ECommerce Use Case

This is an example of a "public process" as it is a process that must be public, at least, to the parties that are involved.

The use case describes an international order placement and delivery. The players are:

?? A small, specialized electronics supplier in Korea, that makes patented electronic motion-sensing components that are widely used in the automotive and aerospace industries. They are also used, to a lesser extent in other industries such as mining and oil exploration as well as in the manufacturing machine tool and construction industries.

?? A buyer, in the US, of the Korean company's components. The buyer is an automotive "tier 1" supplier who builds sub-assemblies for one of the major OEMs, e.g. GM.

?? An airfreight company contracted to the OEM buyer in the US, who transports goods between the supplier in Korea and the buyer in the US.

A SOAP based "electronic" exchange of XML business documents occurs between the three parties that follows a pre-defined sequence that has been specified by a US automotive industry association:

1) The buyer in the US sends an *Order* for components to the supplier in Korea based on an existing "call-off" contract

2) The buyer then immediately sends a *Transport Booking* to the airfreight company notifying them that they will need to pick up the order – this is used by the airfreight company as an authorization to collect and transport the goods

3) The Korean supplier checks the order and sends an *Order Response* to the US buyer with the details of what will be delivered and when

4) At about the same time as step 3 (i.e. either before or after) the airfreight company sends a *Booking Confirmation* to the Seller and Buyer, provisionally accepting the transport booking

5) Once the Korean supplier has received the Booking Confirmation and after sending the Order Response they send *Shipping Instructions* to the airfreight company instructing them when to pick up the shipment

6) After checking the Shipping Instructions are OK, the airfreight company sends a *Transport Contract* to the US buyer and also the Korean supplier indicating that they have accepted picking up and delivering the goods at the requested time

7) The air freight company picks up the goods at the agreed time and uses this information to send an *Advanced Shipment Notice, Airwaybill* (as it is going by air) and *Customs Declaration* (as it is international) to the buyer in the US in one message

8) At about the same time (in practice this can be before or after) the Korean company independently sends the US buyer an electronic copy of the *Shipping Note* that accompanied the physical goods

9) When the goods arrive at the US buyer and are accepted in good condition, the buyer sends the Korean supplier and the airfreight company a *Goods Receipt* to indicate that the transaction is complete so that they can (outside of this series of interactions) invoice the US company for the goods and the air freight.

The Korean and airfreight companies also follow the exact same standard sequence of messages with other automotive companies in the US. They also follow variations of this process flow with other companies in different countries and in different industries. For example the Shipping Note (step 8) is sent first to the airfreight company who then send it to the buyer at the same time as the Advanced Shipment Notice.

The Korean and airfreight companies also follow completely different, but similarly standardized, processes to support other types of business.

There are also additional messages (all part of the standard) that can vary the flow that have not been included in the above. These include:

1) A *Change Order* or *Cancel Order* sent from the buyer to the supplier changing or canceling the order. In this case the Supplier returns a *Change Order Response*

2) An updated *Order Response* from the supplier to the buyer and freight company notifying them of production problems which cause changes to what can be delivered or when it can be delivered

3) An updated *Transport Contract* from the air freight company to the seller and buyer notifying them of changed pickup and delivery times

As each party is an independent business, they want to maintain control over how they process each of the messages within their internal systems. However the processing and procedures of all the businesses involved MUST follow the standard sequence described above, otherwise those interactions will fail.

Finally, the same flow can be used both nationally as well as internationally. The main difference is that the content of the message differs. For example, international transactions need customs documents whereas national ones do not. However the national ones also record local tax information whereas the international ones record customs duties instead. For this reason, the standardized sequence definition or choreography does not specify the precise content of the messages and only specifies the flow and dependencies.