Forecast / Planning Business Models

Draft

February 1996

EIDX Business Models

Preface

Purpose:
The purpose of this document is to model the flow of documents used in some common business processes for forecasting.

Any implementation model is agreed upon by trading partners. It is the intent of this document to make interpretation of the models used for forecasting more consistent, so that implementations are based upon common practices.

Additional References:

EIDX Implementation Recommendations: Transactions Used in Forecast / Planning Models (draft 2/96)
EIDX Transaction / Message Guidelines (see list of transactions below)

Preface

Standards Versions:
Transactions refered to in this document are particular to ASC X12 Version 003020 and UN-EDIFACT Version/Release 92.1. Users of this document may need to adapt information when applying these recommendations to other standards versions.

Transactions / Messages Used in these Models:
830/DELFOR - Planning Schedule / Delivery Forecast
To convey demand
856/DESADV - Ship Notice / Despatch Advice
To notify trading partner of shipments
862/DELJIT - Shipping Schedule / Delivery Just-In-Time
To convey discrete releases against a forecast
870/?????? - Order Status (No EDIFACT equivalent available)
To convey schedule of planned shipments
947/?????? - Warehouse Inventory Adjustment Advice (no EDIFACT equivalent available)
To convey quantity or status changes for inventory records

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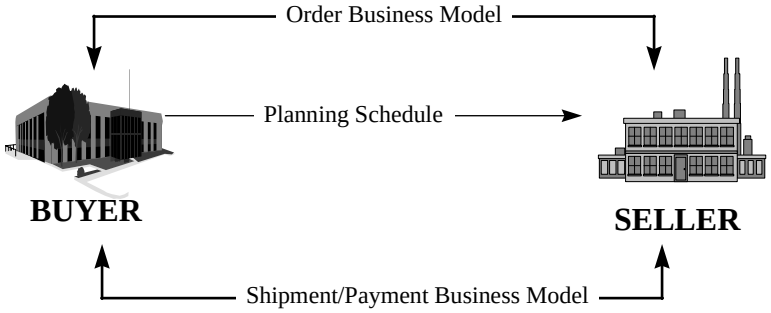
Forecast / Planning Business Model 1
Planning Forecast



Attributes: Buyer generates Planning / Delivery Schedule (forecast) for information only and capacity or lead time planning purposes, to convey anticipated demand or run rates; no authorization to build or ship implied except per trading partner agreement. Purchase Orders used to release firm schedules.

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Forecast / Planning Business Model 1
Planning Forecast

Transactions Used

➤Buyer generates net rolling forecast transmitted at planned interval; to be used by seller for planning purposes only. Forecast schedules may have discrete dates or bucketed (weekly, monthly, etc.) quantities. POs used to release firm schedules (830/DELFOR).

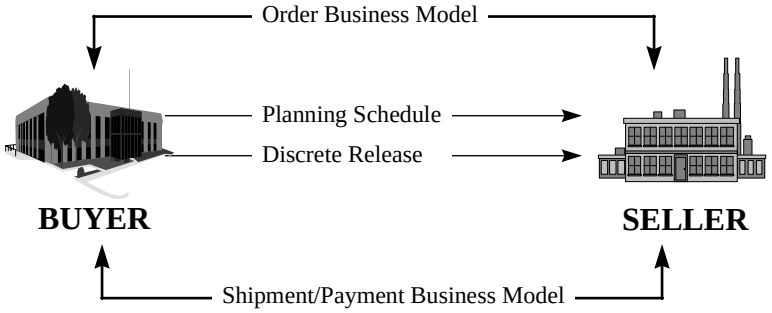
Recommended Usage:

➤Use with Order Business Model 1 (Traditional Stand-Alone PO)
➤For consignment, use also Inventory Management Business Model 1

Not Recommended Usage:

➤Do not use with other Order Business Models

Forecast / Planning Business Model 2
Material Release (Classic)



Attributes: Buyer calculates requirements and generates blanket PO for stated period (such as yearly). Blanket includes authorization and other terms. Buyer forecasts net requirements and issues weekly or daily, or JIT releases against the Blanket Order. Enables theoretical zero lead-time, zero inventory, and electronic Kanban strategies. Conducive to an environment where releases are more frequent than weekly.

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Forecast / Planning Business Model 2
Material Release (Classic)

Transactions Used

➤Buyer generates net rolling forecast transmitted at planned intervals (830/DELFOR - authorization to commit resources).

➤Automatic release trigger using Shipping Schedule (862/DELJIT - authorization to ship)

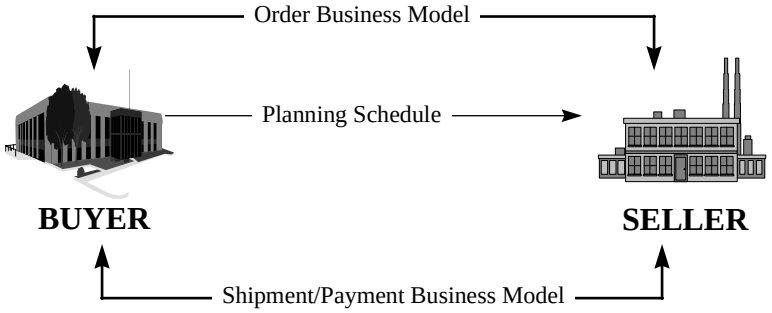
Recommended Usage:

➤Use with Order Business Model 3 (Blanket Order - Forecast Release)
➤For consignment, use also Inventory Management Business Model 1

Not Recommended Usage:

➤Do not use with Order Business Model 1 (Traditional Stand-Alone Order)

Forecast / Planning Business Model 3
Embedded Release



Attributes: Buyer calculates requirements and generates blanket PO for stated period (such as yearly). Blanket includes authorization and other terms. Forecast becomes firm release within negotiated lead-time (releases "embedded" within forecast). Used for theoretical zero lead-time and zero inventory strategies. Conducive to an environment where releases are no more frequent than weekly.

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Forecast / Planning Business Model 3
Embedded Release

Transactions Used

➤Buyer generates net rolling forecast transmitted at planned intervals (830/DELFOR - authorization to commit resources and to ship); firm requirements explicitly marked (prefered way); alternatively,forecasts within negotiated lead time are considered "firm" or "released".

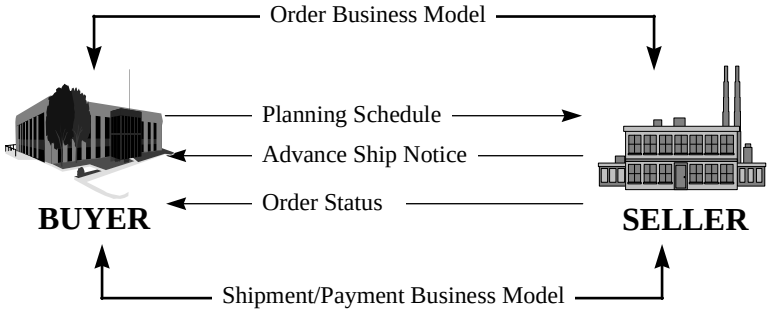
Recommended Usage:

➤Use with Order Business Model 3 (Blanket Order - Forecast Release)
➤For consignment, use also Inventory Management Business Model 1

Not Recommended Usage:

➤Do not use with Order Business Model 1 (Traditional Stand-Alone Order)

Forecast / Planning Business Model 4
Forecast-Based SMI (Supplier-Managed Inventory)



Attributes: Buyer sends planning schedule containing gross requirements, inventory levels, and min/max inventory targets. Seller nets forecast data to determine ship requirements based on buyer's inventory levels and min/max targets. Receipt data sent by buyer so seller can calculate in-transit quantities (embedded Receipt Advice). Optional order status used to convey planned shipments so buyer can anticipate Receiving workload.

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Forecast / Planning Business Model 4
Forecast-Based SMI (Supplier-Managed Inventory)

Transactions Used

➤Buyer generates planning schedule with gross requirements, inventory levels, receipt data and mininum and maximum inventory level targets (830/DELFOR); seller nets forecast data to determine ship requirements.
➤Seller may need ship notice data (856/DESADV) so buyer can open a receivable and can send identifiers back with receipt data (embedded in 830/DELFOR)
➤(Optional) Order Status (870/_____) may be used to allow buyer's Receiving department to plan workload or an Inventory Management Business Model may be used.

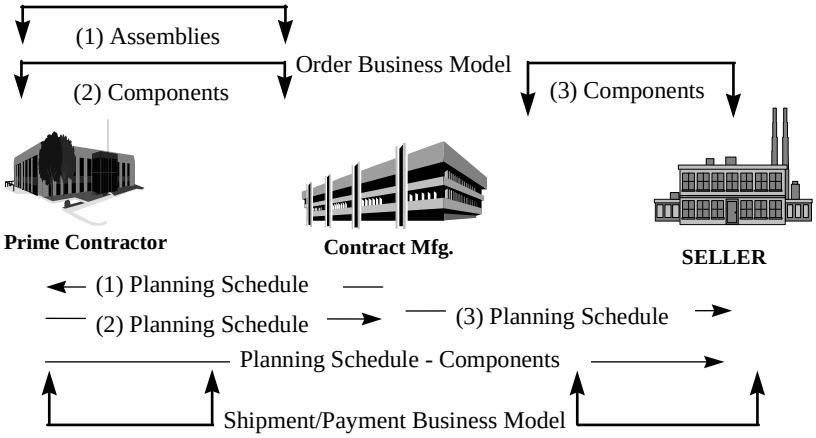
Recommended Usage:

➤Use with Order Business Model 3 (Blanket Order - Forecast Release)

Not Recommended Usage:

➤Do not use with Order Business Model 1 (Traditional Stand-Alone Order)
➤With Inventory Management Business Model 1 (Consignment)

Forecast / Planning Business Model 5
Contract Manufacturing - PC Supplies Components



Attributes: Prime contractor (Buyer) forecasts assemblies to contract manufacturer. CM procures parts from the prime contractor (PC); PC procures the parts from seller for drop-ship to CM.

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Forecast / Planning Business Model 5
Contract Manufacturing - PC Supplies Components

Transactions Used

➢Prime contractor (PC, buyer) sends planning schedule with assemby forecasts to contract manufacturer (830/DELFOR); these may be planning forecasts, or material release forecasts.

➢CM sends planning schedule with component forecast to PC for components being provided by PC. CM may also include components being purchased directly from seller to give PC visibility of demand. Only planning forecasts are recommended.

➢PC includes CM's component demand in planning schedule. Only planning forecasts are recommended.

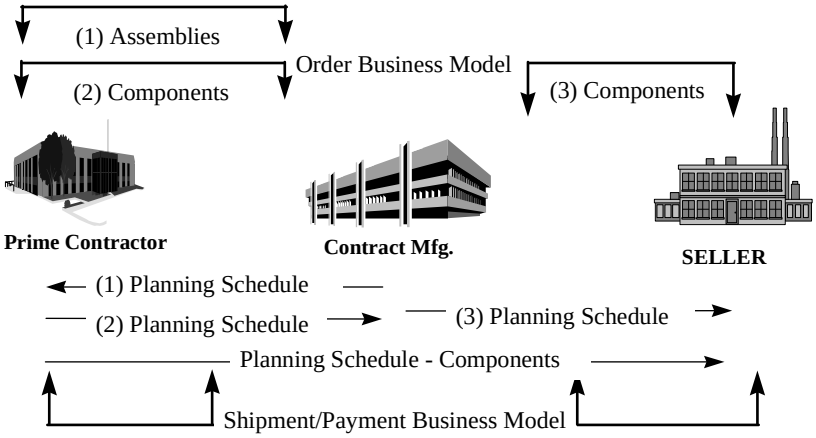
Forecast / Planning Business Model 5
Contract Manufacturing - PC Supplies Components

Recommended Usage:
➤(Optionally) Use with Order Model 5 (Contract Manufacturing)
➤(Optionally) Parties may use other order models in 2-party mode (PC with CM, PC with seller, CM with seller)

NOTE: If PC manufactures the components, use appropriate order models and forecast / planning models; CM in this case is the buyer, PC is the seller; there may be differences in transaction contents than traditional buyer to seller transactions

Not Recommended Usage:
➤Supplier-Managed Inventory (SMI), forecast-based or consumption-based
➤Consignment. For consignment or SMI, use an order model where parts are shipped to prime contractor, along with Inventory Management Model 2; in this case, the PC transfers / resells components to CM; alternatively,in an environment where CM buys components from seller, CM and seller can negotiate a consignment or SMI process independently from the prime contractor.)

Forecast / Planning Business Model 6
Contract Manufacturing - CM Buys Components



Attributes: Prime contractor (Buyer) forecasts assemblies to contract manufacturer. Contract manufacture may send component forecasts to PC to give PC visibility of aggregate demand for purposes of contracting and assurance of supply.

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Forecast / Planning Business Model 6
Contract Manufacturing - CM Buys Components

Transactions Used

➢Prime contractor (PC, buyer) sends planning schedule with assembly forecasts to contract manufacturer (830/DELFOR); these may be planning forecasts, or material release forecasts.

➢Contract Manufacturer (CM) determines component requirements. CM sends planning schedule with component forecast to seller if components being purchased directly (830/DELFOR); these may be planning forecasts or material release forecasts.

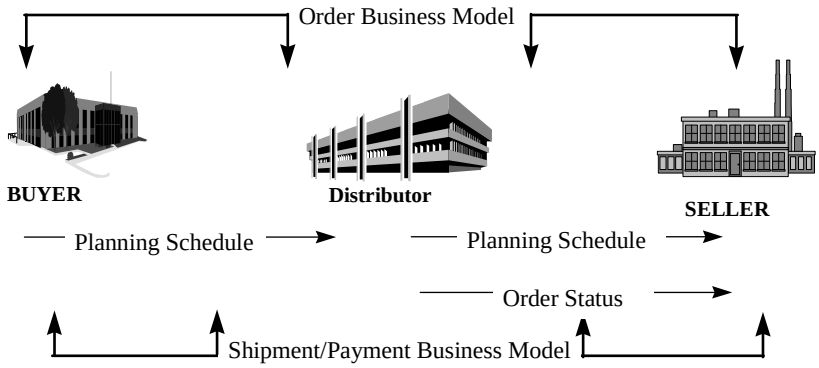
➢CM may optional send forecast of components being purchased directly from seller to give PC visibility of demand. Only planning forecasts are recommended.

Forecast / Planning Business Model 6
Contract Manufacturing - CM Buys Components

Recommended Usage:
➢CM and supplier may use any appropriate order model.

Not Recommended Usage:
➢Supplier-Managed Inventory (SMI), forecast-based or consumption-based
➢Consignment. For consignment or SMI, use an order model where parts are shipped to prime contractor, along with Inventory Management Model 2; in this case, the PC transfers/resells components to CM; alternatively,in an environment where CM buys components from seller, CM and seller can negotiate a consignment or SMI process independently from the prime contractor.

Forecast / Planning Business Model 7
Distributor Forecasting



Attributes: Buyer sends forecasts to distributor, which may or may not be supplier-specific. Distributor in turn forecasts demand to manufacturer which may or may not be customer-specific. Optional Order Status sent from distributor to seller is broken down by end-customer (buyer).

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Forecast / Planning Business Model 7
Distributor Forecasting

Transactions Used

➢Buyer sends sends planning schedule to distributor (830/DELFOR); forecasts may be manufacturer-specific.

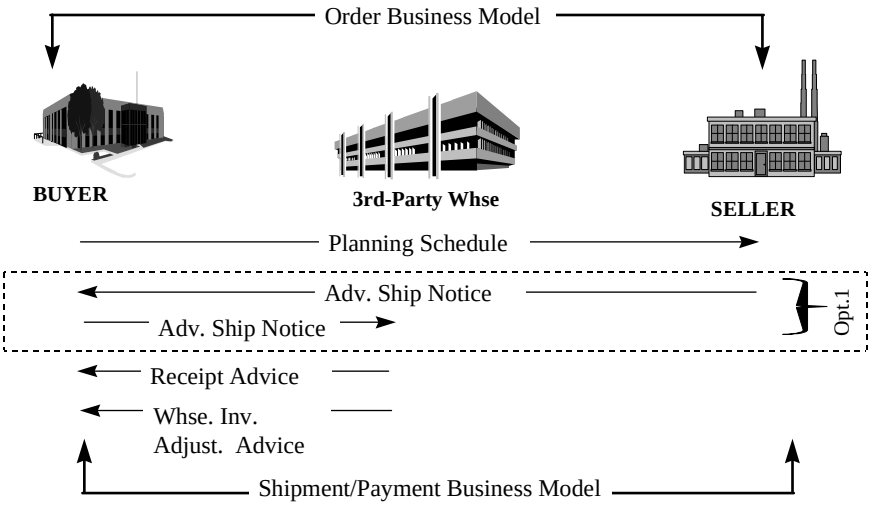
➢Distributor sends consolidated planning schedule to manufacturer (830/DELFOR); forecasts may be customer-specific.

➢If planning schedule is not customer-specific Distributor sends order status to manufacturer (870/INVRPT), which is broken down by end-customer (buyer).

Recommended Usage:

➢EIDX is not recommending what business processes or reasons may lead to a decision to to this type of forecasting, but rather, when usage is decided, EIDX will make recommendations on specific transaction segment and code usages that will enable the process.

Forecast / Planning Business Model 8
SMI - Third-Party Warehouse



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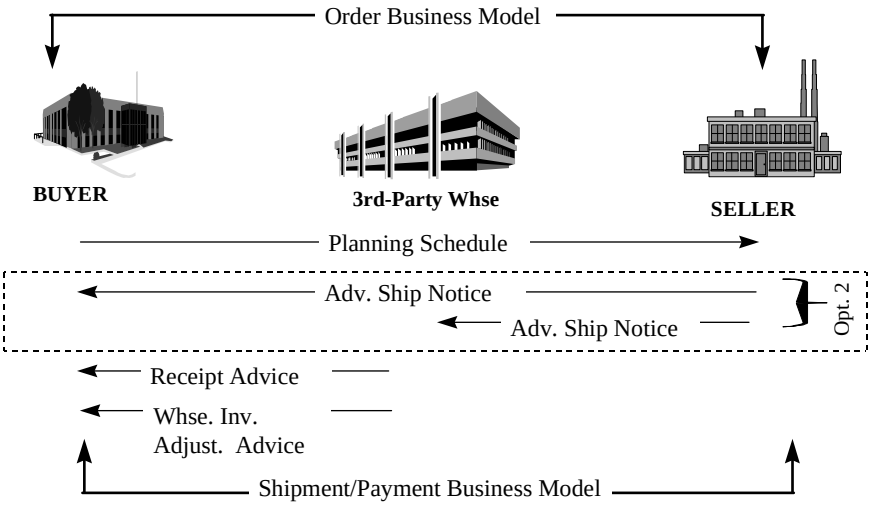
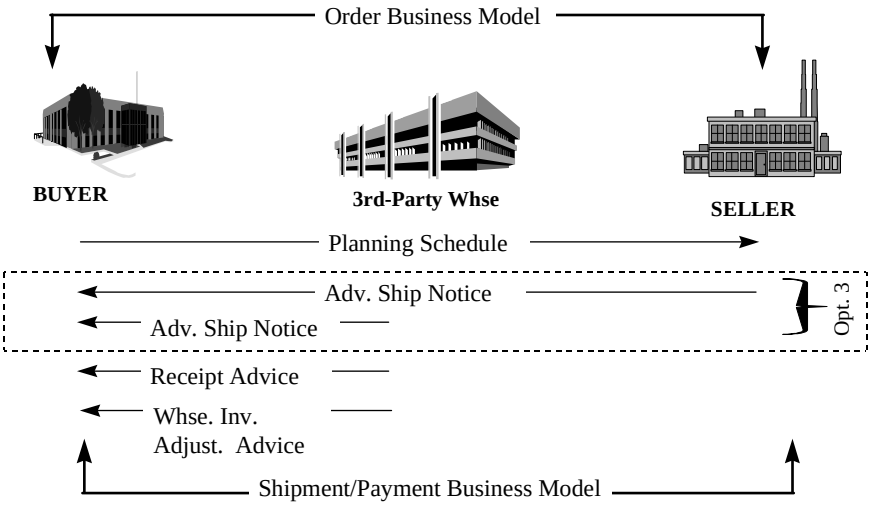
Forecast / Planning Business Model 8
SMI - Third-Party Warehouse



Forecast / Planning Business Model 8
SMI - Third-Party Warehouse



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Forecast / Planning Business Model 8
SMI - Third-Party Warehouse

Attributes: Buyer sends planning schedule containing gross requirements, inventory levels, and min/max inventory targets. Seller nets forecast data to determine ship requirements based on buyer's inventory levels and min/max targets. Buyer needs to track receipts and inventory levels at third party warehouse in order to send receipt data and total on-hand inventories to seller. Seller uses receipt data to calculate in-transit quantities (embedded Receipt Advice).

Forecast / Planning Business Model 8
SMI - Third-Party Warehouse

Transactions Used (continued)

➤Buyer generates planning schedule with gross requirements, inventory levels, receipt data and mininum and maximum inventory level targets (830/DELFOR); seller nets forecast data to determine ship requirements.

➤Seller may need to send ship notice data (856/DESADV) so buyer has identifiers to send back with receipt data (embedded in 830/DELFOR)

Option 1:

➤Seller sends Ship Notice to Buyer

➤Buyer forwards copy of Ship Notice to 3rd Party Warehouse

Option 2:

➤Seller sends Ship Notice to Buyer

➤Seller sends copy of Ship Notice to Warehouse

Option 3:

➤Seller sends copy of Ship Notice to 3rd Party Warehouse

➤3rd Party Warehouse sends forwards copy of Ship Notice buyer.

➤ Receipt Advice (861? 944?) to Buyer so that buyer can increment inventory, capture receipt data for planning schedule

➤3rd Party sends Whse Inventory Adjustment Advice (947/??????) as needed.

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Forecast / Planning Business Model 8
SMI - Third-Party Warehouse

Recommended Usage:

➤With Order Model 3 (Blanket Order - Forecast Release)

➤With Inventory Model 3 (Third-Party or Remote Warehouse)

Not Recommended Usage:

➤Consignment