

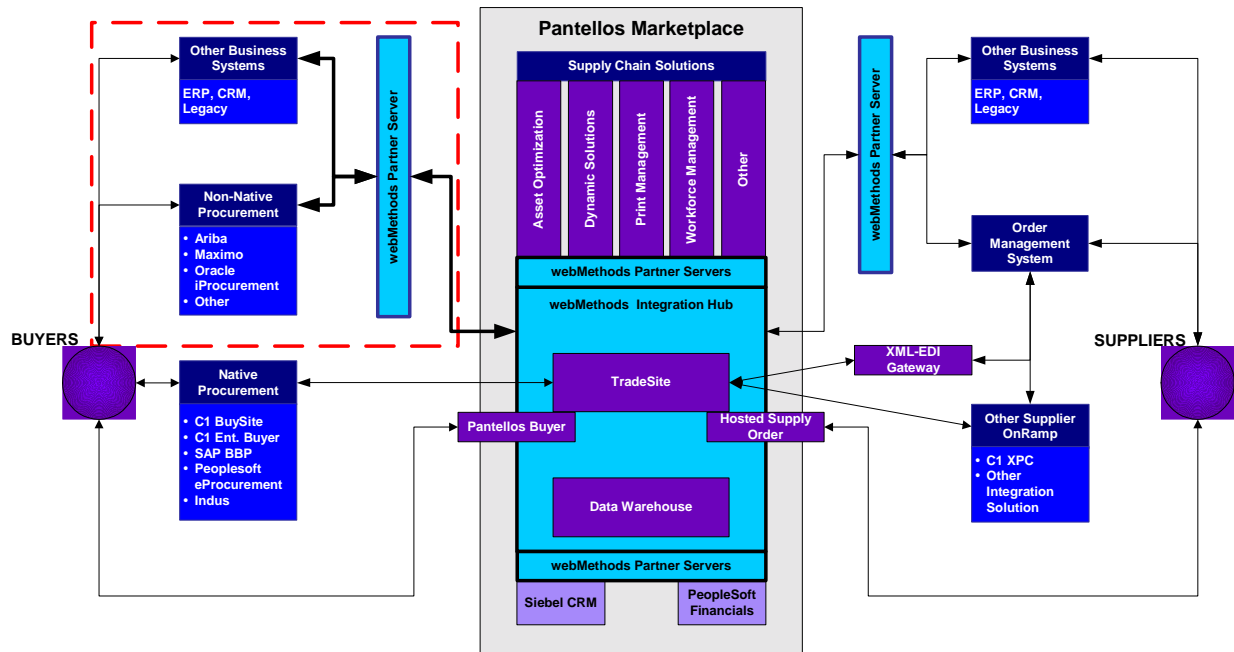
Rapid ERP/EAM Auto-Replenishment Integration with webMethods

Background	Many buyers in the Pantellos Marketplace currently use Enterprise Resource Planning (ERP) systems such as SAP, PeopleSoft, Oracle and J.D. Edwards, and Enterprise Asset Management (EAM) platforms such as Indus, MRO Software (formerly PSDI), and Mincom. Currently, these systems typically generate auto-replenishment orders and transmit them to suppliers via an Electronic Data Interchange (EDI) network.
Issue	In order to assist buyers in integrating their ERP/EAM systems and transactions to the Pantellos Marketplace, Pantellos needs to recommend an integration approach that will provide rapid near-term benefits, as well as long-term scalability.
Approach	<p>Due to the inherent complexity and deep level of customization of typical large-scale ERP/EAM implementations, a phased integration approach is recommended in order to:</p> <ul style="list-style-type: none">• Provide the immediate benefits of transacting through the Pantellos Marketplace, with minimal impact on these systems• Provide a roadmap for more robust integration between these systems and the Pantellos Marketplace in the future
Solution	<p>This document presents a phased integration roadmap for buyers to incrementally integrate their ERP/EAM systems to the Pantellos Marketplace, based on adoption of webMethods* as the Integration Platform to the Pantellos Marketplace.</p> <p>In each phase, Pantellos will support buyers' integration efforts through its partnership with webMethods, and its associated webMethods software and professional services programs.</p> <p>The approach is based on the assumption that existing ERP/EAM systems are currently generating auto-replenishment orders through an EDI network. The roadmap has a short-term objective of leveraging the EDI capabilities of the ERP/EAM platform and using webMethods to translate EDI to XML and deliver documents to and from the Pantellos Marketplace. The long-term objective is to take advantage of the full capabilities of both the ERP/EAM Systems and the Pantellos Marketplace through direct integration, eliminating EDI as an intermediate format.</p> <ul style="list-style-type: none">• Phase 1:<ul style="list-style-type: none">• Integration of a single ERP/EAM platform to the Marketplace• Implementation of a webMethods Partner Server from Pantellos• Mapping of minimum EDI documents to xCBL documents: PO, PO Response• Phase 2:<ul style="list-style-type: none">• Mapping of additional EDI documents to xCBL documents: PO Change, Invoice, ASN• Phase 3:<ul style="list-style-type: none">• Direct integration of one or more ERP/EAM platforms to the Marketplace (eliminating intermediate EDI data formats) <p>* webMethods is the preferred Integration Framework for the Pantellos Marketplace.</p>
Next Steps	Buyers can contact Pantellos to learn more about these solutions. Pantellos will continue to publish documents that provide more detailed information on webMethods and the associated programs referenced in this Position Paper. All of these documents will be available in the Pantellos Marketplace at https://www.pantellos.com/marketplace .

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Overview of webMethods Integration Programs

The following diagram provides an overview of the Pantellos Marketplace Integration Framework, and how webMethods is used to on-ramp Members to the Marketplace.



For Members seeking to integrate their ERP/EAM systems to the Pantellos Marketplace, the implementation of a webMethods Partner Server as the Integration Platform is Pantellos' recommended approach. In the diagram above, the webMethods Partner Server is highlighted in a box on the upper left as the integration solution between Buyers' procurement and other business systems, and the Pantellos Marketplace. Pantellos has created a number of Integration Programs for Members in order to assist them in their webMethods integration initiatives.

Pantellos Member Integration Manager

Pantellos assigns a Member Integration Manager to work with each Member through their integration initiative. This individual will be the primary Pantellos technology contact for the Member, and will provide assistance in the form of technical information and resources within Pantellos to assist with integration planning. The Member Integration Manager will also assist the Member with all of the following programs.

Pantellos Marketplace

By logging in to the Pantellos Marketplace at <https://www.pantellos.com/marketplace>, Members can find valuable technical documentation on integration to the Marketplace such as whitepapers and specifications.

webMethods Partner Server Program

The webMethods Partner Server is the Internet Integration (also known as B2B Integration) software that connects Members' enterprise systems to the Pantellos Marketplace. In partnership with webMethods, Pantellos has created a secure website for Members to access not only the software they need to on-ramp to the Marketplace, but a variety of information to assist with planning and implementation of webMethods.

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By registering at <http://pantellos.b2b.com> , Members will be provided with secure access to webMethods software and documentation.

Pantellos Rapid On-Ramp Services

These technology integration services are designed for Members to quickly integrate to the Pantellos Marketplace using webMethods, from various procurement applications. Through Pantellos Professional Services and agreements with several preferred Systems Integrators, Pantellos offers both standard fixed-fee integration packages for EDI systems, as well as customized integration solutions to meet Members' integration requirements. Pantellos will work with each Member to recommend an integration package best suited to their requirements.

Pantellos Test Facility

The Pantellos Test Facility is a fully functional "replica" of the Pantellos production Marketplace, dedicated to supporting Members as they develop integration between their systems and the Marketplace. Members may access this facility to test their integration solutions to the Pantellos Marketplace prior to entering the Pantellos Certification process. Buyers are provided with access to "Supply Order" – Pantellos' hosted Order Management solution for suppliers – in order to receive and respond to their own transactions as a supplier in the Marketplace would.

Certification

As a final step before entering production, Pantellos will jointly execute a series of predetermined transactions with the Member, intended to demonstrate end-to-end readiness between the Marketplace and the Member's enterprise systems. Pantellos will provide the required testcases, as well as act as the "supplier" to receive and respond to transactions from the buyer.

ERP/EAM Integration Roadmap

Phase 1 – Integrating EDI Purchase Orders with webMethods

The objective of the first integration phase is to rapidly on-ramp the Member's ERP/EAM system to the Marketplace, while creating the integration infrastructure required for future phases.

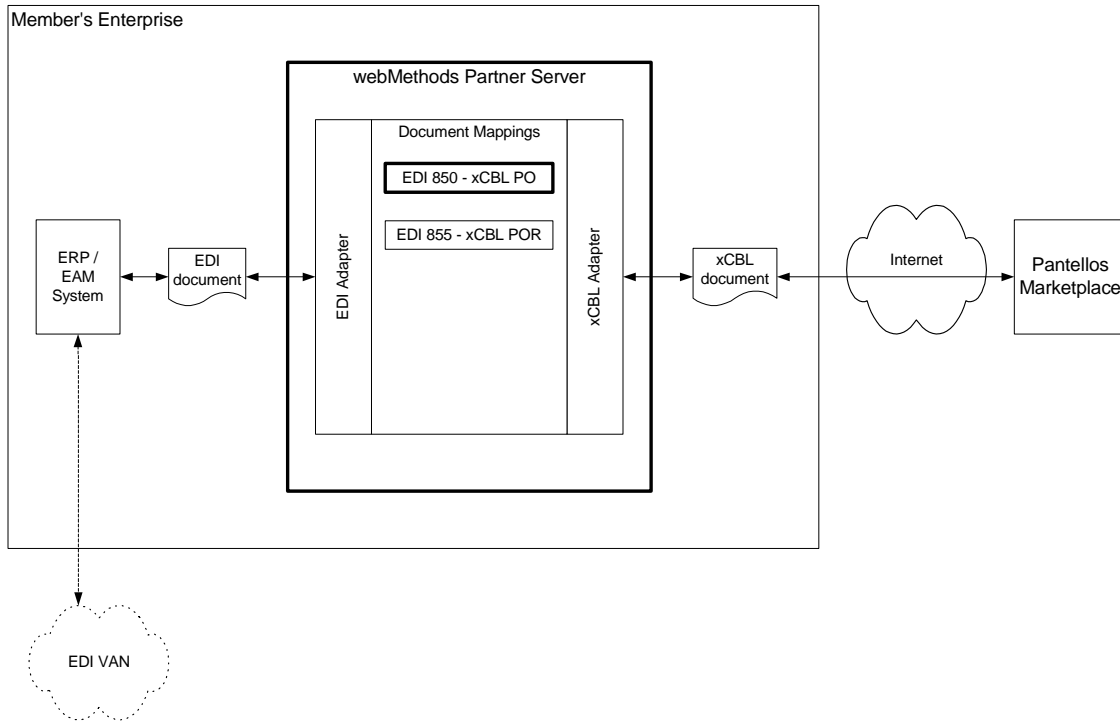
The scope of this phase is:

- Implementation of a webMethods Partner Server from Pantellos
- Integration of a single ERP/EAM platform to the Marketplace
- Mapping of a minimum set of EDI documents to xCBL documents: PO, and optionally PO Response

Solution Overview

It is assumed that the ERP/EAM system currently processes orders via EDI to an EDI VAN. With only minor changes to the ERP/EAM system, these EDI orders can be rerouted to the webMethods Partner Server. webMethods will be used to translate between EDI and xCBL (the Pantellos Marketplace standard), and to manage the routing and delivery of documents to and from the Marketplace.

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Referring to the diagram above, the flow for delivering a Purchase Order (EDI 850) to a supplier via the Pantellos Marketplace would work as follows:

- The ERP/EAM system would be modified to:
 - Identify Purchase Orders (based on Supplier) that are to be routed to the Pantellos Marketplace
 - Place these Purchase Orders in files (in EDI 850 format) and send them to the webMethods Partner Server
- The webMethods Partner Server would then:
 - Receive the EDI formatted purchase order using the EDI Adapter
 - Translate the EDI 850 Purchase Order to an xCBL Purchase Order using the EDI 850 – xCBL PO document mapping
 - Package and transmit the Purchase Order to the Pantellos Marketplace
 - Receive acknowledgement of receipt from the Marketplace

If implemented as part of this Phase, the flow for receiving a Purchase Order Response (EDI 855) from a supplier via the Pantellos Marketplace would be:

- The webMethods Partner Server would:
 - Receive the xCBL formatted purchase order response from the Marketplace using the xCBL Adapter
 - Translate the xCBL Purchase Order Response to an EDI 855 Purchase Order using the EDI 855 – xCBL POR document mapping
 - Place this Purchase Order Acknowledgement (in EDI 855 format) in a file and send it to the ERP/EAM
- The ERP/EAM system would be modified to:

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- Receive these Purchase Order Acknowledgement files (in EDI 855 format) from the webMethods Partner Server

Implementation Steps

The duration of this phase is estimated at 4-8 weeks (depending in part on whether the PO Response document is implemented in this Phase), and the work effort over this duration is approximately 160-320 hours (1 FTE – Full Time Equivalent) for the customer, and 320-640 hours (2 FTE) for the Systems Integrator. The customer work effort may be divided between a systems administrator and an EDI developer/administrator.

The Member would typically follow these steps to implement this solution:

Planning:

- Contact Pantellos to indicate interest in this solution.
 - Pantellos will assign an Integration Manager to assist with the integration process.
 - Pantellos will recommend one of our Partner Systems Integrators and a specific Integration Package.
- Access planning documentation and register for the required webMethods software at <http://pantellos.b2b.com>.
 - Pantellos will fulfill the registration and assign the appropriate webMethods software.

Implementation:

- Acquire and install the required hardware to run the webMethods software.
- Download (from <http://pantellos.b2b.com>) and install the webMethods software.
- Design and develop the necessary document mappings (EDI 850 to xCBL PO at a minimum).
- Design and develop the necessary modifications to the ERP/EAM system to direct POs to the webMethods Partner Server.
- Test communications & functionality between the ERP/EAM System and the webMethods Partner Server.

Integration Testing:

- Contact Pantellos to gain access to the Pantellos Test Facility. Pantellos will provide the necessary connectivity information, catalog content and access to support staff.
- Configure the webMethods Partner Server to communicate with the Test Facility.
- Test communications between the webMethods Partner Server and the Pantellos Test Facility.
- Execute “end-to-end” transaction tests from the ERP/EAM system to a simulated supplier in the Pantellos Test Facility.

Certification:

- Contact Pantellos to indicate readiness for Certification. Pantellos will provide the necessary connectivity information, catalog content and access to support staff.
- Configure the webMethods Partner Server to communicate with the Certification Environment.

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- Jointly execute Certification Testing with Pantellos.

Production:

- Upon successful completion of Certification Testing, the Member and Pantellos agree on production readiness. No additional configuration of webMethods is required for Production.
- Once the ERP/EAM systems have the information needed for generating orders (typically the specific supplier's catalogs), production transactions can commence.

Phase 2 – Integrating Additional EDI Documents with webMethods

The objective of the second integration phase is to build on the Phase 1 solution by adding additional EDI transactions supported by the ERP/EAM System. The following is a list of the additional EDI transactions that can be mapped to xCBL documents.

- EDI 855 - PO Acknowledgement (if not implemented in Phase 1)
- EDI 860 - PO Change
- EDI 865 – PO Change Acknowledgement
- EDI 810 – Invoice
- EDI 856 – Advance Ship Notice

The scope of this phase is:

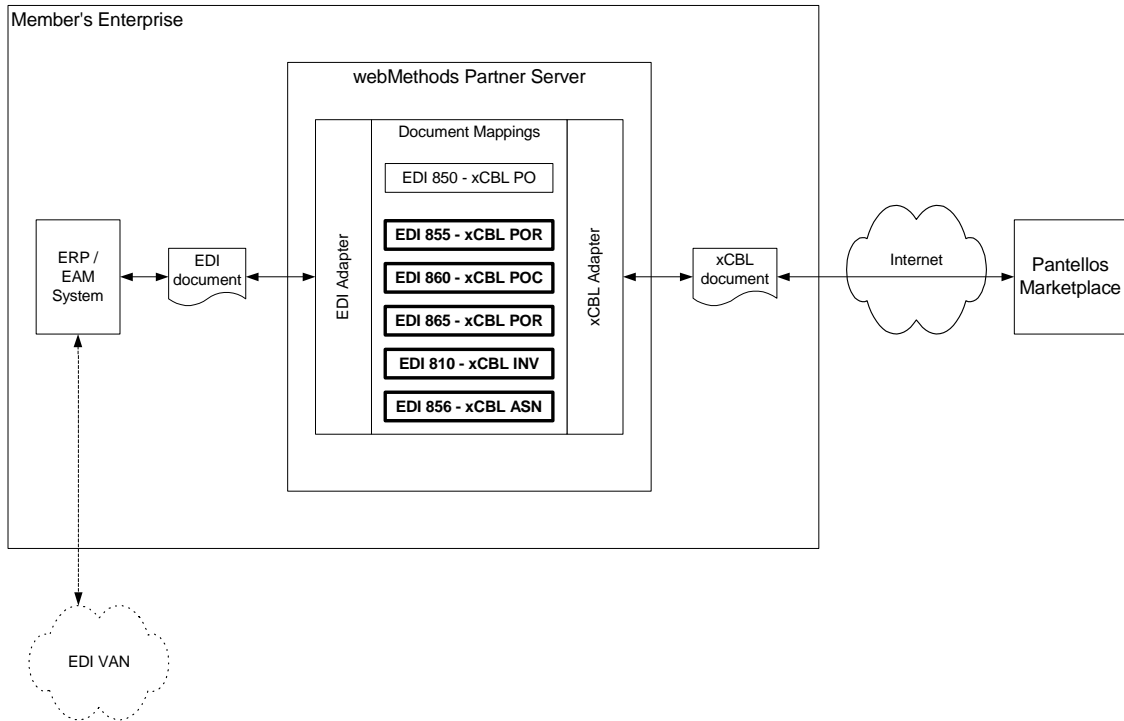
- Analysis and prioritization of which additional EDI documents to support, based on:
 - Current ERP/EAM System capabilities – which additional EDI transactions are currently supported
 - business requirements – which of these EDI transactions are the highest priority for transacting with specific suppliers via the Pantellos Marketplace
- Mapping of some or all of these additional EDI documents to xCBL documents

Note that this Phase can be executed iteratively, with the highest-priority document implemented first, followed by additional documents as needed.

Solution Overview

It is assumed that the Phase 1 solution has already been implemented, so the webMethods Partner Server is operational and integrated to the ERP/EAM system and the Pantellos Marketplace. A document mapping will be required for each additional EDI transaction supported; these are shown in bold in the diagram below.

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Referring to the diagram above, the flow for delivering outbound documents (EDI 860) to a supplier via the Pantellos Marketplace would work as follows:

- The ERP/EAM system would be modified to:
 - Identify transactions (based on Supplier) that are to be routed to the Pantellos Marketplace
 - Place these transactions in files (in EDI format) and send them to the webMethods Partner Server
- The webMethods Partner Server would then:
 - Receive the EDI formatted transaction using the EDI Adapter
 - Translate the EDI document to the corresponding xCBL document using the appropriate document mapping
 - Package and transmit the document to the Pantellos Marketplace
 - Receive acknowledgement of receipt from the Marketplace

The flow for receiving inbound documents (EDI 855, 865, 810, 856) from a supplier via the Pantellos Marketplace would be:

- The webMethods Partner Server would:
 - Receive the xCBL formatted document from the Marketplace using the xCBL Adapter
 - Translate the xCBL document to the corresponding EDI document using the appropriate document mapping
 - Place the document (in EDI format) in a file and send it to the ERP/EAM
- The ERP/EAM system would be modified to:
 - Receive these document transaction files (in EDI 855 format) from the webMethods Partner Server

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Implementation Steps

The duration of this phase is estimated at 3-6 weeks (depending on how many of the additional documents listed above are implemented concurrently), and the work effort over this duration is approximately 60-120 hours (0.5 FTE) for the customer, and 180-360 hours (1.5 FTE) for the Systems Integrator. The customer work effort may be divided between a systems administrator and an EDI developer/administrator.

The Member would typically follow these steps to implement this solution. Note that since Phase 2 is an incremental addition to Phase 1, many steps in the Implementation, Integration Testing and Certification stages can be eliminated or simplified.

Planning:

- Determine which additional documents to implement.
- Contact Pantellos.
 - Pantellos will assign an Integration Manager to assist with the integration process.
 - If required, Pantellos will recommend one of our Partner Systems Integrators and a specific Integration Package (since Phase 2 is an incremental build on Phase 1, the Member may choose to either implement the additional document maps themselves, or re-engage the Systems Integrator that performed the Phase 1 work).

Implementation:

- Design and develop the necessary document mappings.
- Design and develop the necessary modifications to the ERP/EAM system to send/receive the additional EDI documents to/from the webMethods Partner Server.
- Test incremental functionality for the additional document types between the ERP/EAM System and the webMethods Partner Server.

Integration Testing:

Note that since Phase 2 is an incremental build on Phase 1, full integration testing may not be required. Use of the Pantellos Test Facility prior to Certification of the additional document types is optional at the Member's discretion.

- Contact Pantellos to gain access to the Pantellos Test Facility. Pantellos will provide the necessary connectivity information, catalog content and access to support staff.
- Configure the webMethods Partner Server to communicate with the Test Facility.
- Test communications between the webMethods Partner Server and the Pantellos Test Facility.
- Execute "end-to-end" transaction tests from the ERP/EAM system to a simulated supplier in the Pantellos Test Facility.

Certification:

Certification is required for each additional document type to be supported.

- Contact Pantellos to indicate readiness for Certification. Pantellos will provide the necessary connectivity information, catalog content and access to support staff.
- Configure the webMethods Partner Server to communicate with the Certification Environment.
- Jointly execute Certification Testing with Pantellos.

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Production:

- Upon successful completion of Certification Testing, the Member and Pantellos agree on production readiness. No additional configuration of webMethods is required for Production.

Phase 3 – Direct ERP/EAM Integration with webMethods

Most ERP/EAM Systems are capable of more sophisticated integration and transactions than those supported by the EDI transaction set. Pantellos' XML-based transactional capabilities are continuously expanding, so there will be transactional capabilities available in the Pantellos Marketplace and Members' systems that do not have any corresponding EDI transaction. There will also be enhancements to existing procurement transactions that are outside of the scope of the EDI specification. In order to take advantage of the full suite of transactional capabilities in the Pantellos Marketplace, while leveraging the webMethods infrastructure already in place, a direct integration between Members' systems and the Marketplace is required.

Implementation of direct integration to ERP/EAM systems is often a complex project, requiring an integration plan that is aligned with the Member's overall Enterprise Application and Internet Integration strategies, as well as specific to the system(s) and transactions being integrated. Planning for this integration should begin immediately, during the implementation of the intermediate Phases 1 and 2.

The objective of the third integration phase is to leverage the capabilities of the webMethods integration platform by eliminating EDI as an intermediate data format, and directly integrating the ERP/EAM System(s) with webMethods. It is assumed that the Phase 1/2 solution has already been implemented, so the webMethods Partner Server is operational and integrated to the Pantellos Marketplace.

Enterprise Application Integration (EAI) is the technology used to integrate applications within a company, enabling various internal "enterprise" systems such as ERP, EAM, CRM and Legacy systems to exchange data. Internet Integration (also known as B2B Integration) is the technology used to integrate the company's systems to one or more trading partners' systems over the Internet.

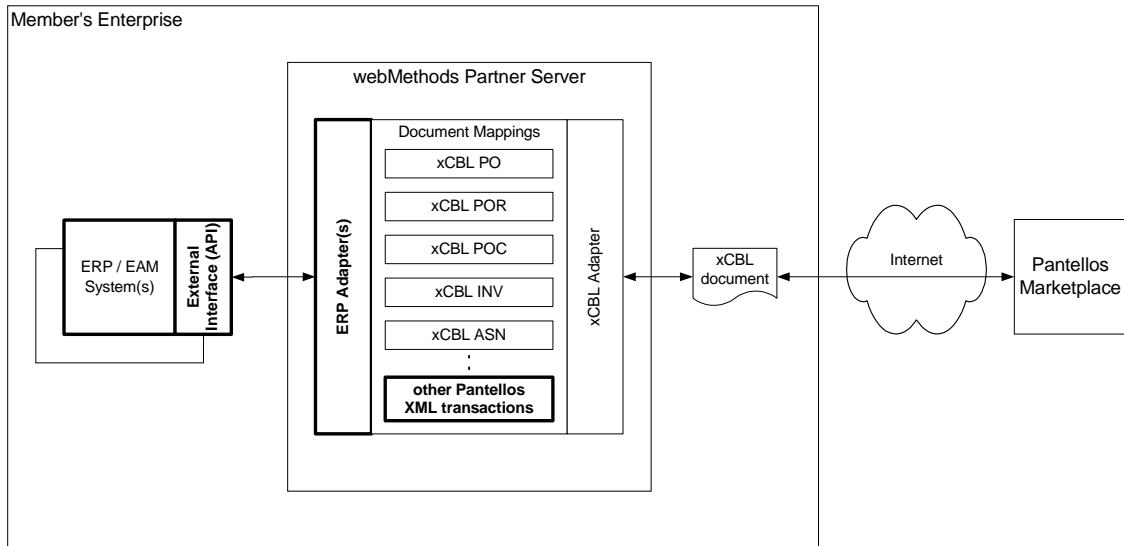
The webMethods Partner Server that Pantellos provides to Members is a B2B Internet Integration Platform. Depending on the Member's EAI strategy, it can be used to integrate to the Pantellos Marketplace in one of two ways:

- integrated directly to one or more ERP/EAM systems
- integrated through the Member's EAI platform (webMethods or other)

Integration Directly Between ERP/EAM Systems and webMethods

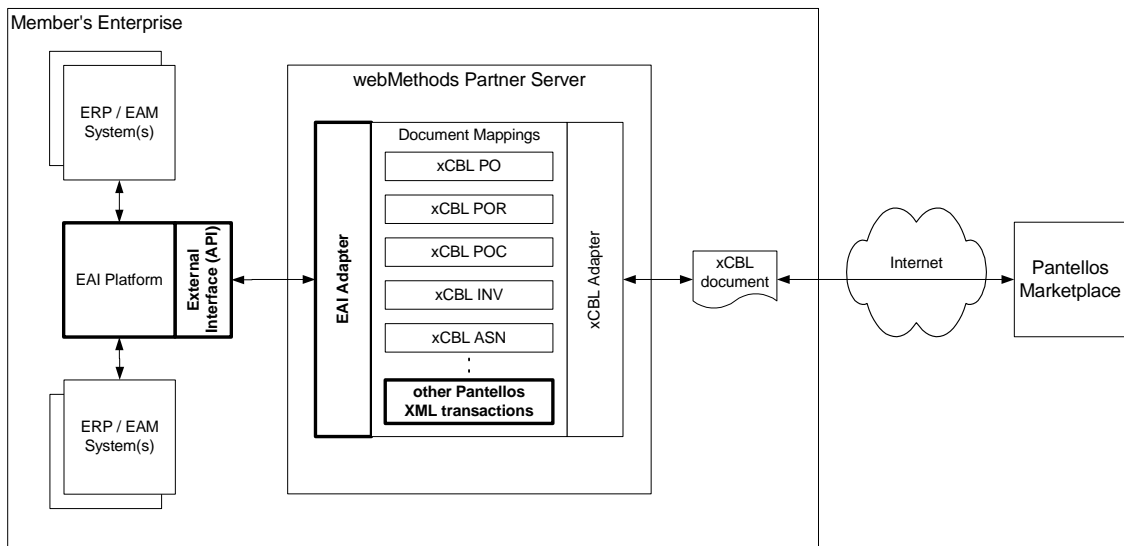
Highlighted in bold in the diagram below, ERP Systems typically have an External Interface, or Application Programming Interface (API). This interface exposes more capabilities in the ERP system than are available through EDI transactions. Combined with a webMethods ERP Adapter that communicates directly with the ERP System through the interface, the webMethods Partner Server solution allows the Member's systems to transact with the Marketplace based on the capabilities of the ERP/EAM System and the Pantellos Marketplace, without the limitation imposed by the need for an intermediate EDI transaction.

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Integration Through the Member's EAI Platform with webMethods

Highlighted in bold on the left in the diagram below, the ERP/EAM Systems are integrated within the Member's enterprise, using webMethods or some other EAI platform. The EAI platform manages transactions between the various internal systems, and also provides a single interface between all internal systems and the webMethods Partner Server. Combined with a webMethods EAI Adapter that communicates directly with the EAI platform through the interface, the webMethods Partner Server solution allows all of the Member's systems to transact with the Marketplace based on the capabilities of the ERP/EAM Systems, the EAI platform, and the Pantellos Marketplace.



For additional information:

Please contact Pantellos at technology@pantellos.com, or 877 777 4888.