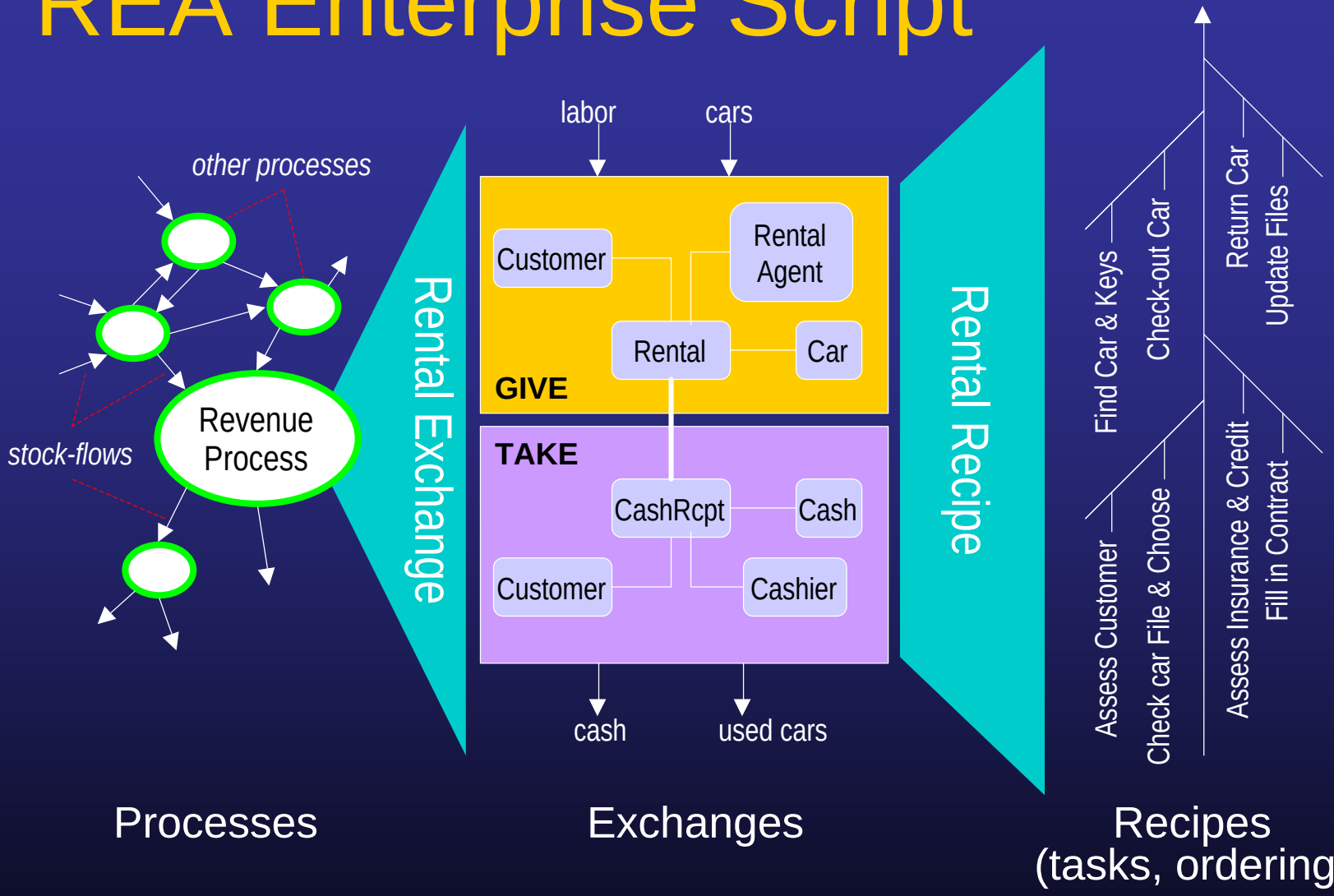
- Informal process (email discussions)
- Started from the common use of REA framework
  - Initial ECIMF adoption of REA and UMM
  - ebXML use of UMM Economic Elements (based on simplified REA)

REA Enterprise Modeling



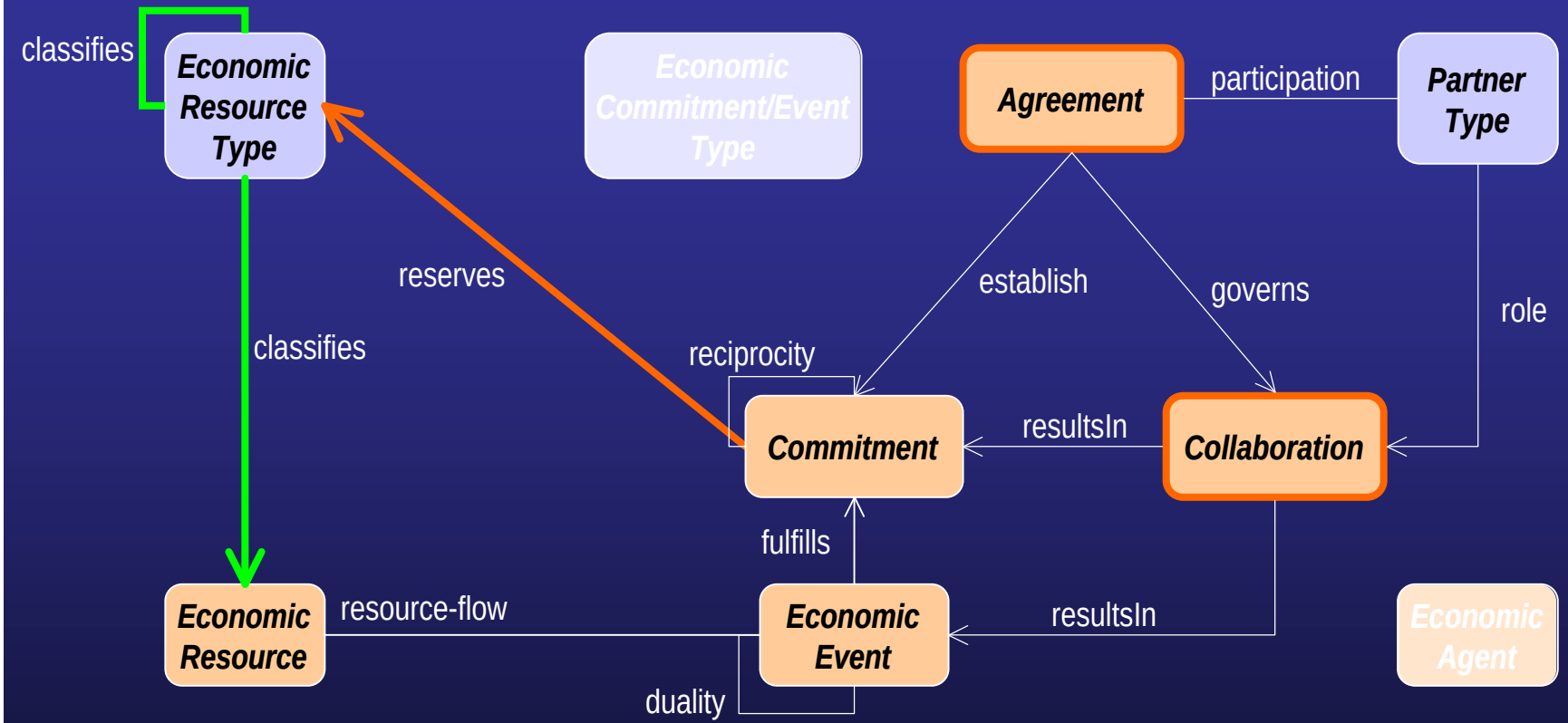
- Economic exchange as a central concept
- Recently extended to provide a comprehensive meta-model
- Originally used non-standard modeling notation (now uses UML)

REA Enterprise Script



- 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

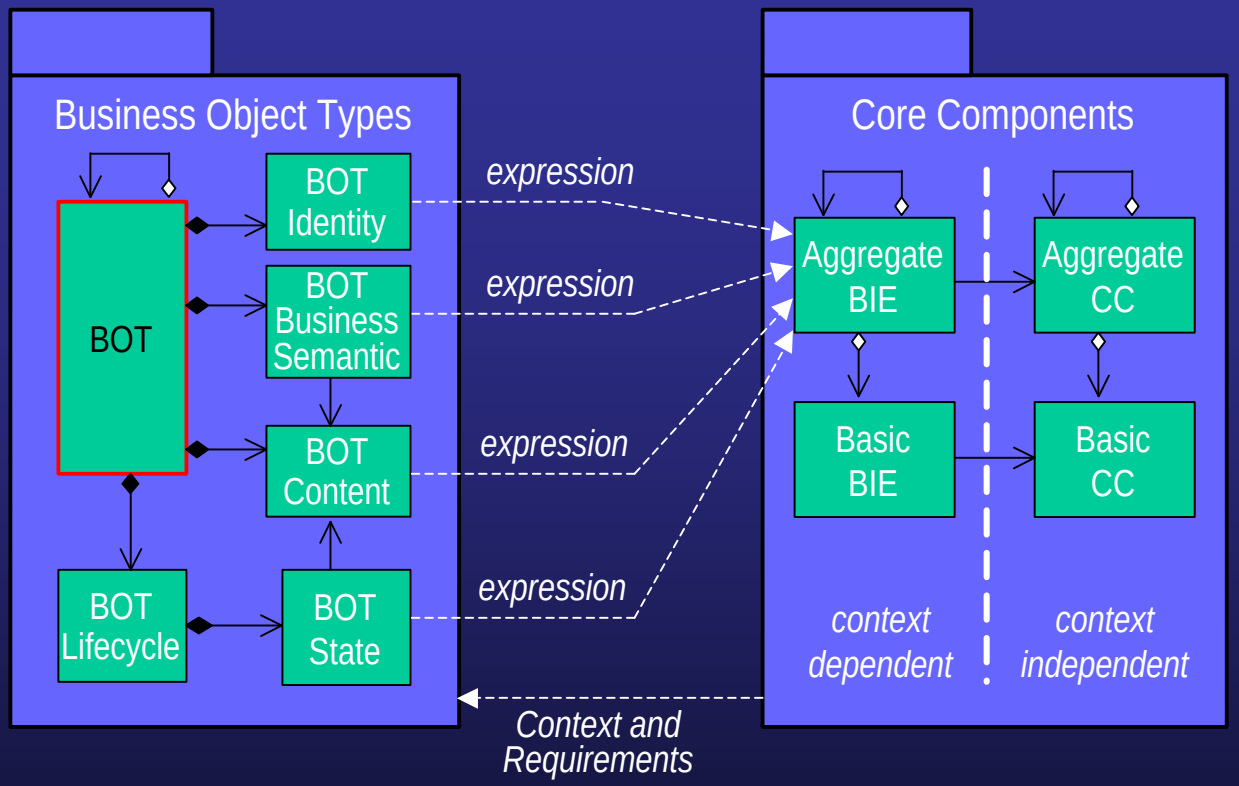
ebXML Economic Modeling Elements

- 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

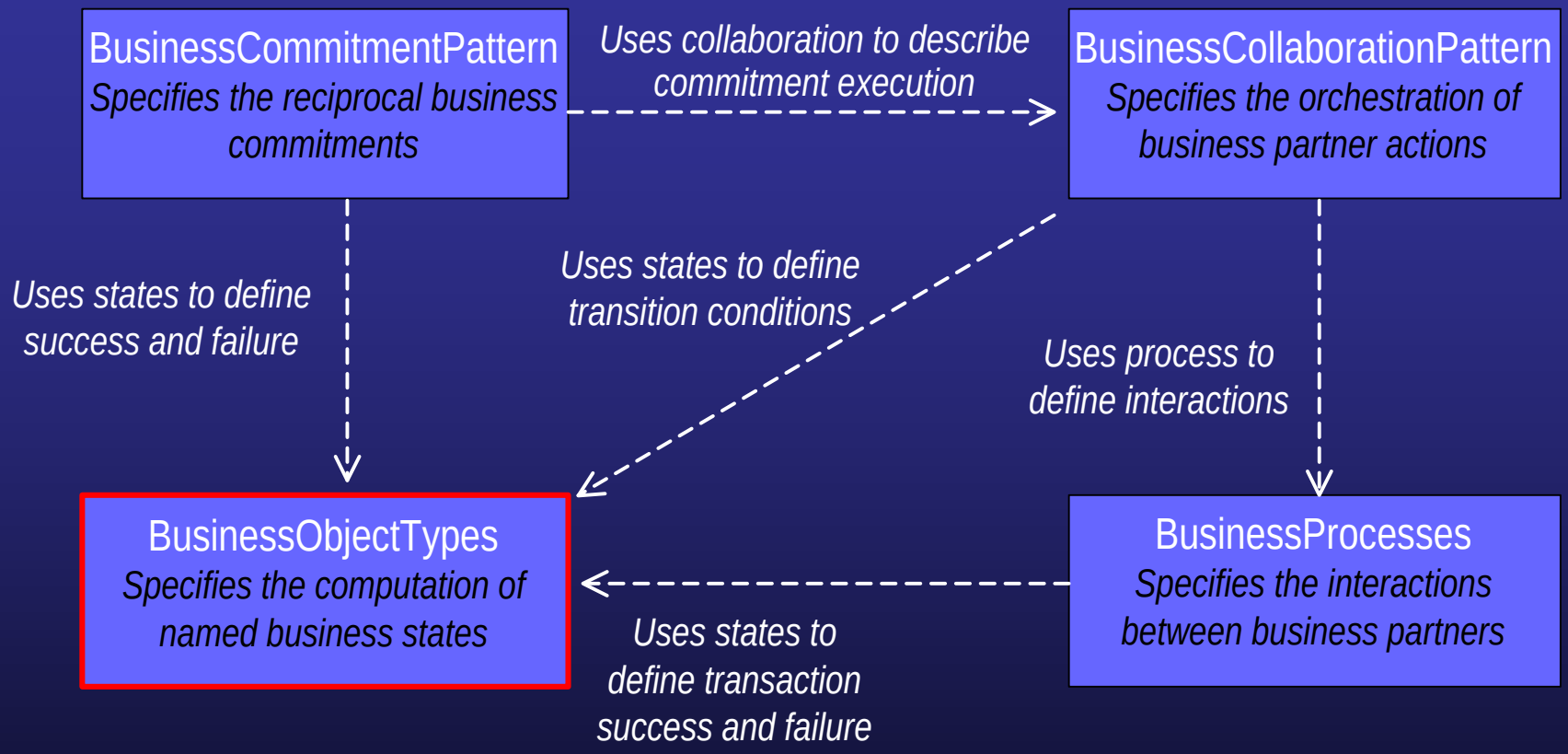
- e-Business Transitionary Working Group
  - Continuation of ebXML (excluding TRP)
- Business Information Object Types team
- Business Collaboration Patterns and Monitored Commitments team

CC, BIE, ABIE, BOT…



- BOTs consist of:
  - context-modified CCs
  - business semantics
  - state model (and current state)

BOTS, Commitments & Collaborations



- 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

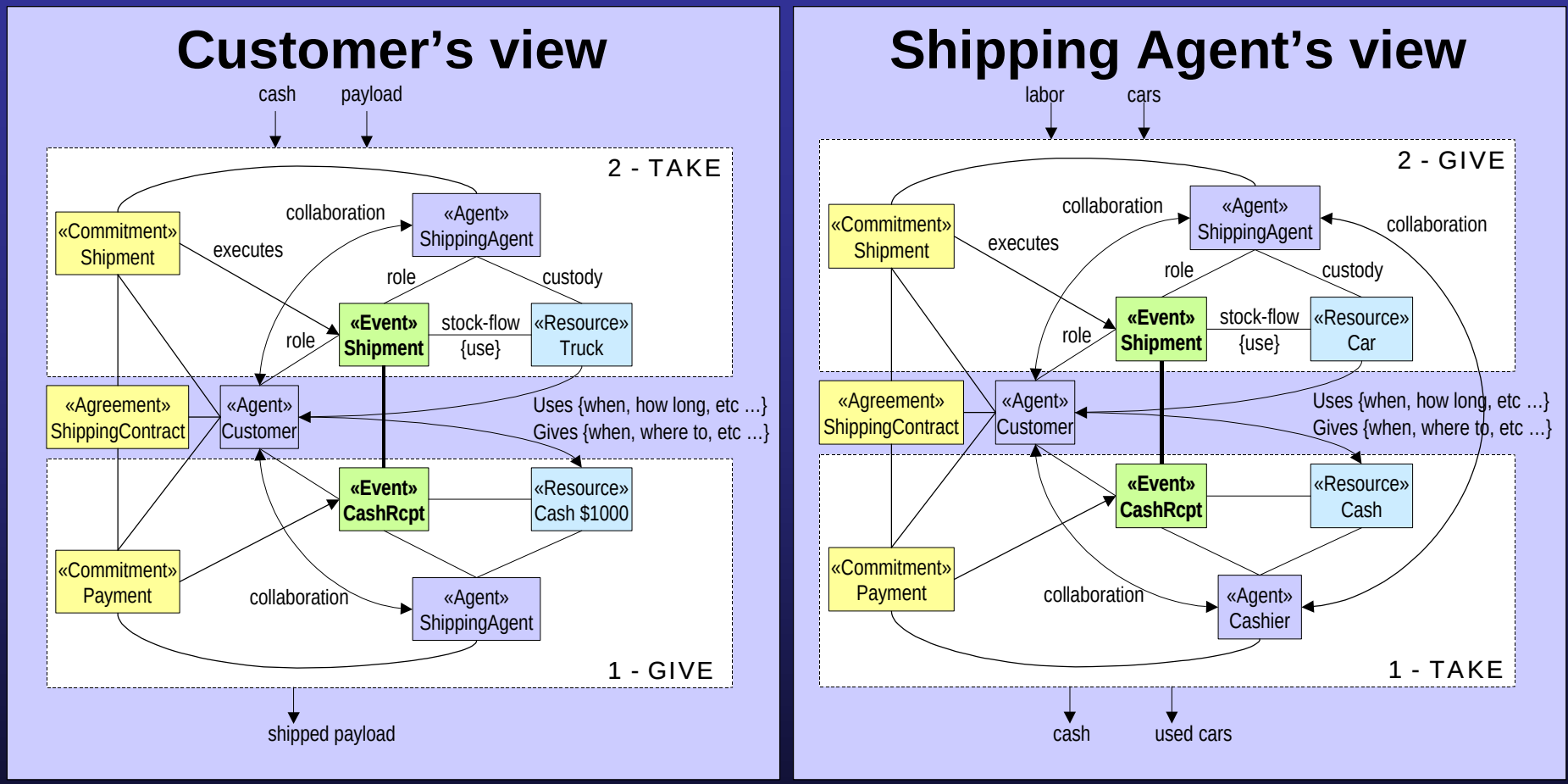
Interoperability: different Business Contexts

- 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

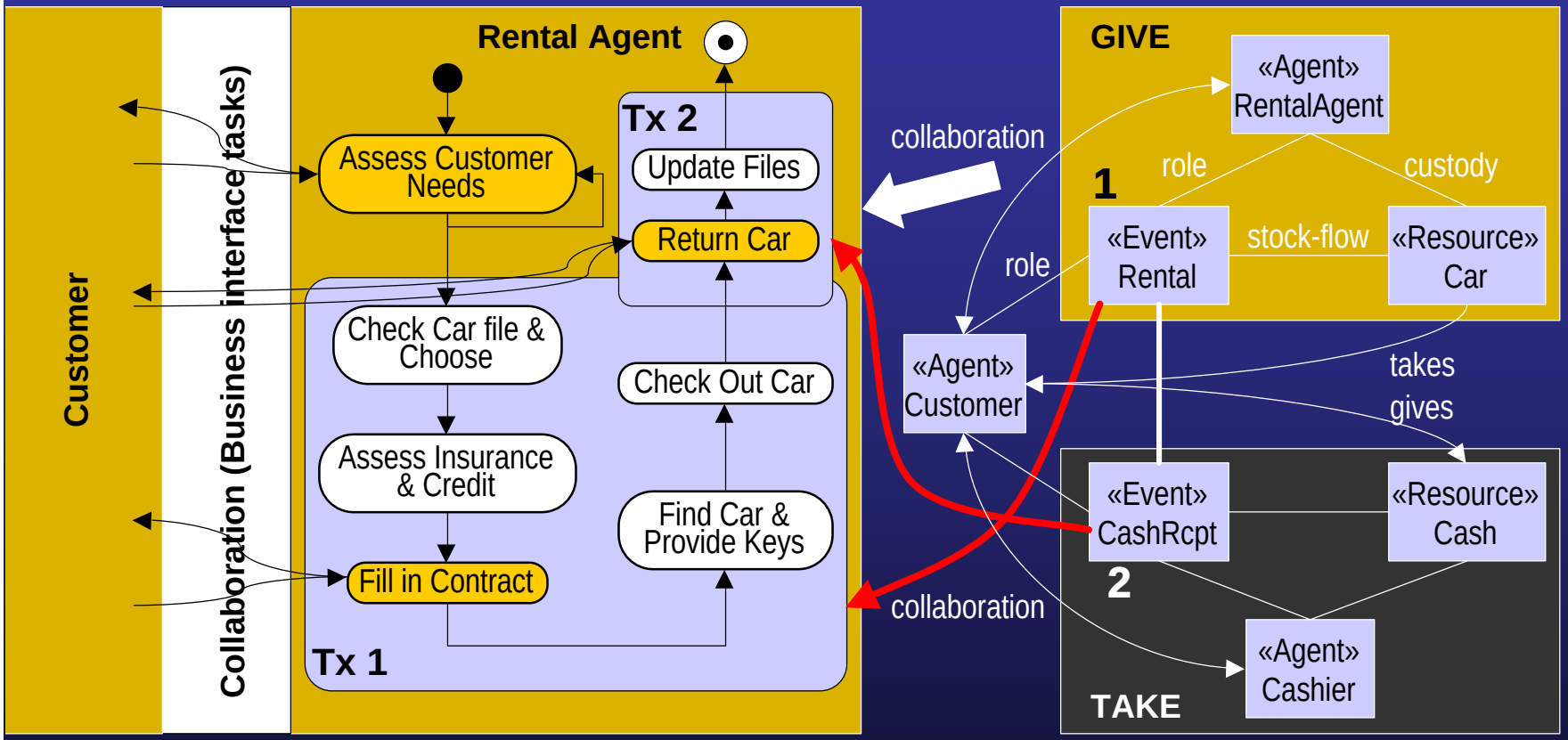
- Business Context Models help to understand business-related constraints in integration scenarios:
  - Economic exchange view
    - Events sequence constraints
    - Stock management constraints
    - Legal constraints
  - Business process view
    - High-level transaction boundaries
    - Relationship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

Example Business Context models



- 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



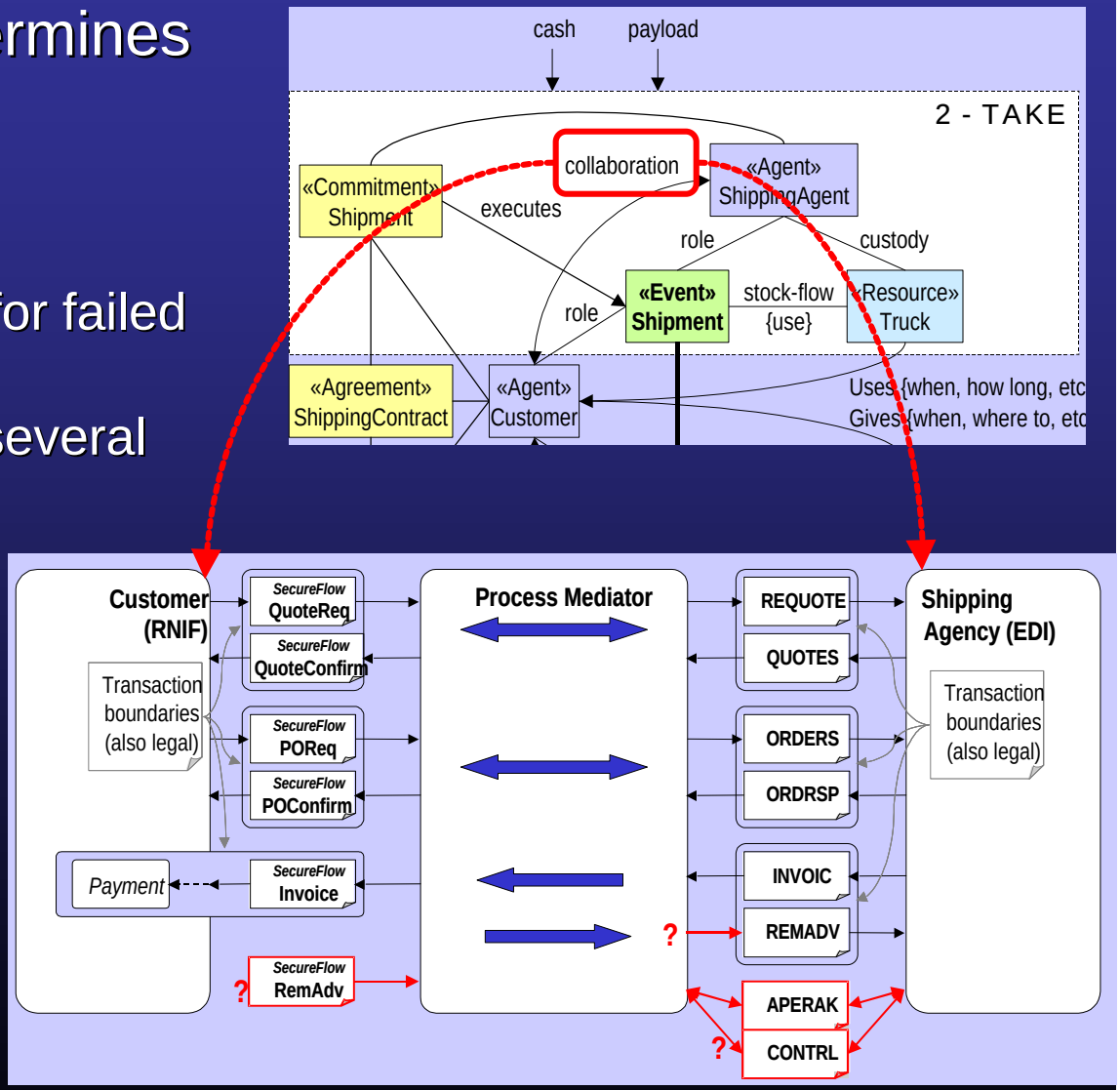
- Customer and RentalAgent follow the same collaboration protocol
- Customer, RentalAgent and Cashier execute commitments according to the Contract
- Rental occurs first, and then CashReceipt (within time constraints)
- The transaction boundaries are related to Events (and legal constraints)

Example: Application of the models

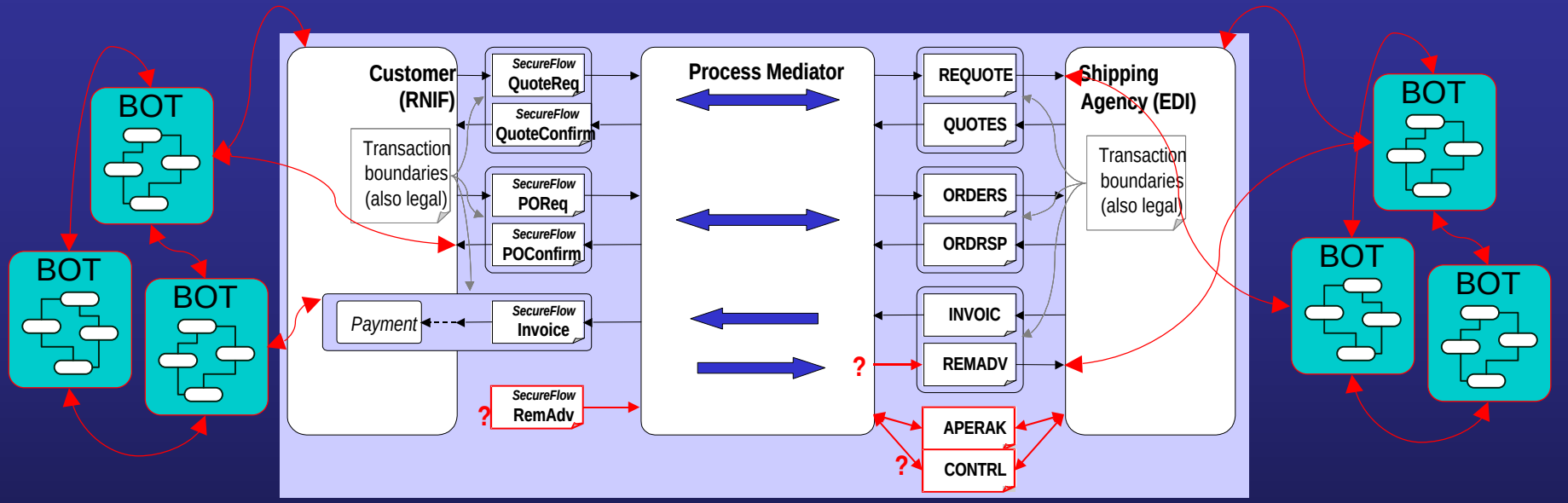
- Business Context Equivalence:
  - Both partners play complementary roles
  - Both partners expect first Rental, then CashRcpt
    - They still need to agree on the exact timing!
    - The collaboration tasks have to be grouped into 2 transactions, which correspond to Events
  - Both agreed to the type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

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