

Interaction Modeling in BPMN 2

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Overview

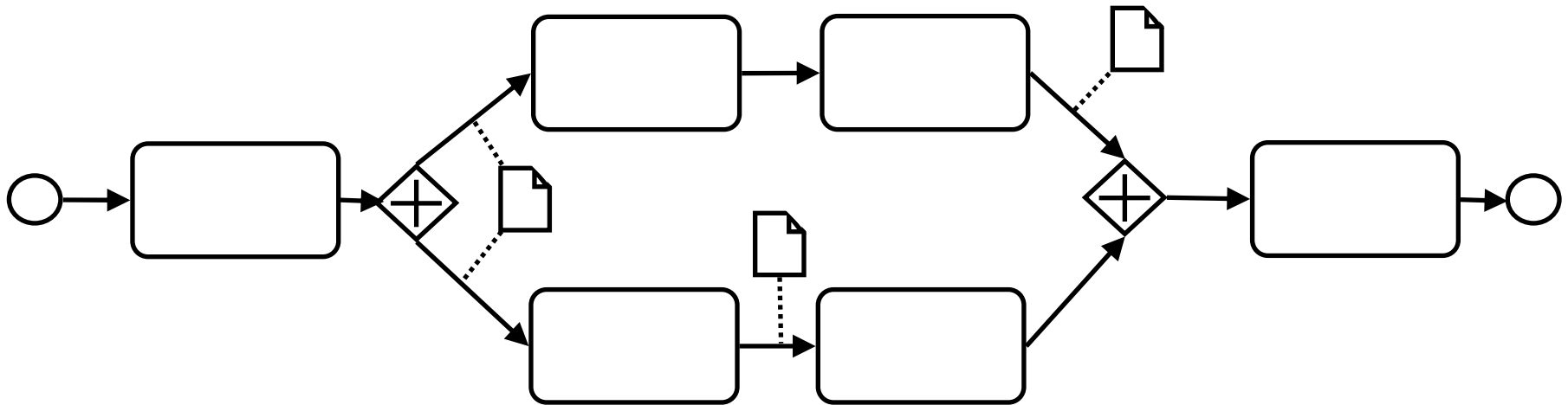
- **Business process background.**
- **Interaction basics.**
- **Sequencing and grouping interactions.**
- **Public and private processes.**
- **Message routing to processes.**

Business Process

- **More general than it sounds:**
 - Inside and between businesses.
 - Varying breadth: departments, enterprises, industries.
- **Includes:**
 - Interactions with business partners and customers.
 - Processes within departments and within industries.

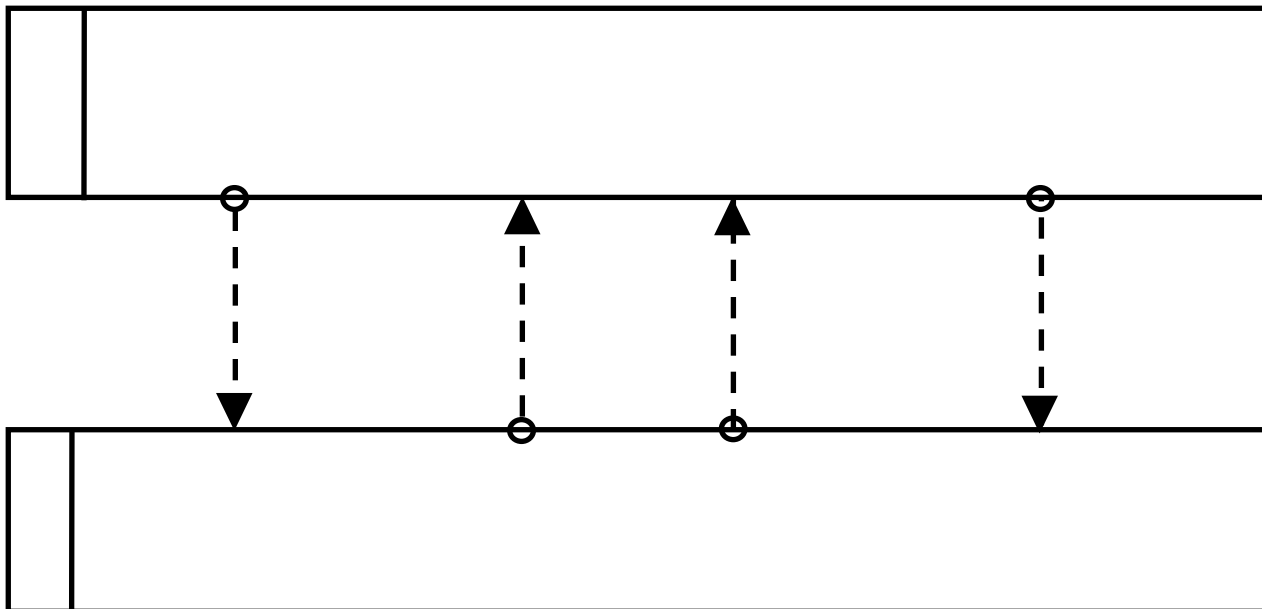
Orchestration (“Process”)

- **Inside businesses** (departments / industries).
- **BPMN as “flow” chart:**
 - Sequence, input / output flow.
 - Conditions on flows.



Interactions

- **Between businesses** (departments / industries).
- **“Messages,”** but can be documents, car parts).
- **Does not model business internals.**



Business Services From Products

- **Producers becoming service providers**
 - Produce a cell phone Provide mobile services
 - Fill an order Provide maintenance services
- **Benefits:**
 - Increased market:
 - Provide multiple services on a single product
 - Differentiation
 - Add services competitors don't have
 - Core business focus:
 - Partner for non-core services
- **Business services require ongoing interaction with customers and partners.**
 - Customers and partners agree on the expected interactions
 - What information or goods are needed when?
 - How are complaints and unusual situations handled?
 - Are followups scheduled?

Modeling Interactions

- **Model interactions to:**
 - **Gather and share expertise**
 - **Coordinate and optimize interactions**
- **Benefits:**
 - **Customer retention, lower costs:**
 - **Reduce unnecessary or unsatisfactory interactions**
 - **Develop new business services**
 - **Combine and adapt existing services**

Interaction Basics

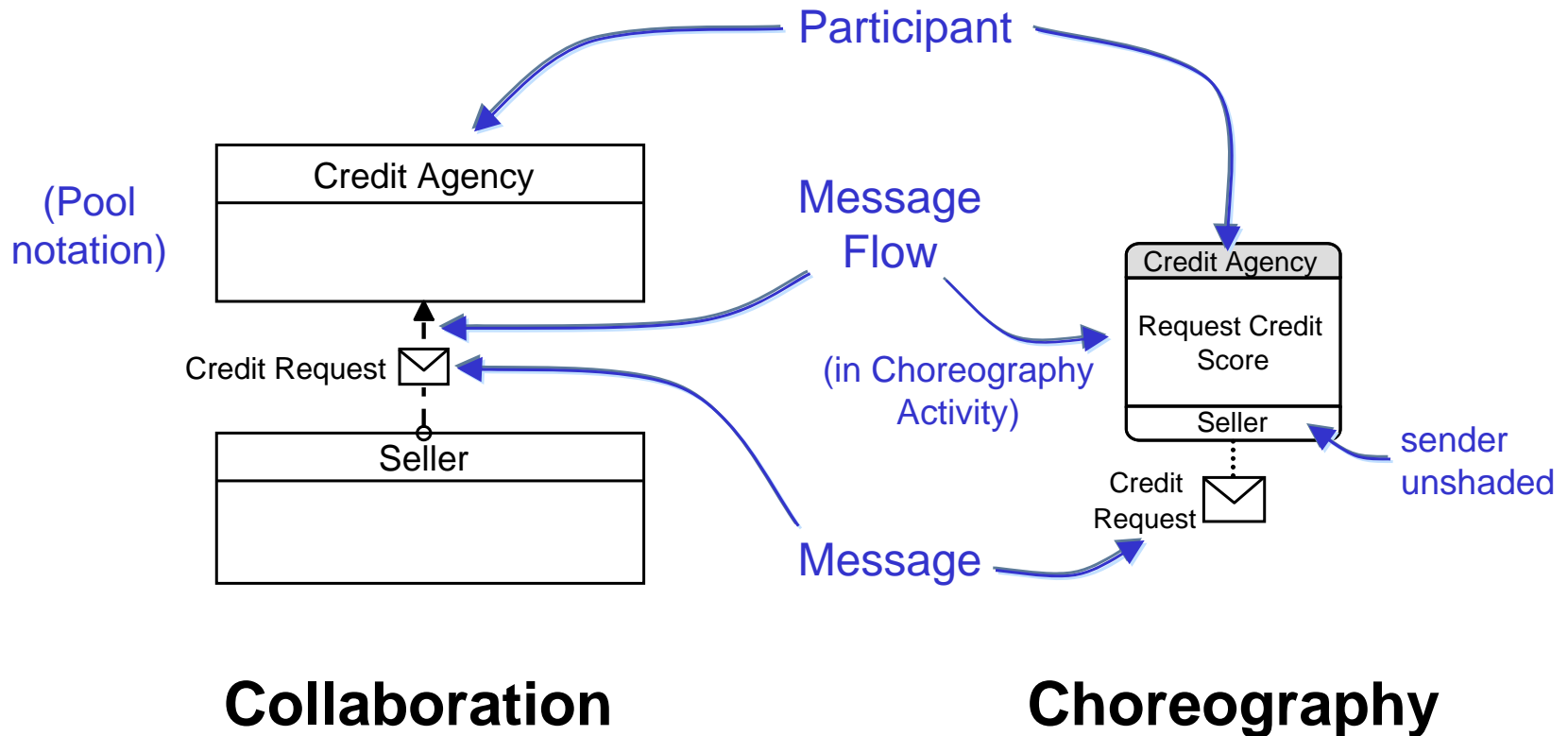
- **All interaction diagrams have Participants that send Messages to each other.**
- **Participants**
 - **Can be “roles” in the interaction, such as Seller and Buyer**
 - **... or individuals, such as WalMart or US Government**
 - **Any scale: departments, businesses, or industries**

Interaction Basics

- **Messages**
 - ... are things sent between participants
 - Can be physical or informational
- **Messages Flow between Participants**
 - ... at certain points during an interaction
 - The same message can be carried by more than one message flow

Interaction Basics

- **BPMN 2 has two notations for the basic interaction elements:**

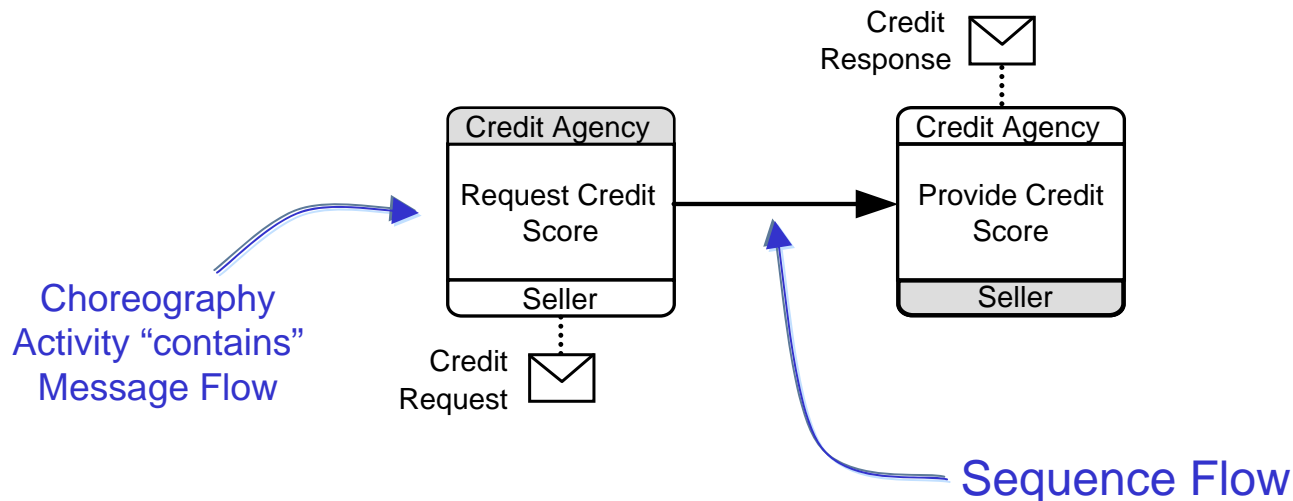


Interaction Basics

- **Collaboration shows Message Flow explicitly as arrows, and Participants more prominently.**
- **Choreography shows Message Flow in an “activity-like” notation, and Participants less prominently.**
- **Why?**

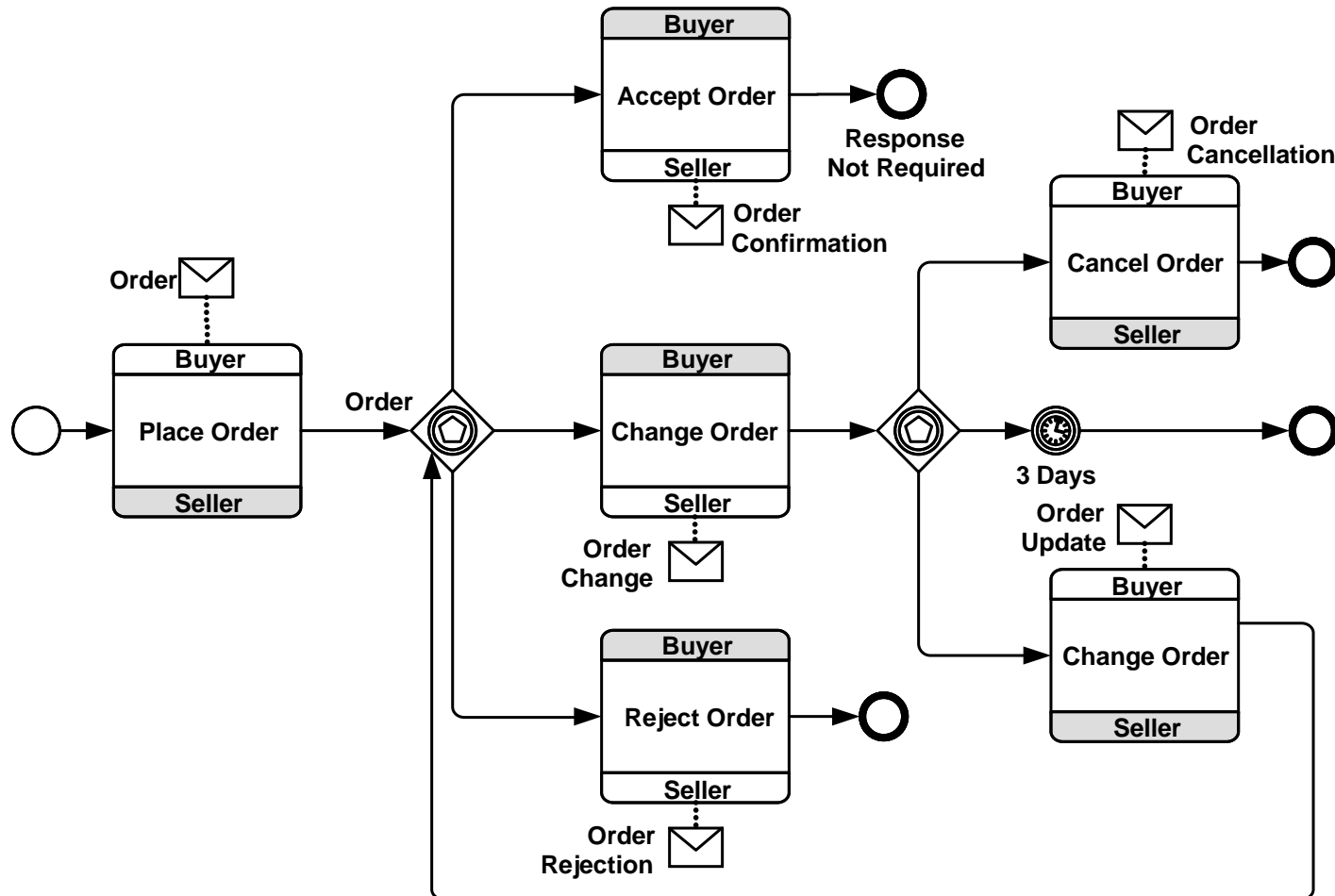
Message Flow Sequence

- **Some messages flow before others during the interaction.**
- **Choreography diagrams show this directly as sequence flow between Choreography Activities.**



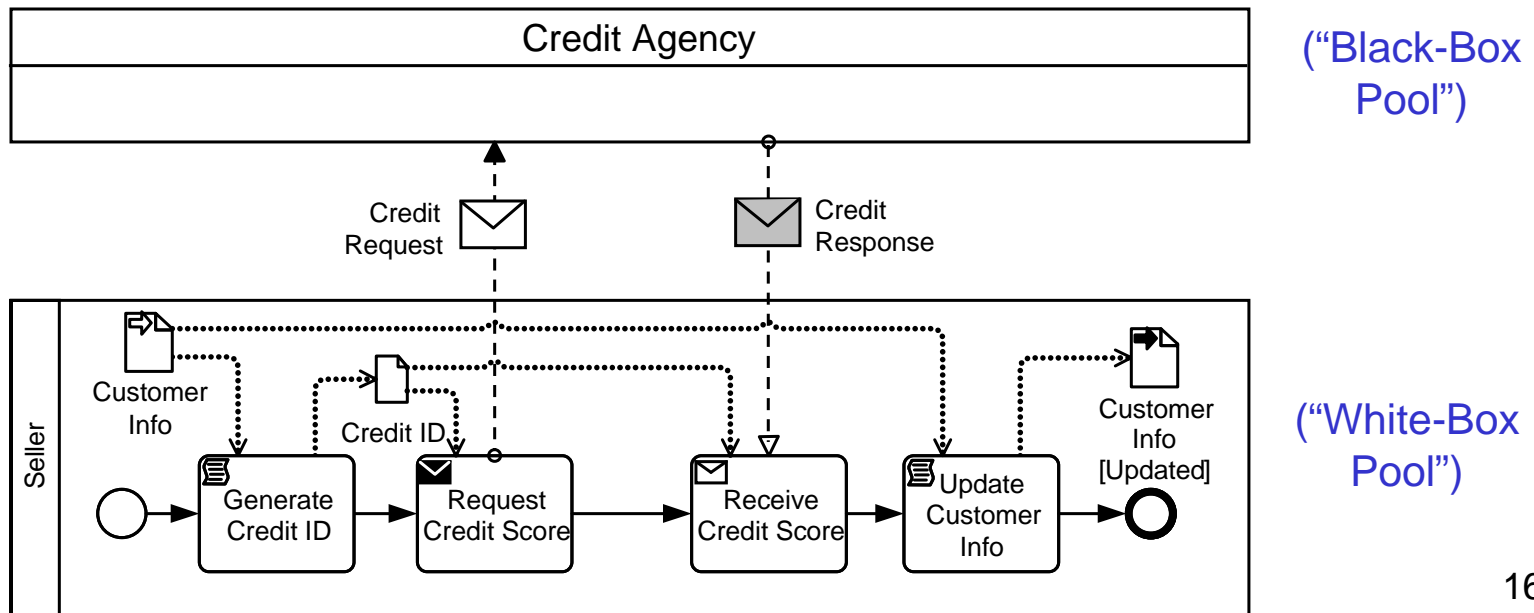
Message Flow Gateways

- Choreography diagrams support gateways and events



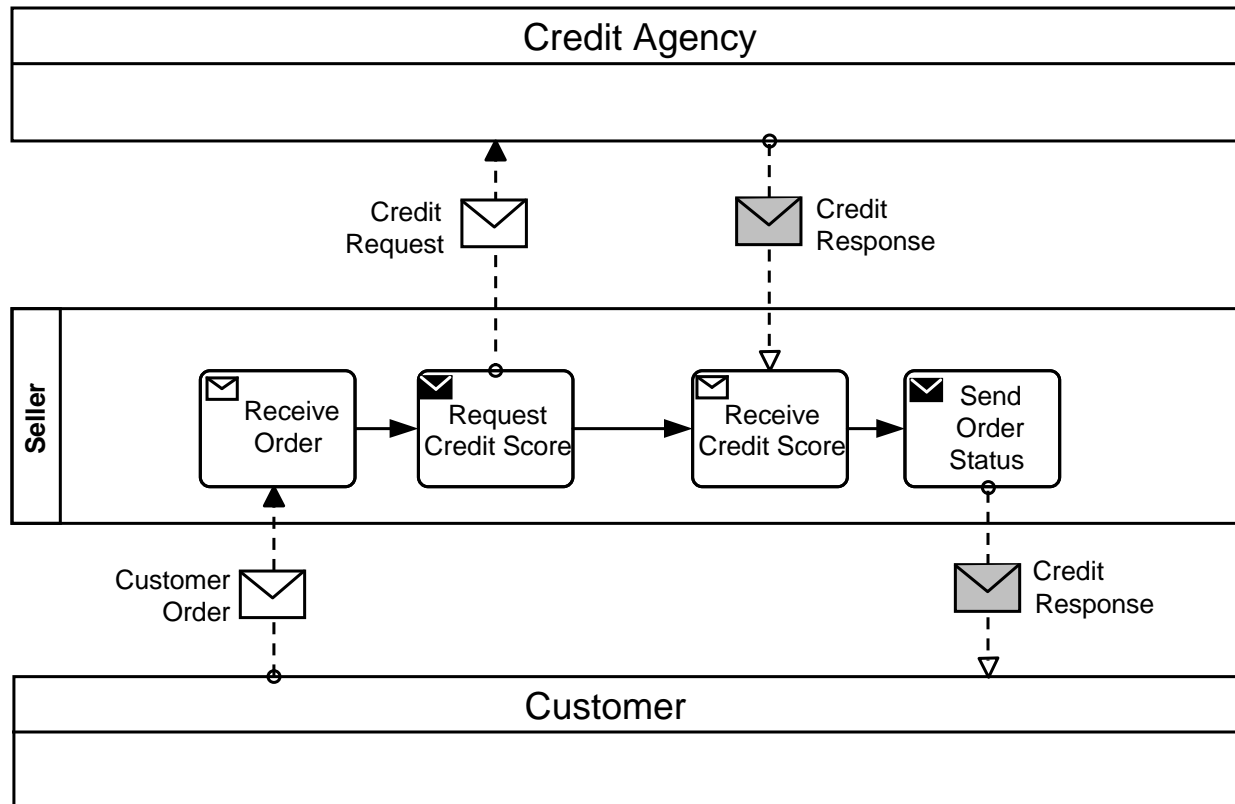
Processes in Participants

- Processes can shown inside participants on Collaboration diagrams.
 - Message flow can connect to activities.
 - Indirectly sequencing message flow.



Multiple Participants

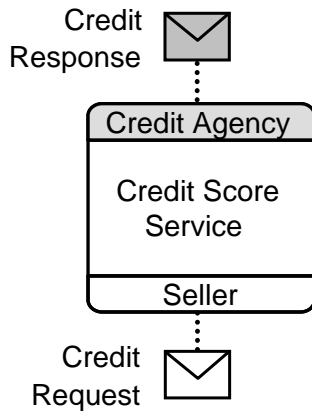
- Processes might send and receive from multiple participants
 - Which participants, and when?
 - Include Collaboration in Process definition.



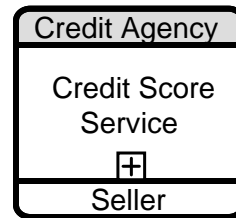
Collaboration
is part of
Process
definition

Grouping Message Flow

- In Choreography, similar to subprocesses and calling processes.

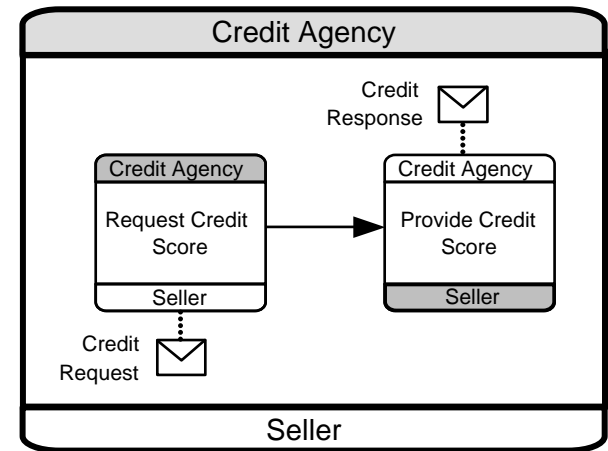


Choreography Task
with Two Message Flows
(message sequence
by identifying the initiator)



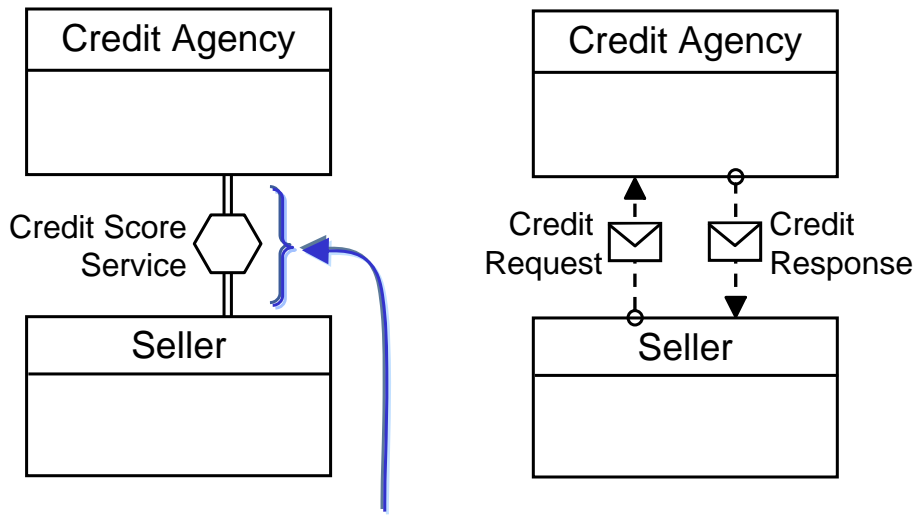
(Choreography Subprocess
has thin border. Calling Global
Choreography Tasks omits
“plus” marker)

Choreography Subprocess
or Call Choreography Activity
(nested choreography has
message sequence)



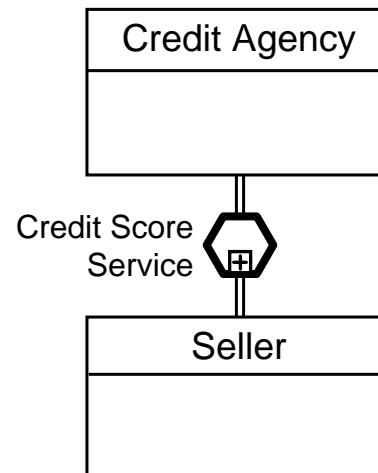
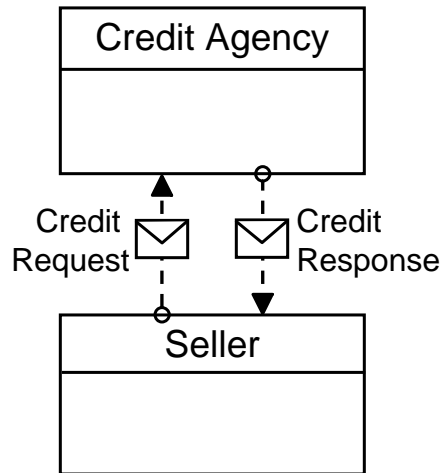
Grouping Message Flow

- Collaborations use Conversations.



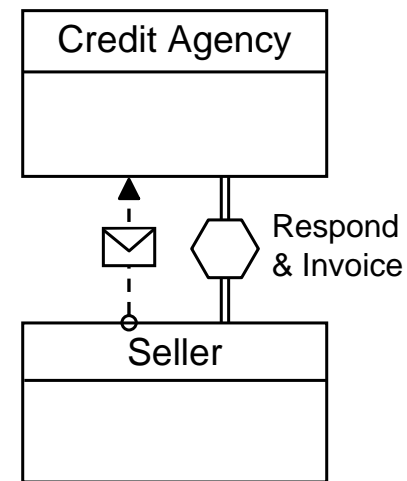
Conversation

Conversation with Message Flow Only
(no nested conversations)



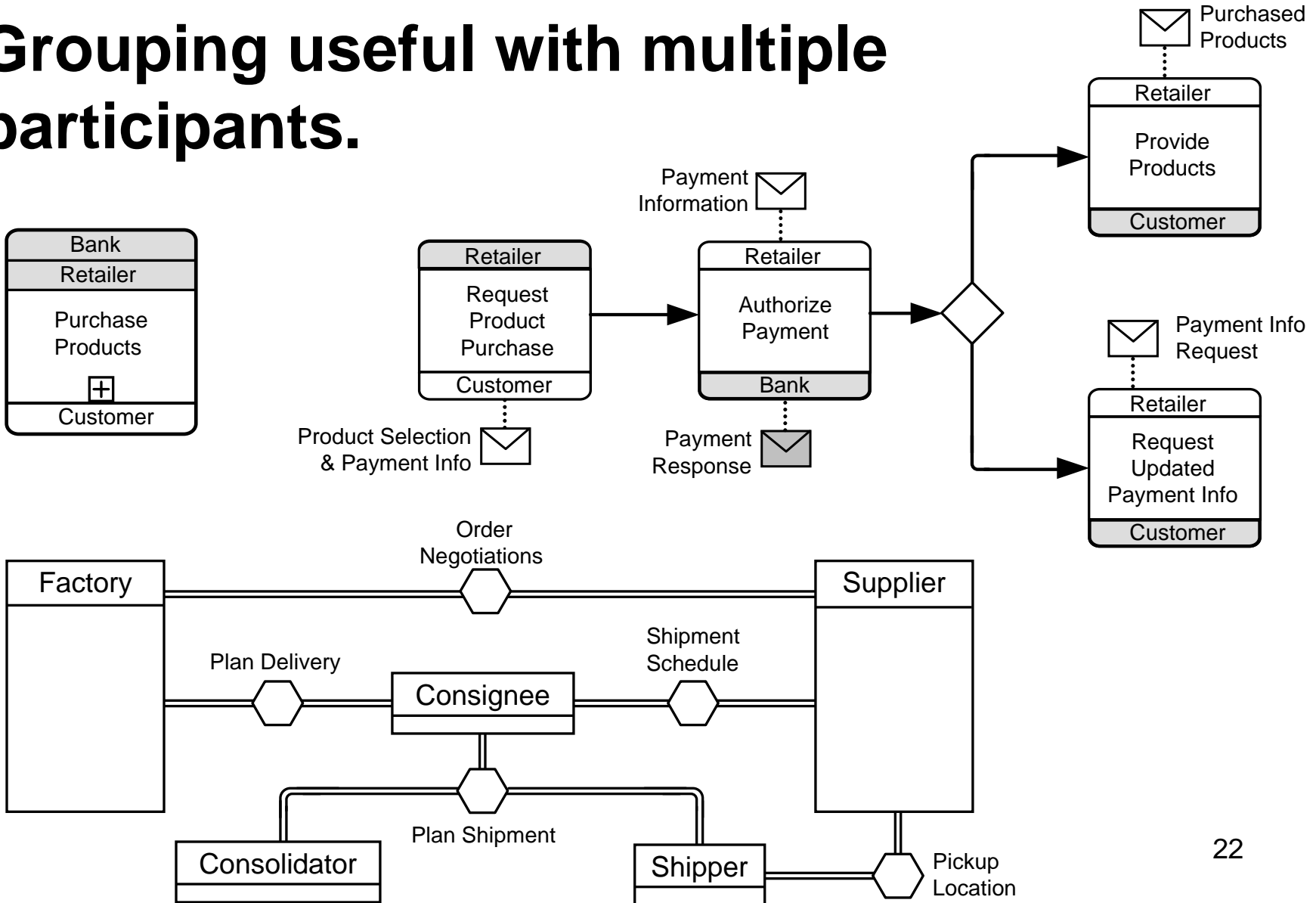
(Sub-Conversation has thin border.
Calling Global Communications omits
the "plus" icon)

CallConversation or SubConversation
(nested conversations)

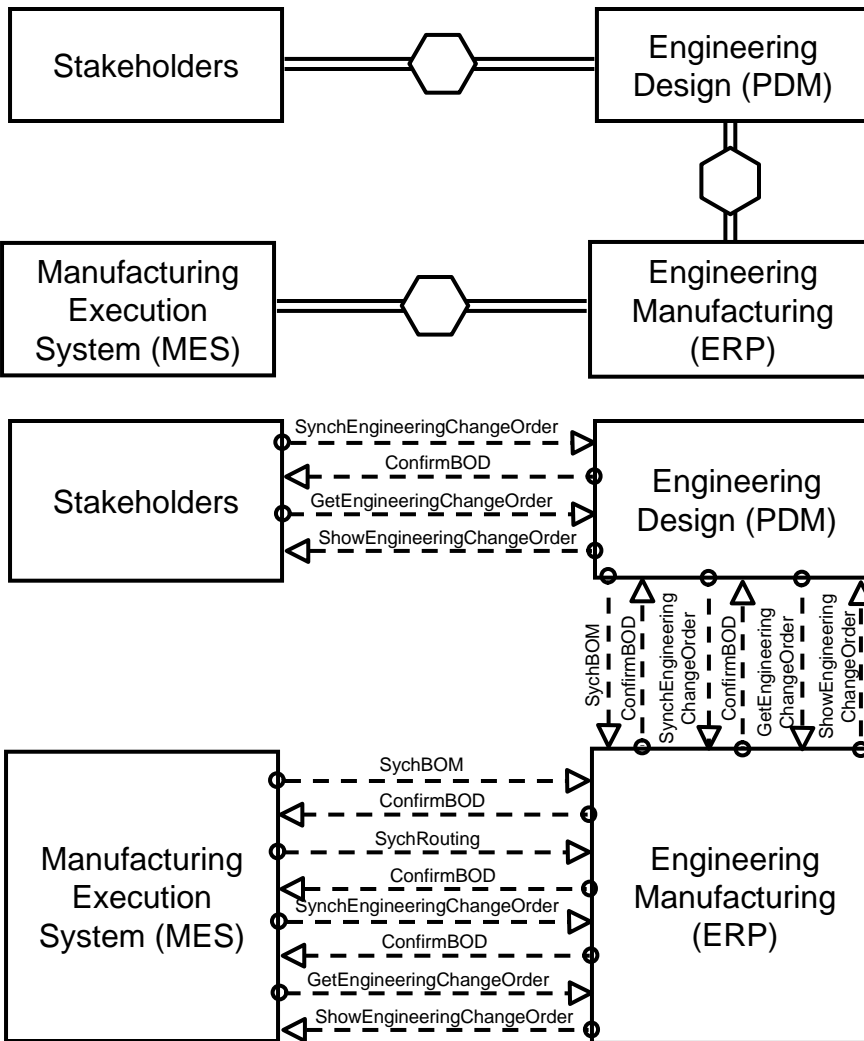


More Than Two Participants

- **Grouping useful with multiple participants.**



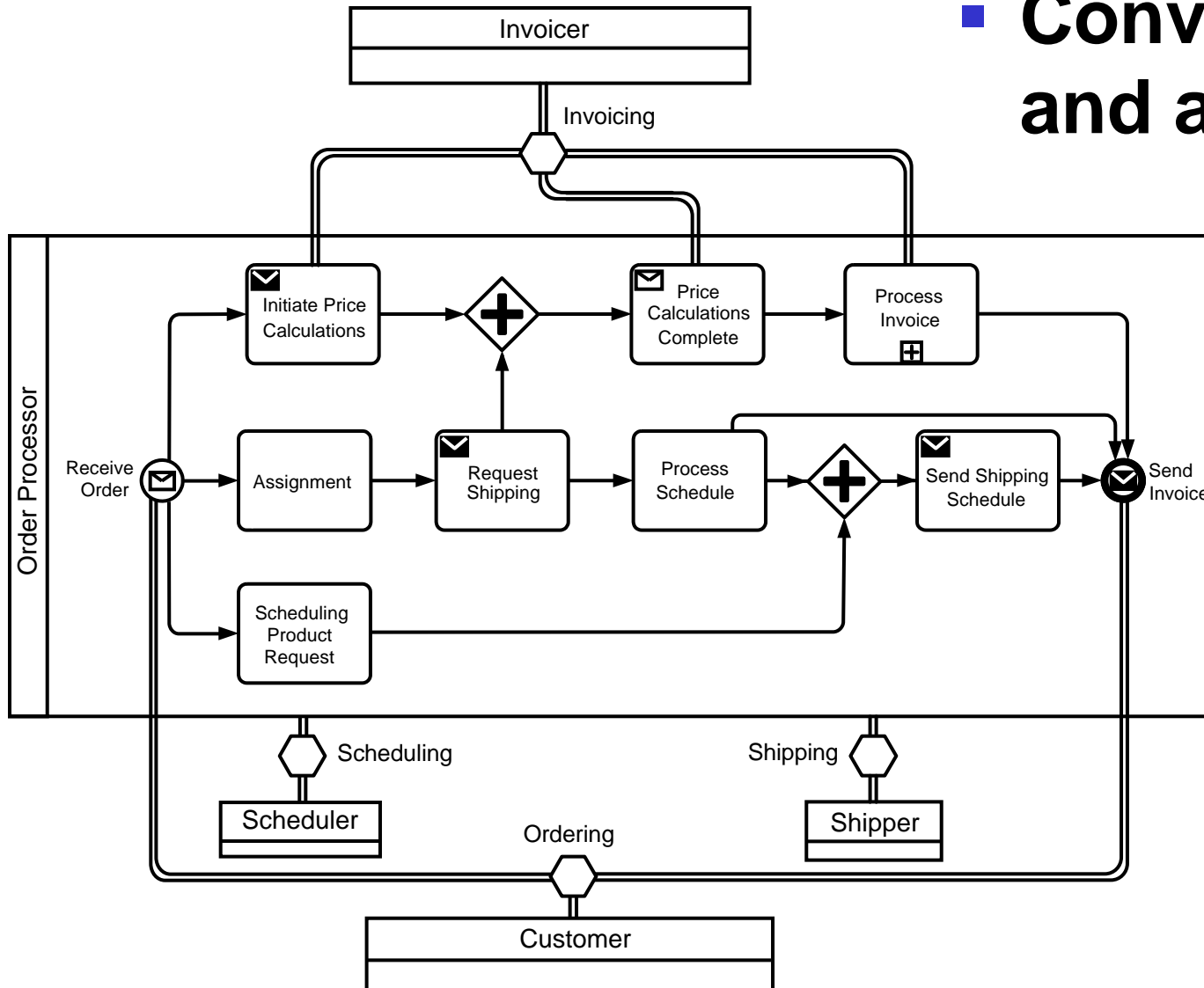
Engineering is a Business



- **Engineering Change Management is part of Customer Relationship Management.**
- **See Open Applications Group Business Object Documents.**

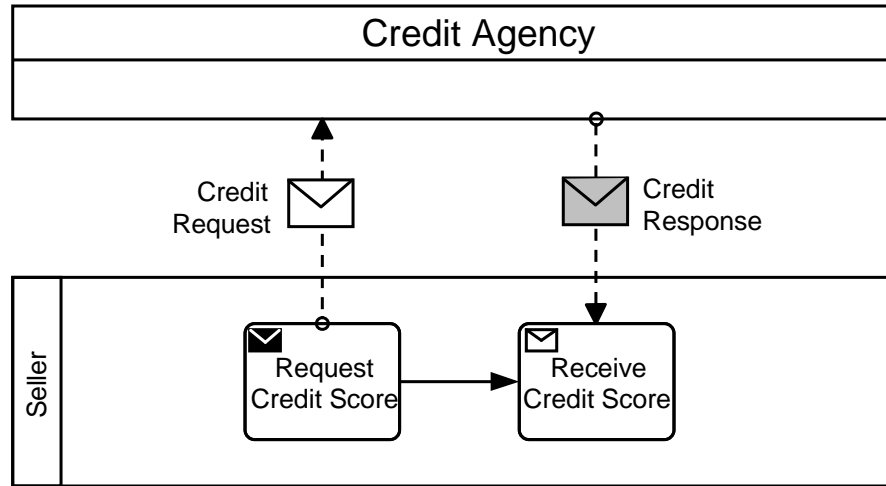
Message Grouping with Processes

- Conversations and activities.

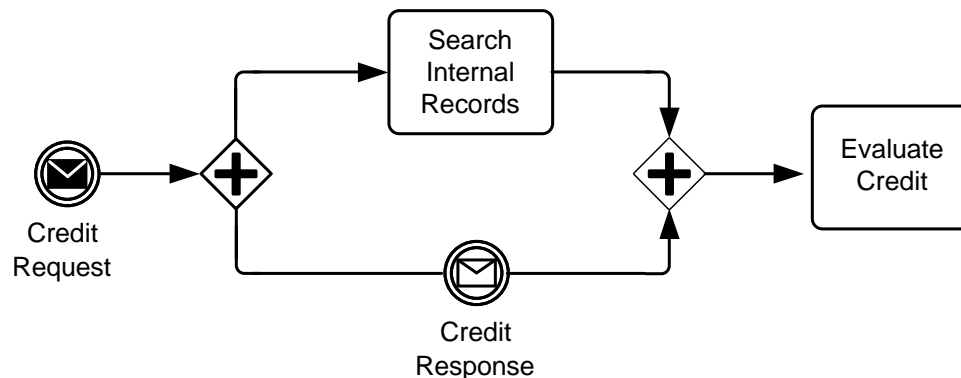


Public and Private Processes

- Participants might only show public view of a process

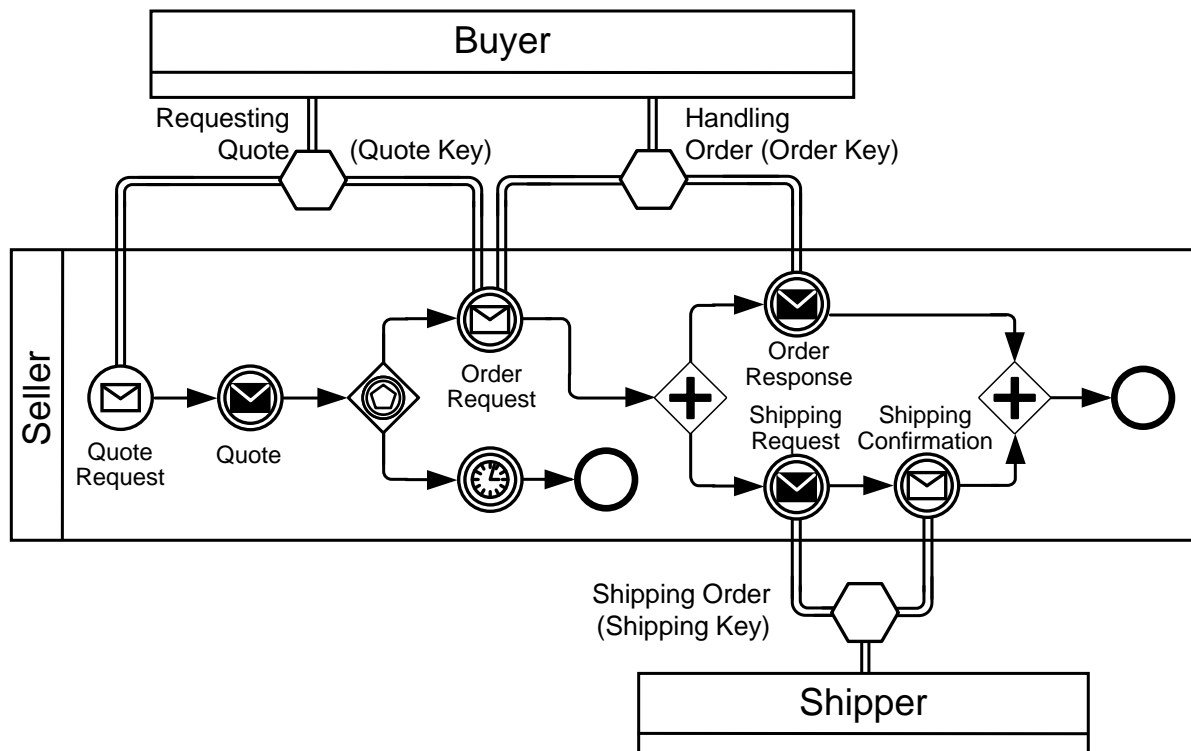


- Private process can model the same interaction differently



Routing Messages to Processes

- Incoming messages might be routed to existing processes already underway.
 - Routing based on data in messages.
 - Specified by Correlation.



Interaction Diagram Capabilities

- **Two diagrams for interactions**
 - **Collaboration and Choreography.**
 - **All capture Participants, Messages, Message Flow.**
 - **Choreography shows sequencing of message flows directly.**
 - **Collaboration shows processes in participants.**
 - **Choreography and Collaboration show grouped message flow**
 - **Conversations capture Correlation**

| | Choreography | Collaboration |
|--|--|--|
| Participants, Messages, Message Flow | X (Message Flow shown as Activities) | X |
| Sequencing Message Flow | X | (indirectly with processes in participants) |
| Grouping Message Flow | X | X |
| Processes in Participants | | X |
| Correlating Messages to Process Instances | X (Not shown graphically) | X |

Summary

- **Business process includes interactions between businesses.**
 - **Services are bundled with products.**
- **BPMN 2 upgrades interactions with:**
 - **Diagram for message flow sequencing (Choreography)**
 - **Grouping message flow in Collaboration (Conversations).**
- **Enables more applications of BPMN.**
 - **Engineering processes are business processes.**