IBM®

Redbooks

Solutions to Accelerate Compliance with Affordable Care Act (ACA) Mandates and HIPAA Standards

IBM Redbooks Solution Guide

The healthcare payer ecosystem in the United States has changed dramatically over the last decade and is expected to evolve at an even faster pace over the next few years. Many world-class companies involved in healthcare payment processing are finding themselves constrained by their existing information technology infrastructure. The silos that they built around business-to-business (B2B) processing are constraining them, making it difficult to achieve governmental mandates and (more importantly) increase processing efficiency and competitive advantage.

Gone are the days of a small set of data following static and simple standards traded between a limited set of organizations. Gone are the days where the rules for when data is valid versus invalid can expressed in a paragraph or two. Gone are the days when information about a healthcare payment was almost entirely about the "who," "when," and "how much."

The payers' world today requires adherence to multiple industry standards, government regulations, and industry expectations. It is becoming more technical and payers need to become more agile (Figure 1). IBM Transformation Extender Advanced is your answer to B2B enablement in today's complex HIPAA/ACA (Health Insurance Portability and Accountability Act/Affordable Care Act) world.
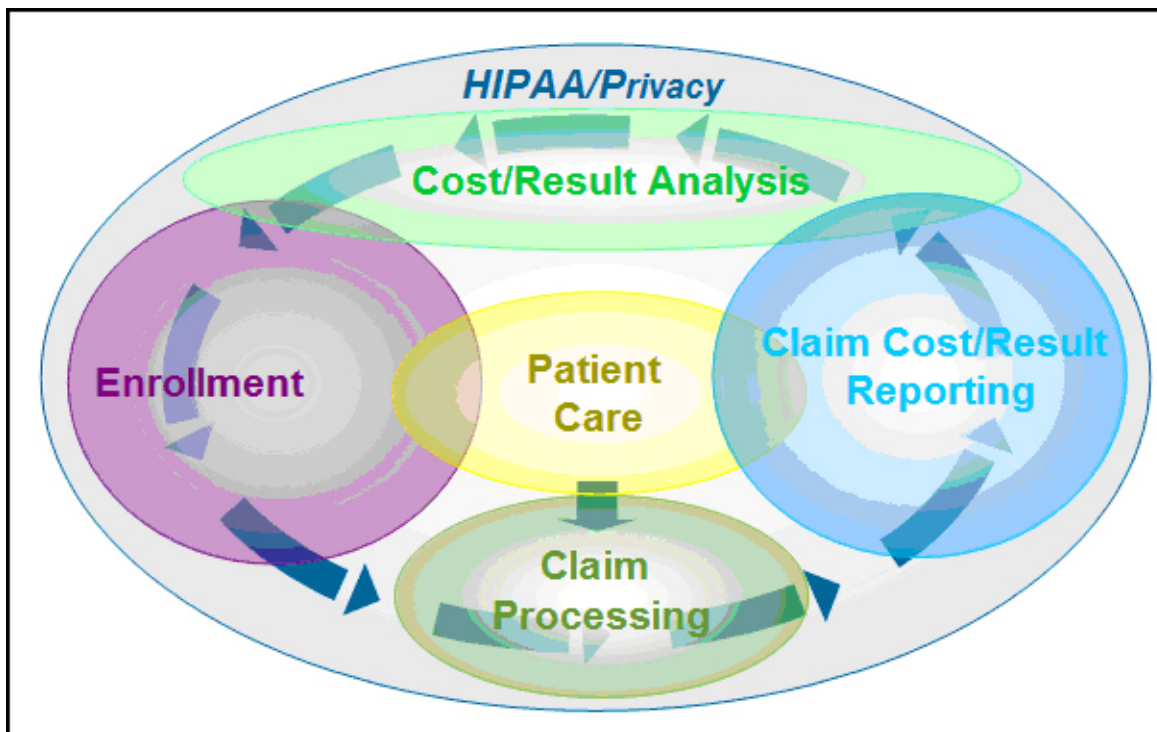

Figure 1. Today's healthcare payer infrastructure: More than just claims

Did you know?

IBM Transformation Extender Advanced provides a modular, comprehensive solution for transforming for healthcare payers. It includes these features:

- Modular, scalable document mediation

- Consistent capabilities across multiple industry standards

- Automated processing that adheres to industry practices

- Support for IBM Transformation Extender, IBM Sterling, and Extensible Stylesheet Language Transformations (XSLT) transformation maps

- Integration with multiple IBM products and third party applications

Business value

IBM Transformation Extender Advanced addresses the administrative simplification aspects of HIPAA legislation, that is, the standardization of electronic patient health, administrative, and financial data. This solution enables organizations to accomplish these objectives:

- Process the increasing volumes and regulatory complexity associated with US healthcare messaging

- Build complete, certifiable healthcare solutions for HIPAA and Health Insurance Exchanges and reporting requirements

- Break down data silos, allowing a customer centric view of the data.

This solution also provides these capabilities:

- A modular, scalable document processing capability to help enable HIPAA compliance supporting WEDI/SNIP levels 1-7

- Ready-to-execute templates and compliance validation for the complete ASC X12N HIPAA standard as well as several additional non-mandated transactions useful for HIPAA EDI based processing.

HIPAA Data Formats for ACA: Much more than meets the eye

In Figure 1, you see a small example of the new and future look of HIPAA/ACA related processing related to healthcare claims. The traditional claims process includes the following steps:

1. Patient receives care from healthcare provider (doctor).

2. Healthcare provider bills healthcare payer (insurance company).

3. Healthcare payer determines how much to pay based on services and goods the patient received from provider compared to "usual and customary" costs.

4. Healthcare payer pays healthcare provider.

This traditional view is not at all patient-centric; it lacks patient involvement in much of the decision making, incentives, and feedback. It is expected that the US healthcare market, through the use of better data standards processing implemented as part of HIPAA, the ACA and other recent mandates will evolve into a much more accountably responsive system. The expectation is a system which is more responsive to social, economic, and technological advances.

The key to understanding how ACA is designed to improve the United States Healthcare ecosystem is to focus on the first word, affordable. Once of the keys to making the system more affordable is by increasing accountability in the system.

For example, by involving the healthcare consumer in more decisions, including selection based on the costs of various treatment options, the combination of the better educated consumer and the more transparent healthcare pricing should increase affordability. The trend away from "fee for service" to "outcome based compensation" and increasing regulations around reporting transparency are also big shifts in the US; the benefits are projected to be tremendous and should put the US more in line with healthcare systems in other developed nations. As the changes listed here cover several broad concepts, we will focus on just the differences shown in Figure 1.

The Accountable Claims Process includes the following steps:

1. The patient is enrolled in a tier of coverage through an Insurance Exchange. The patient selects their level of coverage's versus out of pocket charges; potentially giving them a greater level of control over their healthcare options than they traditionally had.

2. The patient selects a healthcare provider (doctor) when they need services. It is anticipated that the patient, with more control over their enrollment process, will follow through in the provider selection process and select providers based on quality and cost of services.

3. The provider treats and monitors the patient knowing that many services will be paid based on a matrix of outcomes and not per-service. In other words, fully, partially, or not resolving the disease state will impact reimbursement.

4. Richer more complete information regarding services and outcomes will be communicated, collected, and analyzed across multiple providers, healthcare systems, states, and possibly regions.

5. Based on quantitative analytics, the cost versus effectiveness of various services can be determined allowing for adaptive models for coverage and reimbursement.

So the big question becomes, can your organization get from the "traditional claims process" to the "accountable claims process"? And the answer is "yes, if you leverage the data." Using the HIPAA and related data standards and being able to consume, track, validate, acknowledge, transform, and transmit it will be key to your success. This is a cornerstone of the IBM Transformation Extender Advanced value proposition.

Solution overview

Leveraging Industry standards allows businesses to transfer structured information from one computer system to another, often in different companies, with little or no manual intervention. IBM Transformation Extender Advanced is a modular, scalable document processing solution for transforming structured documents in key industry verticals. It goes beyond the "one standard at a time" processing typical of B2B systems, allowing a common set of tooling across standards.

IBM Transformation Extender Advanced helps enable organizations to address the increasing volumes and regulatory complexity associated with US healthcare messaging, add additional EDI transformation capabilities to an IBM Integration Bus or Transformation Extender Launcher infrastructure, rationalize multiple disparate EDI systems, and maximize previous investments in packaged applications and enterprise information systems. IBM Transformation Extender Advanced is the next evolution of the IBM Universal Transformation strategy, providing a modular and more comprehensive solution for transforming documents based on industry standards.

IBM Transformation Extender Advanced gives insurance providers and payer organization, clearinghouses, other processors, as well as healthcare providers, a solution to accelerate compliance with the Affordable Care Act (ACA) mandates and HIPAA standards. It provides an infrastructure that offers these benefits:

- Helps enable compliance with government and industry mandates

- Controls administrative costs and streamlines business processes

- Facilitates accuracy and timeliness of information

- Adapts to new technologies as they emerge and integrates with multiple systems

- Enables validation and transformation of healthcare exchange formats into the application specific formats required by internal business systems

Solution architecture

IBM Transformation Extender Advanced is developed based on plug and play architecture. The Java API allows the product to be integrated with multiple technologies. The product is supported on IBM Integration Bus and Transformation Extender ready to use.

IBM Transformation Extender Advanced provides support for debulking, validating, acknowledgement, data mapping, enrichment, partner management, encoding and versioning of artifacts. A web interface is provided that allows checking in maps, schemas, and developing partner specific envelopes and code lists.

A default derby database is provided as part of the product to store envelope configurations, maps, and so on. The customer can configure other databases such as IBM DB2® and Oracle. IBM Transformation Extender Design Studio and Sterling Map Editor have a comprehensive set of capabilities to develop and test maps for IBM Transformation Extender Advanced. IBM Transformation Extender Advanced for Healthcare Solution is supported on all Enterprise platforms and provides the product capabilities shown in Figure 2.
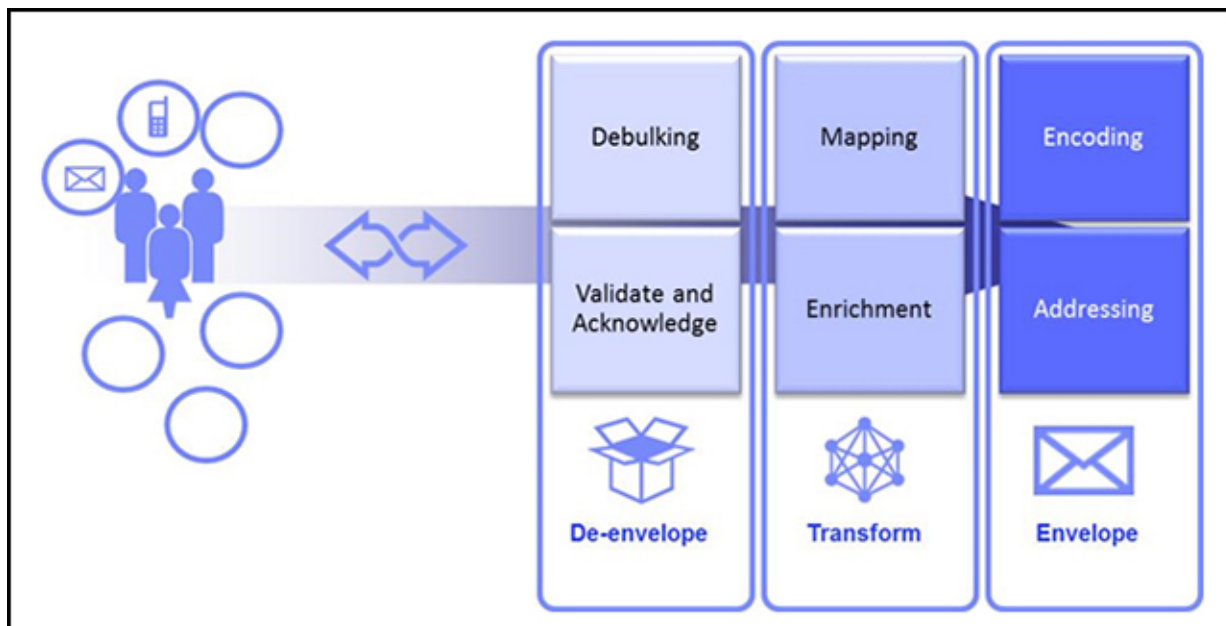

Figure 2. Product capabilities

The healthcare solution has the following core components:

- IBM Transformation Extender Advanced
- IBM Transformation Extender Pack for Healthcare

The base component, IBM Integration Bus or IBM Transformation Extender has these components:

- IBM Transformation Extender for Integration Servers or Transformation Extender Command Server or Transformation Extender for Application Programming

- Envelope, De-Envelope, and Transformation nodes for IBM Integration Bus

Integration

IBM Transformation Extender Advanced seamlessly integrates with IBM Integration Bus and IBM Transformation Extender. For integration with IBM Transformation Extender, the user needs to install IBM Transformation Extender Advanced and IBM Transformation Extender Healthcare Pack. The user should be able to configure IBM Transformation Extender Advanced adapter to invoke De-Envelope, Transform, and Envelope functions. A Response schema (`response.xsd`) is provided in the IBM Transformation Extender root install directory. The schema represents the response received from the IBM Transformation Extender Advanced Adapter. It has information about Status, Process Parameters, Documents, Correlations, and more.

For IBM Integration Bus, the IBM Transformation Extender Advanced core install will deploy the artifacts to be integrated with IBM Integration Bus Toolkit and the runtime environment. Three nodes show up in the IBM Integration Bus Toolkit (De-Envelope, Envelope, and Transform). A script file installed in the IBM Integration Bus MQSI profiles directory to integrate IBM Transformation Extender Advanced runtime environment with IBM Integration Bus. IBM Transformation Extender Advanced Patterns are also installed for the IBM Integration Bus users to jump start the IBM Transformation Extender Advanced flow development. ESQL can be used to access Status, Process Parameters, Documents, and Correlations information generated from IBM Transformation Extender Advanced. The information is stored in the IBM Integration Bus Local Environment.

Figure 3 shows the general flow for IBM Transformation Extender Advanced.
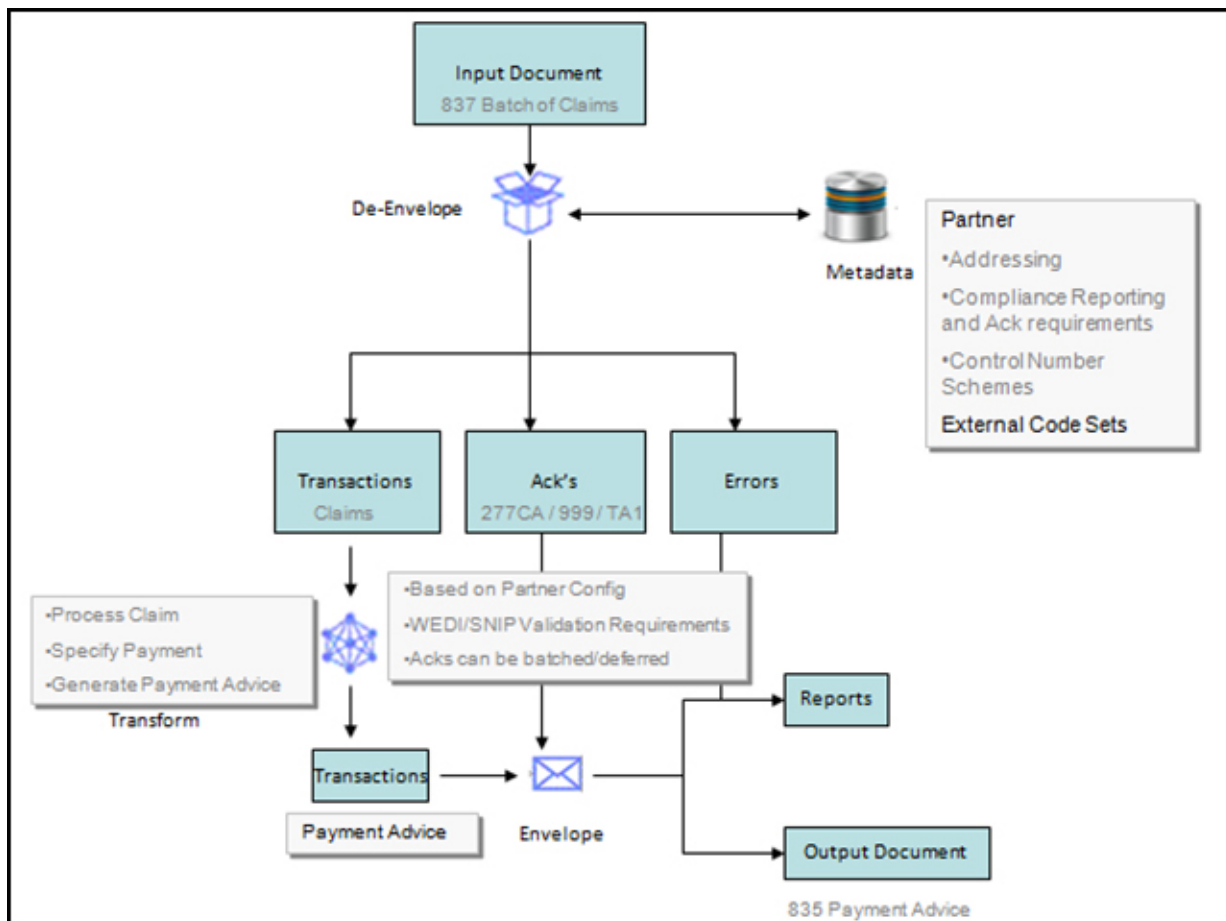

Figure 3. IBM Transformation Extender Advanced flow diagram

Supported platforms

For more information, see "System requirements" at the following web page:
http://www.ibm.com/software/products/en/transformation-extender-advanced

Ordering information

Ordering information is shown in Table 1.

Table 1. Ordering part numbers and feature codes

Program name	PID number	Charge unit description
IBM Transformation Extender	5724-Q23	
IBM Transformation Extender Advanced	5724-Q23	
IBM Transformation Extender Pack for Healthcare	5724-T77	

Related information

For more information, visit the IBM Standards Processing Engine web page:
http://www.ibm.com/software/products/en/transformation-extender-advanced

Notices

This information was developed for products and services offered in the US. This material might be available from IBM in other languages. However, you may be required to own a copy of the product or product version in that language in order to access it.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing, IBM Corporation, North Castle Drive, MD-NC119, Armonk, NY 10504-1785, US

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some jurisdictions do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM websites are provided for convenience only and do not in any manner serve as an endorsement of those websites. The materials at those websites are not part of the materials for this IBM product and use of those websites is at your own risk.

IBM may use or distribute any of the information you provide in any way it believes appropriate without incurring any obligation to you.

The performance data and client examples cited are presented for illustrative purposes only. Actual performance results may vary depending on specific configurations and operating conditions.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to actual people or business enterprises is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

This document was created or updated on August 10, 2016.

Send us your comments in one of the following ways:
- Use the online **Contact us** review form found at:
  ibm.com/redbooks
- Send your comments in an e-mail to:
  redbooks@us.ibm.com
- Mail your comments to:
  IBM Corporation, International Technical Support Organization
  Dept. HYTD Mail Station P099
  2455 South Road
  Poughkeepsie, NY 12601-5400 U.S.A.

This document is available online at http://www.ibm.com/redbooks/abstracts/tips1179.html .

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. These and other IBM trademarked terms are marked on their first occurrence in this information with the appropriate symbol (® or ™), indicating US registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at http://www.ibm.com/legal/copytrade.shtml

The following terms are trademarks of the International Business Machines Corporation in the United States, other countries, or both:

DB2®
IBM®
Redbooks®
Redbooks (logo)®
WebSphere®

The following terms are trademarks of other companies:

Java, and all Java-based trademarks and logos are trademarks or registered trademarks of Oracle and/or its affiliates.

Other company, product, or service names may be trademarks or service marks of others.