# xpedx.com Next generation

# *Price and Availability Design Document*

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**Note**: The sign off indicates approval of all sections of the document.

Document Revision History

This chart tracks the changes introduced by the revisions to the document as the project progresses through the stages of the System Development Life Cycle (SDLC).

| Version | **Date** | **Description (Changes Made)** | **Author(s)** |
| --- | --- | --- | --- |
| 1.0 | 02/15/2010 | Initial Draft | Sterling |
| 2.0 | 02/19/2010 | Ready to deliver | Sterling |
| 3.0 | 03/08/2010 | Incorporate changes from feedback sessions. | Sterling |
| 4.0 | 04/29/2010 | Incorporated feedbacks from George, except for the web transfer circle which is pending change request. Once approved will update this document again. | Sterling |
| 5.0 | 04/30/1020 | Changes from George |  |

Related or Reference Documents

| Document Name | Description | Owner | Location |
| --- | --- | --- | --- |
| SCI\_Xpedx Solution Definition Document v1.5 | Solution Definition document | Sterling Commerce |  |
| SCI\_xpedx\_Price And Availbility\_Field\_Mapping\_V2.0 | Field Mapping Document | Sterling Commerce |  |
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# Introduction

## Document Purpose

This document is the governing Interface design document for price and availability interface. It presents significant decisions and constructs used in developing the interfaces. Testing, builds, configuration management are not covered in this document.

The document also includes data mapping to be used by respective parties (Sterling, webMethods, Legacy) to design their systems in order to support the interface.

The document will also serve the purpose of keeping a list of assumptions that were made during design discussions.

## Document Audience

This document is intended for management and technical staff working on this project, xpedx IT and Business, webMethods, Legacy(MAX and ACCESS), HP, IW, xpedx/IP Network Team. Sterling will use the document during design and configuration for design consideration.

# Price and Availability

## Overview

This is a real time interface which will be called sometimes On Demand and sometimes by the system automatic depending on the page the items are displayed. The interface data will be used on Sterling pages to give the user stock and pricing information for an item or list of items.

The stock information presented to the user will have warehouse information along with number of days and quantity on hand. The pricing information can be a customer contract pricing or a tier pricing. The tier pricing will have information with regards to the bracket Pricing, UOM and Quantity. It will also have information about cost price for internal users.

The following pages in the website could have provision for Price and Availability check.

* Search and Catalog Listing Page (On Demand)
* Product Detail Page (Automatic)
* Product Compare Page (Automatic)
* My Items List (On Demand)
* Cart Page (Automatic)
* Order Submit (Automatic)

In addition to the pages, these are other places where P&A could be called.

* COM
* Punch out
* Web Service – external systems.

Following are the item / customer rules for which Price and Stock check will not be made.

* Anonymous user
* Special Items
* Certain Customers (driven from customer profile for –BR2)

## Master System

Legacy is the master of record for the inventory picture of an item at a division. For BR1, It is also the master of record for contract and tier based pricing.

## Process Flow

## Sequence Diagram



## Flow Details

* P&A can be invoked either by a user ‘ON DEMAND’ or Automatic by the system.
* User Exit will be configured to call the P&A web service exposed by webMethods. The call is a real time synchronous call to webMethods and will wait for a response. Time-out can be possibly set in the request as defined by webMethods.
* The response could either come back with successful results. Or the transaction, header or line may error out.
* If it is a header or transaction error, none of the lines will have price or availability information. If some lines fail, do not show the price and availability for those. The customers can call CSR for price and availability.
* Based on the customers profile, either all the 15 divisions and the transfers circles will be shown with the on-hand qty and number of days, or they can be rolled up to few in the availability matrix.

## Field Mapping

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Field Name | Length | Data Type | Sterling to webMethods | webMethods to Sterling | webMethods  field only | Description |
| |  | | --- | | Header Level fields | | | | | | | | |
| 1. | Source Indicator | 1 | String | Web -1  B2B -2 |  | Y | The field is used by webMethods as a queue identifier to prioritize the messages. |
| 2. | Transaction Status | 1 | String |  | Transmission Result  P - Pass  F- Fail | Y | Status for the transaction |
| 3. | Environment Id | 2 | String | Populate from Customer profile | Return as Sent |  | This field is used for capturing the environment we are talking to. For e.g PROD, STAGING, DEV. This is populated from the customer batch. |
| 4. | Company | 2 | String | Populate from Customer profile | Return as Sent |  | The field is used by webMethods as a queue identifier. |
| 5. | Customer Branch | 2 | String | Populate from Customer profile | Return as Sent |  | Customer Branch. Its part of the account number. For e.g 30-117930-200. In this case 30 is the customer branch number |
| 6. | Customer Number | 12 | String | Populate from Customer profile | Return as Sent |  | Customer Account No, which is 117930 from the previous example. |
| 7. | Ship To Suffix | 7 | String | Populate from Customer profile | Return as Sent |  | Customer Ship to number, which is 200 from the previous example. |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 8. | Order Br/Default Warehouse | 2 | String | Populate from Customer profile | Return as Sent | Ordering Branch |
| 9. | Header Status Code | 3 | String |  | Legacy Populated Value | Legacy to pass back the error code if header level error occurs. For success pass ‘00’. Here is a list of valid values for the field. 00 - Successful 01 - Invalid Customer |
| Line Level Fields | | | | | | |
| 10. | Line Number | 3 | String | Line Sequence Number | Return as Sent | This is a line identifier to be used by webMethods. |
| 11. | Legacy Product Code | 15 | String | Legacy item number | Return as Sent | Legacy (MAX/Access) product code |
| 12. | Requested Qty UOM | 2 | String | Legacy UOM | Return as Sent | Unit of measure for the requested qty. |
| 13. | Requested Qty | 15,5 | String | Qty Requested | Return as Sent | Qty requested on line. |
| 14. | Purchase Order Qty | 15,5 | String |  | Legacy Populated Value | Display in COM  BR2 |
| 15. | Pricing UOM | 2 | String |  | Legacy Populated Value | Pricing UOM returned by Legacy |
| 16. | Price Currency Code | 3 | String |  | Legacy Populated Value | This is the currency code for the customer price based on customer maintenance / division. |
| 17. | Unit Price per pricing uom | 15,5 | String |  | Legacy Populated Value | Unit price for the pricing uom and not for the requested uom |
| 18. | Unit Price per Requested UOM | 15,5 | String |  | Legacy Populated Value | This is based on the UOM in 12. Currently Legacy sends this in the price per base UOM, for nextgen they will send this in the requested UOM. |
| 19. | Extended Price per requested uom | 15,5 | String |  | Legacy Populated Value | Line total |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 20. | Bracket QTY | 8,0 | String |  | Legacy Populated Value | Bracket Qty, upto 6 brackets |
| 21. | Bracket UOM | 2 | String |  | Legacy Populated Value | Bracket UOM, upto 6 brackets |
| 22. | Bracket Price | 15,5 | String |  | Legacy Populated Value | Bracket Price, upto 6 brackets. This is based on pricing UOM in #15 |
|  | Bracket Currency Code | 3 | String |  | Legacy Populated Value | Barb: We don’t have to add a separate currency code for Bracket, Cost Currency code is used for both Cost and Bracket. |
| 23. | Item Cost per pricing uom | 15,5 | String |  | Legacy Populated Value | Item cost for Internal Users. This is also called as commission cost. This cost will be shown to the internal users on the item detail page. This is based on pricing UOM. |
| 24. | Cost Currency Code | 3 | String |  | Legacy Populated Value | This is the currency code for the internal users cost. And this is the division currency code. |
| 25. | Warehouse | 2 | String |  | Legacy Populated Value | Populate with only stocking locations in the transfer circle. Upto 15 warehouse and transfer circles. |
| 26. | Qty Available | 15,5 | String |  | Legacy Populated Value | Qty Available at the warehouse. Upto 15 warehouse and transfer circles. Based on Requested Qty UOM from #12 |
| 27. | No. Of Days | 2 | String |  | Legacy Populated Value | Oh hand availability in number of days. Upto 15 warehouse and transfer circles. |
| 28. | Line Status Code | 3 | String |  | Legacy Populated Value | Legacy to pass back the error code if line level error occurs. For success pass ‘00’. Here is a list of valid values from Legacy for this field. 00-Successful 01-Invalid Item number 02-Item Number missing 03-Bad UOM 04-Overflow error |

## Schema

## Input Xml (Sterling to webMethods)

<?xml version="1.0" encoding="utf-8"?>

<PriceAndAvailability>

<SourceIndicator/>

<EnvironmentId/>

<Company/>

<CustomerBranch/>

<CustomerNumber/>

<ShipToSuffix/>

<OrderBranch/>

<Items>

<Item>

<LineNumber/>

<LegacyProductCode/>

<RequestedQtyUOM/>

<RequestedQty/>

</Item>

</Items>

</PriceAndAvailability>

## Output Xml (webMethods to Sterling)

<?xml version="1.0" encoding="utf-8"?>

<PriceAndAvailability>

<TransactionStatus/>

<EnvironmentId/>

<Company/>

<CustomerBranch/>

<CustomerNumber/>

<ShipToSuffix/>

<OrderBranch/>

<HeaderStatusCode/>

<Items>

<Item>

<LineNumber/>

<LegacyProductCode/>

<RequestedQtyUOM/>

<RequestedQty/>

<PurchaseOrderQty/>

<PricingUOM/>

<PriceCurrencyCode/>

<UnitPricePerPricingUOM/>

<UnitPricePerRequestedUOM/>

<ExtendedPrice/>

<ItemCost/>

<CostCurrencyCode/>

<Brackets>

<Bracket>

<BracketQTY/>

<BracketUOM/>

<BracketPrice/>

</Bracket>

</Brackets>

<WarehouseLocationList>

<WarehouseLocation>

<Warehouse/>

<AvailableQty/>

<NumberOfDays/>

</WarehouseLocation>

</WarehouseLocationList>

<LineStatusCode/>

</Item>

</Items>

</PriceAndAvailability>

## Screen Shot

NA

## Open Questions

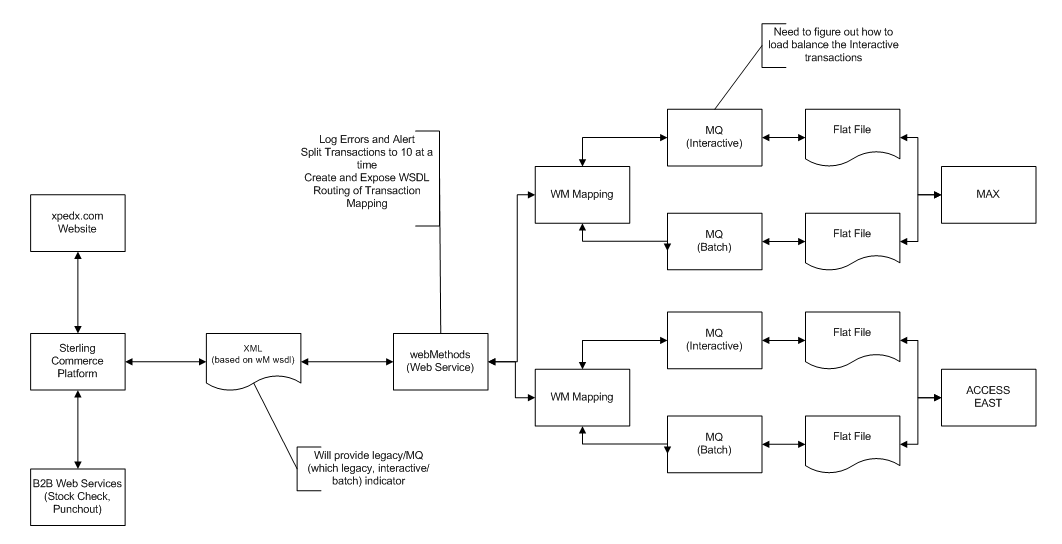
1. Legacy to provide all the possible codes for Header Status Code along with the legacy description. ([**XCNG-142**](http://xpedxit.onjira.com/browse/XCNG-142)) - **COMPLETED**
2. Purchase Order Qty – Need to discuss with business what functionality it drives on the website and in backend.([**XCNG-145**](http://xpedxit.onjira.com/browse/XCNG-145)) . BR4
3. Legacy to provide all the possible codes for Line Status Code along with the legacy description. ([**XCNG-144**](http://xpedxit.onjira.com/browse/XCNG-144)**) – COMPLETED**
4. Once we get the header / line codes, business need to map those to user friendly messages with IW. (XCNG-1**61)**
5. What are the rules to decide whether the customer sees stock information for all the 15 divisions and transfers circle or just few? ([**XCNG-157**](http://xpedxit.onjira.com/browse/XCNG-157)**) JIRA Updated**

## Assumptions

1. In the catalog search page and My Items List page, allow select All and do stock check only if the number of items are less than equal to 25.
2. Based on customer profile, some customers might not be able to see Your Price, in those cases do not show them their price even though stock check has been performed for items.
3. When P&A service is down, display a message to the user that P&A is not available, at this point they can CALL for Price. IW to come up with the site messaging for the same.
4. Orders to go on Hold if they P&A service is down during order place with a note indicating the order was put on hold because P&A was done at the time of order place, CSR to review the HOLD order.
5. For non-stock items P&A check will still be done to get the price. Backend to return price and space (not zeros) for stock information for these items.
6. Environment Id and Company Code information need to be in Customer batch, even though something is just a constant value it needs to be on every customer record.
7. Legacy cannot fulfill more than ‘x’ number of line items in a request for P&A. Sterling to send all the lines in a single transaction to webMethods. webMethods will split the request in batch (batch size to be defined by Legacy) and call P&A internally as many times required and pass a single response back to Sterling with all the lines.
8. ~~Order multiples may be fetched directly from the sterling system and shown on the page along with the P&A info.~~ Order multiples will be fetched directly from the sterling system and shown on the page even before triggering P&A and it can be shown along with the P&A info.
9. Bracket pricing to be taken from the P&A response sent from Legacy.
10. If there is a contract price setup for an item for a customer, we will not get any bracket pricing information in P&A from Legacy for that case.
11. Requested Quantity check needs to be performed against the minimum order qty and order multiple rules. The min order qty and order multiple information will be loaded in Sterling system as part of the batch loads.
12. Requested Qty can be decimal values up to 3 decimal places
13. Brackets are send from Legacy only if there is no contract pricing.

# Connectivity Diagram

## P&A Connectivity Diagram



## Connectivity Process

* webMethods to expose Price and Availability check as web service and provide WSDL to Sterling.
* WSDL endpoint URL will have the service name to distinguish it from other services/ transactions.
* Input / output parameters defined in the WSDL to conform to the Input / Output xml provided by Sterling in the Schema section.
* Sterling will call the web service passing all the items for which P&A check needs to be performed.
* webMethods to parse lines and call Legacy P&A service multiple times (if required) with the same header information. The number of lines they need to parse could be a configured value and is dictated by Legacy.
* Return back results from P&A call to Sterling in the consolidated view as it came in the request.
* webMethods will not point to the services across environments based on the Environment Id. Separate web services address will be given to Sterling to point to a specific environment.

# Glossary of Terms

|  |  |  |
| --- | --- | --- |
| S. No. | Term | Definition |
| 1. | WSDL | Web Services Definition Language |
| 2. | UE (User Exit) | Hooks to write custom code in Sterling |
| 3. | MQ | Message Queue |
| 4. | BR1 | Business Release 1 |