



TECHNICAL WHITE PAPER

MAP ACCELERATOR FOR IBM WEBSPHERE

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1 INTRODUCTION

Today, companies are facing the challenge to consolidate their internal (EAI) and external (B2B, EDI) application integration solutions on one platform.

Until now, they used to operate several different products to address the specific needs of EAI and B2B. Most of these systems are old, monolithic and expensive to maintain. By combining these solutions into one new platform, it becomes possible to handle both EAI and B2B with one product and manage and monitor the internal and external communication from one central point.

On top of these advantages they can start using new technologies to lower the cost of B2B like exchanging EDI and XML messages via AS2 instead of via the traditional Value Added Networks, and implement Business Activity Monitoring and Business Process Integration to streamline communications and make it more manageable.

Newer products like IBM WebSphere are implemented in order to accomplish the above, but there are several hurdles to take when converting from older integration systems to the new integration platform.

It is a commonly known fact that by far the biggest hurdle to take in migrating business integration solutions to new platforms is the effort and cost involved in the migration of maps and document specifications. Various conversion projects have shown that the average cost of manually converting one map to a new environment totals around US\$ (or €) 5,000. Even if the development is done offshore, the average cost is still US\$ (or €) 750 per map.

This document describes the Covast Map Accelerator for IBM WebSphere, a new automated help to migrate business integration solutions to this modern integration platform.



2 FUNCTIONALITY

2.1 THE CURRENT SITUATION

In the current situation, the customer has an B2B/EDI system in place that takes care of all the messages exchanged between internal backend systems and external business partners.

These message exchanges are based on standards that are globally defined, used within a specific community (vertical industry) or are just based on a specific implementation guideline agreed upon between business partners. A lot of the "standard" messages are tweaked and tailored to specific business needs.

These EDI and backend message definitions (the message metadata), used by the current EDI system to create and validate messages at runtime, have been entered into the EDI system's repository by one of the following means:

- They are imported from meta data directories provided by standards bodies like DISA, UN/EDIFACT or others;
- They are created with an EDI Guideline Development tool (for example: Foresight EDISIM, Edifecs SpecBuilder and others) which exports a format that can be imported into the EDI tool;
- They are defined from scratch.

In most cases, after having imported standard document definitions, they will be tweaked and tailored specific to the business partners' or companies' needs using some kind of message specification editor that is shipped as part of the EDI system.

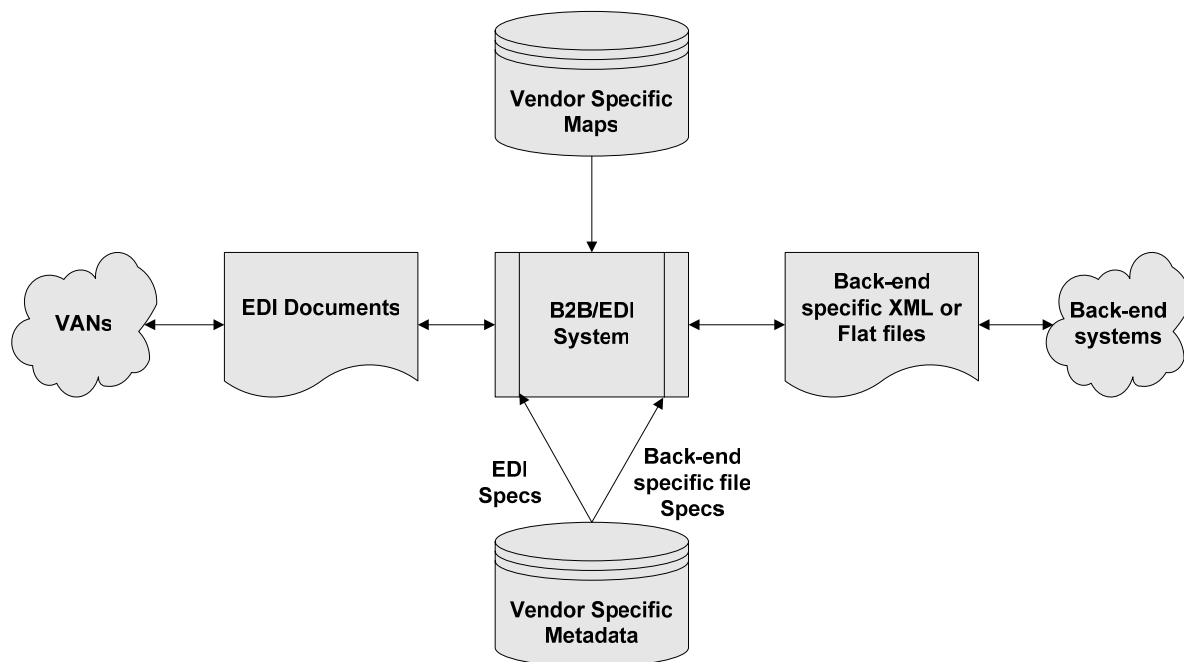
Also in most cases, companies end up with several different variations of one and the same Purchase Order message specification, but they have to keep a definition specific to each business partner in their repositories in order to accommodate the various deviations from the standards and the specific customer tweaks.

These document specifications are usually stored in flat files or in proprietary databases.

The proprietary, vendor specific maps that have been created using the EDI system's (visual) mapping tool contain the mapping rules between source and target messages (EDI, Flat File or XML) and are usually also stored in some kind of database or proprietary flat file.

Most of the times, the maps that are created with such a (visual) mapping tool are based on a design (the so-called "paper map") created by an EDI consultant. The tool that is most often used for creating paper maps is a spreadsheet.

Figure 1: The current situation



2.2 THE MIGRATION

As already indicated in the previous chapter, most B2B/EDI systems usually store document specifications and maps in a proprietary (compiled) format in a database or flat file. This information could not be used without decompiling it, but since all of these B2B/EDI systems support some kind of reporting or exporting of document specifications and maps, the Map Accelerator can use these reports or export files as the input for converting this information to the new environment.

Since the original designs of maps and implementation guidelines (most of the times outlined in spreadsheets or developed using one of the specialized tools like Edifecs SpecBuilder) hardly ever reflect the current version of specifications used in production (in the IT world, designs are never up-to-date), the best way to recreate these specifications in the new system is by directly generating them from the original document specifications and maps that are currently used in production.

These reports or exports can be parsed and can then be used to generate the source and target document specifications and the mapping between them.

Challenges in (manual and automated) map conversion are mainly focused around:

- Map condition handling;
- The standard function library (the so-called "canned functions") provided with the EDI system;
- Custom functions (scripts);
- Usage of external functions.

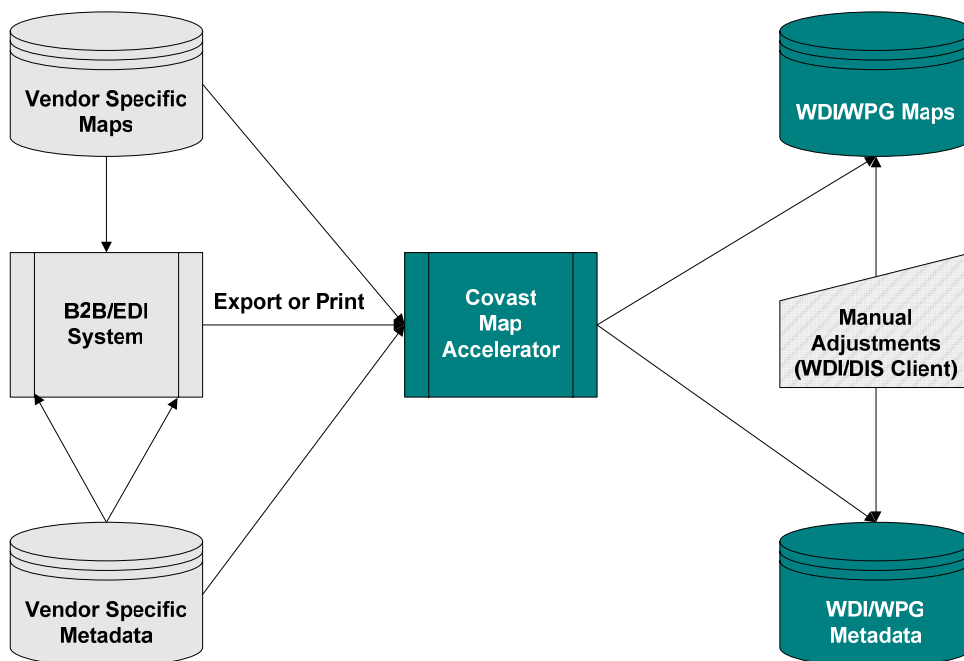
Map conditions and calling external functions can be migrated automatically in most cases. For the greater part of the list of canned functions, an alternative will be

available as part of the library shipped with the Map Accelerator and can therefore be migrated (in most cases) 100% automatically. Even the custom functions (scripts) can be migrated automatically and will be annotated as such, that it will be an easy task to finalize the map manually.

Based on evaluations of migrations of business integration solutions to IBM WebSphere Data Interchange (WDI) and WebSphere Partner Gateway (WPG), a 100% migration success for the source and target document definitions and an average automatic conversion rate of 80% of the map is typically achieved. The remaining 20% of the map that could not be converted automatically will be annotated with all the details available in the original map. This will help the consultant responsible for the migration to finish the map development manually without needing access again to the previous system, since 100% of the original map information is available to him in the WebSphere Mapper environment.

The great thing about the Map Accelerator is that it guarantees that *what* it converted automatically is *100% correct*. This prevents the consultant responsible for the conversion to have to go through the entire map again – which would result in almost 0% productivity gain.

Figure 2: The Migration

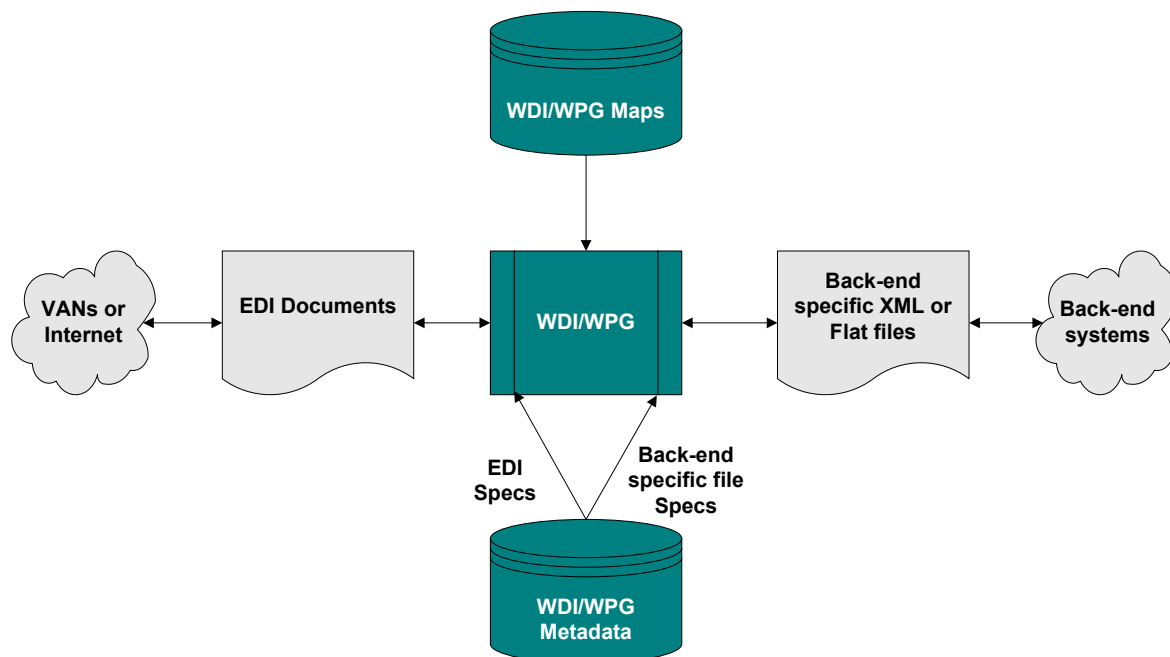


2.3 THE RESULT

The result of the conversion process is a situation where the user can pass messages through the new system, that result in the same output as generated by the previous system using the same message instances as the input.

By converting the document specifications and maps one-by-one, the new system can gradually take over the old systems' functionality and in the end, when all specifications and maps have been converted, the old system(s) can be retired.

Figure 3: The Migrated Situation



2.4 SUPPORTED DOCUMENT STANDARDS

The Map Accelerator supports the conversion of the following document standards and the maps using them as the source or target document standard:

- Positional Flat File
- Delimited Flat File
- XML
- X12 (U.S.)
- VICS (U.S. general merchandise retail)
- WINS (U.S. warehousing retail)
- UCS (U.S. grocery retail)
- EDIFACT (Worldwide)
- EANCOM (European retail)
- Tradacoms (U.K.)
- Odette (Automotive)

2.5 USER EXPERIENCE

The Map Accelerator is a tool that is operated by a consultant who is familiar with implementing WebSphere solutions. The consultant also needs access to the current EDI system, preferably via somebody within the company who is familiar with the current EDI environment.



The steps that the consultant will need to execute are the following:

- Print (to file) or export the source and target document specifications and map from the current B2B/EDI environment using the standard facilities available;
- Open the map report in the Map Accelerator. The tool will analyze it, recognize the type and version of the report and show the source standard, document type, version and release and the target standard, document type, version and release of the documents specified in the map. For each of these properties you can overwrite the default generated settings, such as: standard, document type, version, release and description. In this same dialog you can also decide to create a partner specific set of schemas and a map. The filenames for the source schema, target schema and map can also be configured in this dialog;
- Execute the "Start conversion" task.

The above steps will result in two import files for the source and target message and a map import file. These import files are compatible with IBM WebSphere Data Interchange (WDI) and WebSphere Partner Gateway (WPG). All three can be imported into the WebSphere database using the appropriate WebSphere Client.

The two generated message definition import files can be one of the following:

- A WDI/WPG Standard (EDI) import file;
- A WDI Data Format or WPG Record Oriented Data (Flat File) import file.

The generated WDI/WPG Map, can be customized by opening it in the WDI or DIS Client. Problems in the generated map are reported in annotations visible to the consultant. These annotations guide the consultant to develop solutions for the specific mapping issues that could not be migrated automatically.

The consultant can now test the results, by using the native WebSphere functionality for testing maps and generating and validating instances.



3 LIST OF SUPPORTED INTEGRATION SYSTEMS

The list of integration systems and versions that can be converted using the Map Accelerator is growing and currently includes:

- Sterling Gentran:Server for Unix
- Sterling Gentran:Server and Gentran:Director (Pro) for Windows
- Sterling Gentran:Basic for Mainframe
- Axway AMTriX – all versions using Datamapper 3.0
- webMethods Integration Server
- Mercator
- TIE eVision – all versions using spEDI*map 2.0 or higher

Please consult Covast for information on the latest developments.



4 TECHNICAL REQUIREMENTS

To install Covast Map Accelerator for IBM WebSphere, the following hardware and software is required at a minimum:

- Microsoft Windows 2000 (SP4), 2003 or XP (SP1)
- 450 megahertz (MHz) or higher Intel Pentium-compatible CPU
- 256 megabytes (Mb) of RAM
- 200 megabytes (Mb) of free hard disk space
- CD-ROM or DVD-ROM drive
- Super VGA monitor (800 x 600) or higher resolution monitor with 256 colors
- Mouse or compatible pointing device

The tool is a stand-alone tool and therefore does not need to run in an IBM WebSphere environment.

The output generated by the Map Accelerator is compatible with IBM WebSphere Data Interchange 3.2 and WebSphere Partner Gateway 6.0, both the most recent versions of these products.



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