Healthcare Interoperability using SOA

INTRODUCTION

With advent of technology, healthcare organizations today are comprised of a number of individual systems operating in silos with minimal interaction among them. Due to the lack of integration solutions, organizations end up developing custom solution for each business scenario which leads to "difficult to manage" and costly services to patients. According to one recent gartner report, by 2018, more than 50% of cost of implementing large systems will be spent on integration. For optimum quality services to patients, it is necessary that the different systems interface with each other and are able to exchange information. By developing solutions based on service oriented architecture, this gap can be bridged.

Vitrana helps in implementing SOA solutions, enabling healthcare organizations to share information across payer, care and provider systems.

PROBLEM STATEMENT

Organizations need to exchange data, both internally and with external systems. The semantic and syntactic meaning of data should remain the same when it moves from one system to another. A scenario is as follows:

A healthcare organization providing services to patients, requires exchange of patient, claims, payments and eligibility data between provider and insurance departments. This enables in understanding the eligibility and benefits of a patient, prior treatments conducted, helping them reduce unnecessary and redundant treatments.

SOLUTION

The process of enabling interoperability of data between disconnected systems is depicted in below diagram:
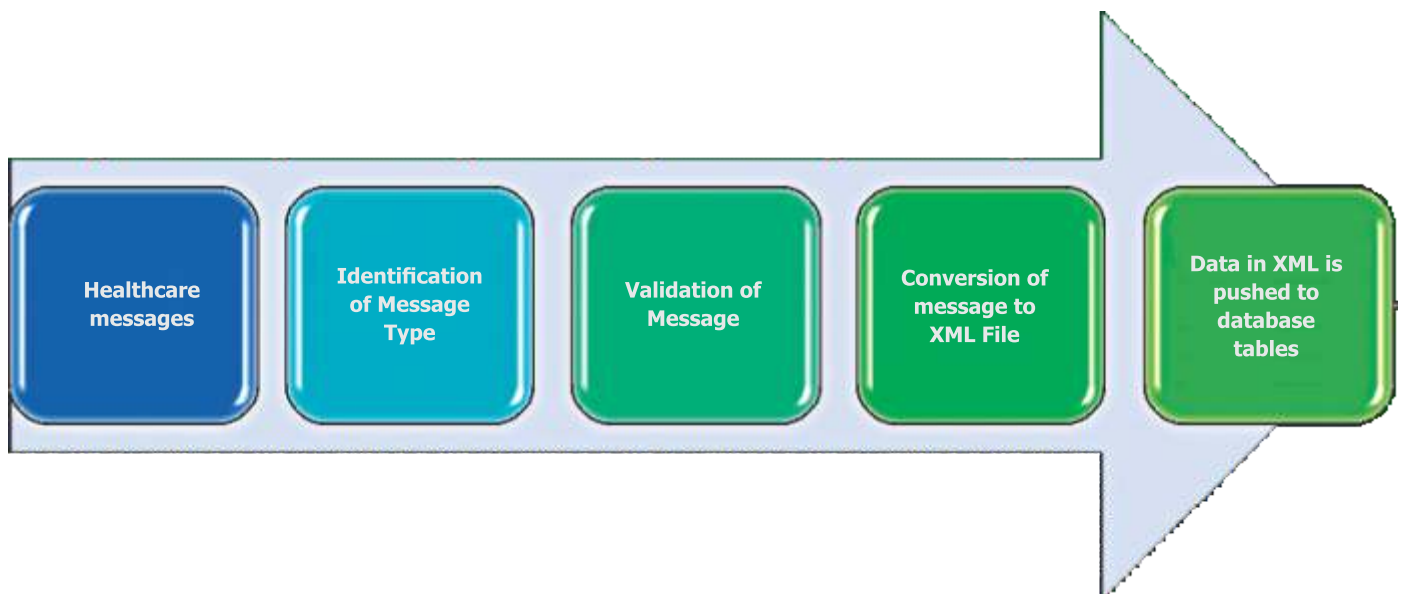
A brief outline of the above process is:

1. Healthcare messages: information exchange between the systems is based on standards such as HL7, EDIX12, ICD, etc. The first step is to receive these messages from the source systems.

2. Identification of messages: it is based on the type of message received e.g.: a HL7 message can be of multiple types such as patient registration, patient discharge or encounter. Based on the type of message the semantic and syntactic meaning of data will change. Thus making sure that we identify the message correctly is of prime importance.

3. Validation: there is an identified format for each type of message. Validation rules are configured for each message type. This ensures the correct acceptance and rejections of these messages.

4. Conversion to XML: based on the format of the message, the data elements contained in the message are identified. A normalized structure is derived from the message and it is converted into xml file.

5. Pushing XML to database: standard procedures are used to push xml information into structured database tables
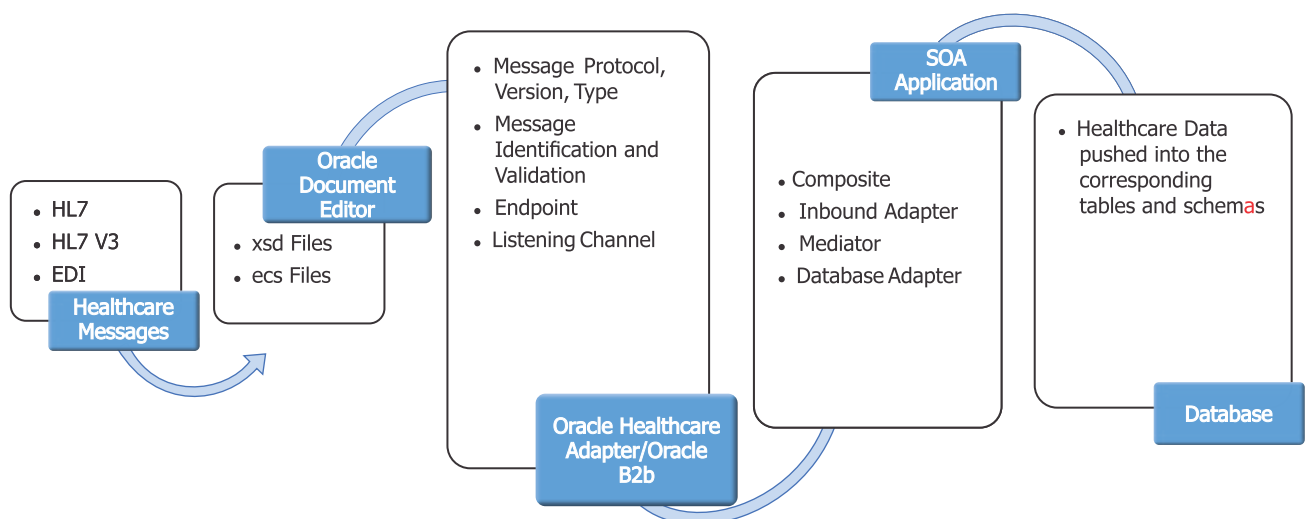
SUMMARY

Healthcare domain is undergoing through a data-driven massive transformation phase. To comply with latest industry developments such fee for performance care models, accountable care, information exchange platforms etc., the adoption of standards-based service oriented architecture across a healthcare organization has become a necessity.

Vitrana has deep industry experience to help organizations in adopting these technologies in accordance with standards and specifications set forth by federal and regulatory agencies.

Please contact us by email (sales@vitrana.com) or phone (+91 120 463 8700) to understand more about how Vitrana™ can help your organization come up with PLS configuration strategy that fits your needs.