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2 Business Modelling

2.1 Workflow

2.1.1 Purpose

The purpose of business modelling is:

- To understand the structure and dynamics of the business domain,
- To ensure that all users, standards developers and software providers have a common understanding of the business domain,
- To understand the daily business in the business domain independent of any technical solution,
- To create categories to help partition the business domain that enables an iteration plan to complete the model,
- To structure the model in the form of a Business Operations Map (BOM)
- To capture the justification for the project,
- To identify the stakeholders concerned with the modeled domain, some who will be independent of the processes within the domain.

2.1.2 Business Modelling Methodology

The fundamental principle for this workflow is to populate a model according to the business operations map metamodel.

2.1.3 Business Modeling workflow Use case

The use case that creates the Business Operations Map involves the business domain expert, the business process analyst and technical modeler, as shown in Figure 7. The business process analyst acts as a facilitator to extract business knowledge from the business domain expert. The technical modeler acts as a recorder within this knowledge capture.

The primary activity is to understand the justification for the project and to determine the scope and categorization of the domain in preparation for modeling the project.

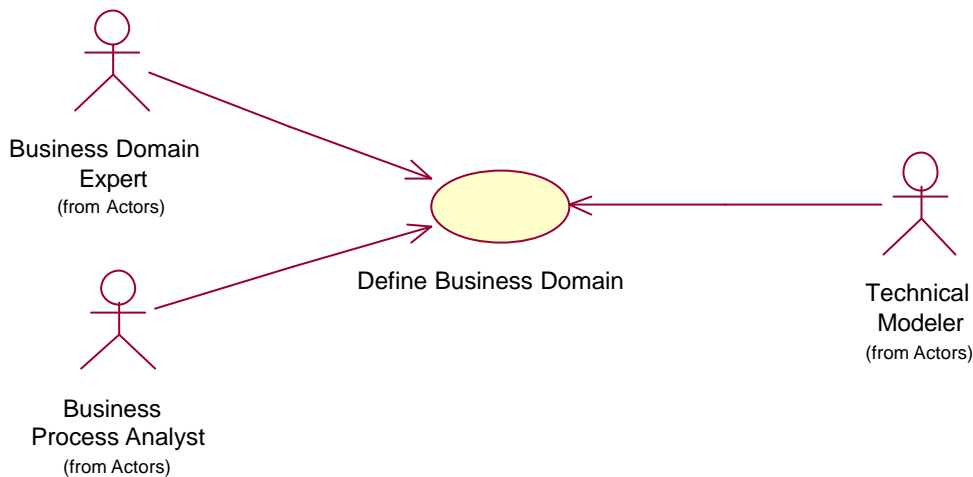


Figure 7. Business Modelling Workflow Use Case Diagram

2.1.4 UMM Framework: Business modeling workflow

Figure 8 highlights the methodology steps, and the artifacts created. At the time of this writing, UN/CEFACT has not specified any business patterns that could be used in this workflow. There are efforts underway to discover reference material applicable for e-Business.

Workflow	Methodology	Pattern	Model Artifacts [UML]
Business Modelling	<ul style="list-style-type: none"> Domain Analysis Use Case Analysis Process Discovery Activity Modeling 	<ul style="list-style-type: none"> Business Patterns (The definition of Business Patterns is a future activity.) 	BOM <ul style="list-style-type: none"> Business Area [Package] Process Area [Package] Business Process(es) [Use Case][Activity Diagrams] Business Entity [Class]

Figure 8. Extract from the UMM Framework

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2.1.5 Describe the Justification for the project

A statement of justification of the project is gained through reaching an understanding of the business domain as an area of opportunity or concern. Agreement is reached with the stakeholders involved in the decision to initiate the modelling process. This could include the definition of one or more industries or other types of business category involved in the domain.

2.1.6 Domain Analysis

A business domain may be large and complex, and starts from information and documentation provided by the business experts contributing to this workflow. The domain analysis yields a categorization of the domain into business areas, process areas, and business processes. The following are the recommended steps.

At the domain level, detail the following information:

- Business justification,
- Business Areas involved (names),
- Processes (names) within Business Areas,
- Industry segment (high level statement that encapsulates the scope of all the business areas).
- Objective,
- References,
- Boundary of the domain,
- Constraints,
- Stakeholders involved at this level

For each business area, detail the following information:

- Objective,
- Scope,
- Boundary of the business area,
- Constraints,
- Stakeholders involved at this level,
- Process areas involved,
- **Note:** iterate up to the domain level, to ensure that scope is not changed.

For each process area within the business area, detail the following information:

- Objective,
- Scope,
- Boundary of the process area,
- Constraints,
- Stakeholders involved at this level,
- Business processes involved represented as business process use cases,
- **Note:** iterate up to the business area, to ensure that ALL the information at that level is not changed.

For each business process use case, detail the following information:

- Use case description,
- Activity diagram.

Also, identify business information objects that are likely to be referenced.

The activity diagrams in this workflow will likely discover more refined business process use cases. The BOM metamodel allows a business process to be represented by more refined business processes. NOTE: At the point where the business process can not be broken down into more child business processes, the parent business process can be called a business collaboration use case as specified in the Requirements workflow.

This point is reached when the activity diagram contains at least one activity that is an atomic business transaction according to the analysis patterns of 8.3. Other activities in the business collaboration use case may be business collaboration use case(s) and/or other atomic business transactions. However, when at least one activity corresponds to an atomic business transaction, the domain analysis is complete and the business modelling workflow should transition to the requirements workflow.

The Business Operations Map (BOM) of a business process model specifies the use case scenarios, input and output triggers, constraints and system boundaries for business areas, business processes, business collaboration protocols, business transactions and their interrelationships. Business process are partitioned, arranged and interrelated using a BOM to promote human understanding and to facilitate specific business model configurations (e.g. build-to-order and build-to-stock).

2.2 Artifacts

The Business Requirements View is comprised of the following key modelling elements or artefacts.

BusinessProcess

A business process is a use case that is used to identify activities about business domains.

BusinessOperationsMap

A Business Operations Map is a framework for understanding business area sub-process interrelationships.

BusinessArea

A business area is a category of decomposable business process areas. A business area collates process areas.

ProcessArea

A process area is a category of business processes and business transactions. A process area collates business processes and business transactions.

Reference

If applicable, list documents that relate to the BOM or the business opportunities or problems which are to be addressed

StakeHolder

Represented by a role played in relation to the BOM, business area or process area

Constraints

Note any design constraints, external constraints or other dependencies

2.3 Guidelines

2.3.1 Business Process Identification and Discovery

Goals

The first set of worksheets helps the user begin formalize the domain they are trying to model processes in. The first stage in the methodology is to identify the “top level” entities and organizing concepts in the domain.

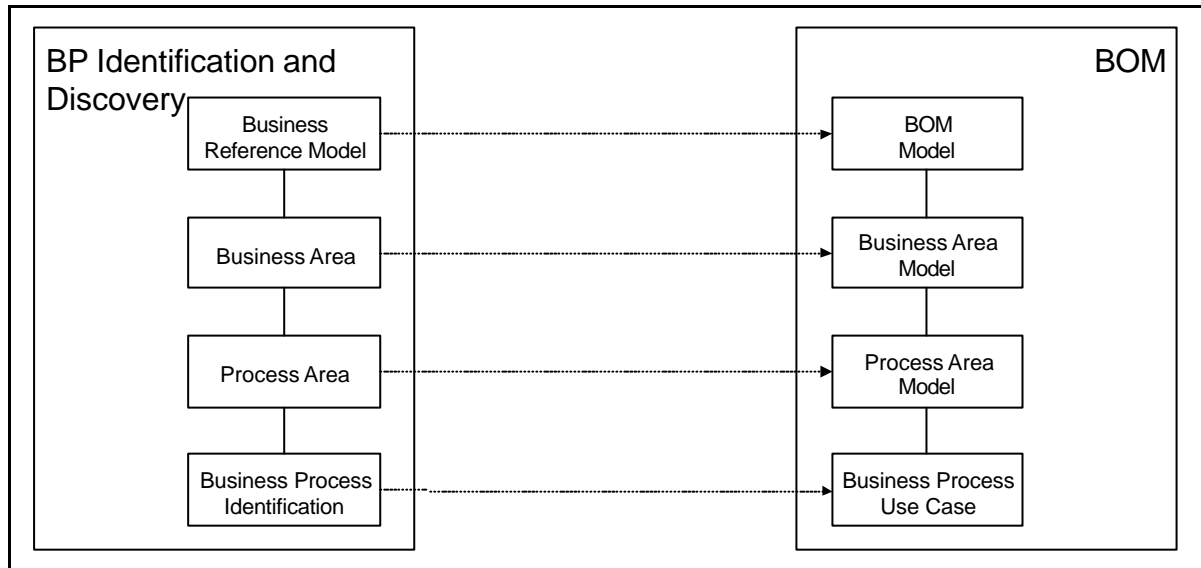


Figure 2-1 Business Process Identification and Discovery Worksheet to Metamodel Mapping

At this stage we define terminology and identify the participants as well as which business processes those players interact with. To quote the UMM, at this stage in the model the goal is to:

- To understand the structure and dynamics of the business domain,*
- To ensure that all users, standards developers and software providers have a common understanding of the business domain,*
- To understand the daily business in the business domain independent of any technical solution,*
- To create categories to help partition the business domain that enables an iteration plan to complete the model,*
- To structure the model in the form of a Business Operations Map (BOM),*
- To capture the justification for the project,*
- To identify the stakeholders concerned with the modeled domain, some who will be independent of the processes within the domain.*

The modeling artifacts that correspond to the UMM are:

- Business Area [Package]*
- Process Area [Package]*
- Process(es) [Use Cases]*

2.3.2 How does one decide how big to make the various groupings at this level?

Referring back to the primary guidelines, think about what you are trying to communicate. If you are more focused on identifying the public processes, then think about grouping them by partner type or, perhaps by the area of your business these partners interact with. If you are trying to formalize an entire business sector, determine the *archetypes* (patterns) that are prevalent in that sector and group them by business function area. These are just rules of thumb and this is still largely an “art”. Keep in mind your potential audience and think what would make the most useful organization for them.

The activity diagrams in this workflow will likely discover more refined business process use cases. The Business Operations Map (BOM) Metamodel allows a business process to be represented by more refined business processes. NOTE: At the point where the business process can not be broken down into more child business processes, the parent business process can be called a business collaboration use case as specified in the Requirements workflow.

2.3.3 What is the boundary of the business area?

According to the [UMM] the following guidelines are to be used in defining a business area:

The business area can be defined by the stakeholders that have direct or immediate indirect influence on the business domain. A stakeholder is defined as someone or something that is materially affected by the outcome of the system but may or may not be an actor. Actors are stakeholders that are involved in the business process and are thus part of the business model.

The business area can be defined by the information passing into or out of the business domain. Where possible, the domain boundaries should be chosen so that a business transaction is logically or organizationally initiated and concluded within them.

The business area can be defined by key business entity classes. (i.e., things that are accessed, inspected, manipulated, processed, exchanged, and so on, in the business process)

2.3.4 Business Reference Model

Often times it is useful to define a “frame of reference” for the business processes being identified. This frame of reference might define basic terms accepted by the given industry segment. For example the SCOR model defines a frame of reference for supply chain. VICS defines a frame of reference for trading partners in the retail industry. It also might be a more horizontal view such as the Porter Value Chain [PVC] .

Describe Business Reference Model	
Business Reference Model Name	[Provide a name for the reference model. You can use an existing reference model such as the Supply Chain Council or the Porter's Value Chain or create your own name.] <u>DOTCOM DROP SHIP RETAIL MODEL</u>
Industry Segment	[Provide the name of the industry segment that this business applies to. Search the business process library for a list of possible industry segments. If the industry segment does not exist, then provide an appropriate name/label for the industry segment.] <u>Retail</u>

Domain Scope	[Provide a high level statement that encapsulates the scope of all the business areas.] <u>Online catalog, distribution center, delivery, billing.</u>
Business Areas	[List the business areas within the scope. A business area is a collection of process areas. A process area is a collection of business processes. You may wish to refer to the ebXML Catalog of Business Processes that provides a list of normative categories that may be used as business areas.] <u>Order Management, AR.</u>
Business Justification	[Provide the business justification for the collection of business processes] <u>Define more efficient on-line retailer/vendor interaction.</u>

2.3.5 Business Area

As mentioned in the guidelines section, there are no hard and fast rules for how to divide up the model into different business areas. One suggestion is to group business processes according to the primary business function. You might consider using the Porter Value Chain [PVC] classification scheme (see Appendix B).

Describe Business Area	
Business Area Name	[Provide a name for the business area. This should be listed in the Business Areas section of at least one Business Reference Model.] <u>Direct to Customer Retail</u>
Description	[A brief summary of this functional area.]
Scope	[Provide a high level statement that encapsulates the scope of all the business areas. The scope of the business area must be within the scope of the encompassing business reference model. Typically the scope of the business area will be more constrained or limited than the scope of the business reference model.] <u>Online catalog, order placement, distribution center, delivery, billing.</u>
Boundary of the Business Area	[Describe the boundary of the business area. This defines the entities that interact in this business area; actors, organizations, possibly systems] <u>Customer, Retailer, DSVendor, Carrier, Credit Authority.</u>
References	[Any external supporting documentation.] <u>VICS, SCOR</u>
Constraints	[Identify any constraints on the process areas (and, thus, business processes) within this business area.] 1. <u>Completely automated system.</u> 2. <u>Web browser limitations.</u> 3. <u>Domestic orders only</u>
Stakeholders	[Identify the practitioners that care about the definition of this business area. At this level, this is likely to be some participants in an industry group (perhaps a standards body or an enterprise). These are the people who will define the BRV.] <u>Customer, Retailer, DSVendor, Carrier, Credit Authority.</u>
Process Areas	[List the process areas within the scope. A process area is a collection of business processes. You may wish to refer to the ebXML Catalog of Business Processes that provides a list of normative process groups that may be used as process areas.] <u>Customer Commitment, Order fulfillment, Billing, Inventory Management.</u>
Optional for ebXML	
Objective	[Describe the objective of this business area.] <u>To deliver a product to a customer in a timely efficient manner.</u>
Business Opportunity	[Describe the business opportunity addressed by this business area.]

2.3.6 Process Area

Typically a business reference model would define a canonical set of process areas (see the Porter or SCOR reference models for examples). A process area consists of a

sequence of processes that are combined to form the “value chain” of the given business area.

Describe Process Area	
Process Area Name	[Provide a name for the process area. This should be listed in the Process Areas section of at least one Business Area.] <u>Order Fulfillment</u>
Objective	[Describe the objective of this process area.] <u>To deliver the goods ordered to the customer.</u>
Scope	[Provide a high level statement that encapsulates the scope of all the business areas. The scope of the business area must be within the scope of the encompassing business reference model. Typically the scope of the process area will be more constrained or limited than the scope of the corresponding business area.] <u>To fulfill customer's order using the third party supplier for a drop ship delivery.</u>
References	[External supporting documentation.]
Boundary of the Process Area	[Describe the boundary of the process area. The communicating services.] <u>Retailer and third party vendor.</u> [Issue: How is this different than Scope?]
Constraints	[Identify any constraints on the business processes within this process area.] <u>Inventory availability. On time delivery. System constraint.</u>
Stakeholders	[Identify the practitioners involved in this process area. <i>Question: is this a subset of those listed in the Business Area?.</i>] <u>Retailer. Third party vendor</u>
Business Processes	[List the business processes within the scope of this process area. You may wish to refer to the ebXML Catalog of Business Processes that provides a normative list of business processes.] <u>Manage Purchase Order.</u>
Business Opportunity	[Describe the business opportunity addressed by this process area.]

2.3.7 Identify Business Processes

For each business process in the process area fill in the following worksheet. A suggested rule of thumb for the appropriate granularity for a business process is that it is the smallest exchange of signals between stakeholders that has an identifiable economic value (cref. [REA]). *Note that this is not always appropriate since “negotiation” could be a valid business process but it doesn’t really result in an economic consequence.* Be sure to validate the information in the process area against the encompassing business area. For example, validate that the scope of the process area is within the scope of its business area.

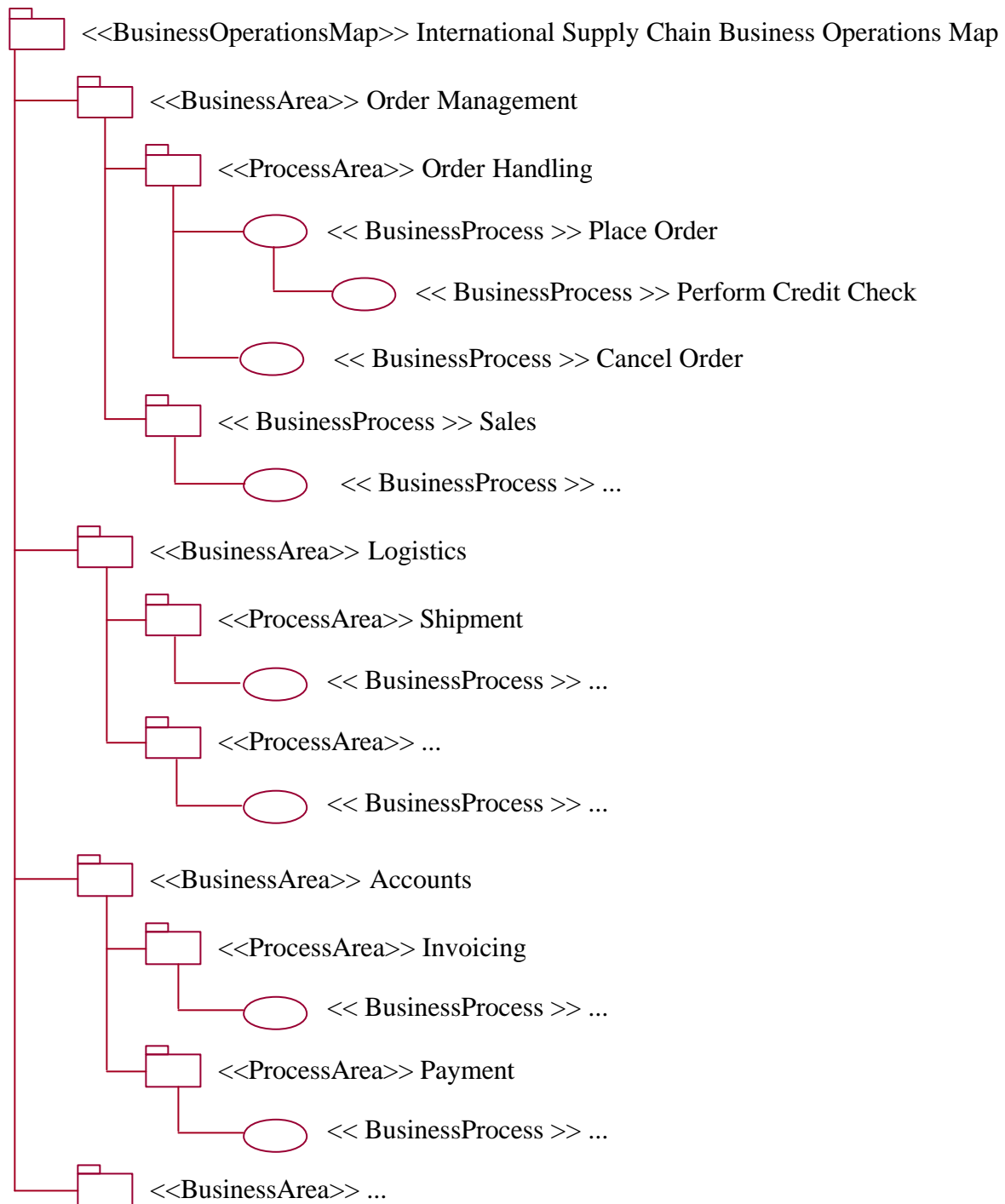
Identify Business Process

Business Process Name	[Provide a name for the business process. You may wish to refer to the ebXML Catalog of Business Processes [bpPROC] that provides a suggested set of commonly used business processes.] Manage Purchase Order
Process Area	[A process area is a group of business processes. Complete a Process Area form.] Order Fulfillment
Business Area	[A business area group together related process areas. Create a Business Area form.] Direct to Customer Retail

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2.4 Example

1 2.4.1 BOM Structure



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2.4.2 Properties of Package stereotyped as <<BusinessOperationsMap>>

<<BusinessOperationsMap>>
International Supply Chain
Business Operations Map

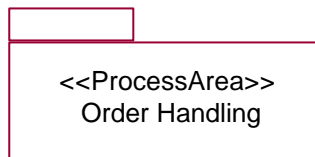
IndustrySegment	International Supply Chain
Justification	The International Supply Chain Domain covers all stages following the recognition of need by a Customer for a product or service to the fulfillment of an order by a supplier and the resulting financial settlement. It incorporates any necessary activities carried out by Intermediaries and Authorities.
References	<ul style="list-style-type: none"> • ITT Global Reference Model - UN/CEFACT www.un-ece.org/trade/itt/itt_tip.htm • Java Framework for Simple EDI - E-CENTRE, May 1998 • SIMPL-EDI, Linking Value Chain Management and Electronic Commerce. e-Centre UK. • UN/CEFACT Unified Modeling Methodology -TMWG/N090 • Business Modelling for UN/CEFACT-BPAWG/N029
Stakeholders	<ul style="list-style-type: none"> • UN/CEFACT CSG, International Trade Union, World Trade Organization

2.4.3 Properties of Package stereotyped as <<BusinessArea>>

<<BusinessArea>>
Order Management

CategorySchema:	UN/CEFACT*s Ontology
Category:	UN.CEFACT.SupplyChain.OrderManagement
Objective:	Perform all buyer-seller related order processes.
Scope:	Limited to order management activities, excluding Logistics and Accounting.
Business Justification:	Facilitation of Ordering Activities.

2.4.4 Properties of Package stereotyped as <<ProcessArea>>



CategorySchema:	UN/CEFACT's Ontology
Category:	UN.CEFACT.SupplyChain.OrderManagement.OrderHandling
Objective:	Facilitate key activities relative to order handling between buyer/seller for products and services.
Scope:	Limited to order handling activities, excluding sales.
Business Justification:	Facilitation of order handling activities.

2.4.5 Properties of Use Case stereotyped as <<BusinessProcess>>



Precondition:	A contract or a framework agreement exists
BeginsWhen:	The customer recognises a need for a products and contacts a seller.
Definition:	The customer recognises a need for a product and places an Order under an established contact or a framework agreement. The supplier receives order and responds.
EndsWhen:	Ends when order conditions have been met or order is cancelled.
Exceptions:	<ul style="list-style-type: none">• Seller is not able to deliver the goods.• Seller is not allowed to sell the goods (trade embargoes, government regulations, etc.)• ...
Postcondition:	The customer has received positive acknowledgement of product scheduled delivery.



<<BusinessProcess>>
Perform Credit Check

1

Precondition:	Supplier has identified potential customer.
BeginsWhen:	Supplier initiates the credit status query.
Definition:	Supplier initiates query on the Credit worthiness of his customer. Intermediary responds with credit status.
EndsWhen:	The Intermediary has delivered the credit status.
Exceptions:	<ul style="list-style-type: none">• Intermediary will not deliver the credit status.
Postcondition:	Supplier is aware of the credit worthiness of the customer.

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