

Semantic B2B Integration

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ABSTRACT

The tutorial “Semantic B2B Integration” will give an introduction to the field of business-to-business (B2B) integration from a technical viewpoint with the focus on semantic integration aspects. The set of B2B integration concepts is introduced as well as their implementation in form of a technical semantic B2B integration architecture. A mix of examples is taken illustrating the problems that need to be solved in semantic B2B integration projects. The tutorial enables the audience to identify semantic B2B integration problems as well as to determine the benefits and deficiencies of various technical integration architecture approaches or B2B integration technologies.

1. INTRODUCTION

Companies that plan to exchange business data electronically over a network like the Internet [2] or value-added networks (VANs) [4] have to build or deploy a semantic B2B integration solution. The in the business data exchange involved companies are called trading partners. They have to agree on the content of the data to be exchanged, the direction as well as the B2B protocol (like RosettaNet [3] or EDI [1]) that implements the exchange of the identified documents. In addition, the trading partners have to agree on the meaning of the documents exchanged so that the exchange is meaningful to their businesses. For example, if a purchase order is exchanged the expectation is that the purchased product or service is delivered at a certain time. The implementation of the meaning involves back end application systems like enterprise resource planning (ERP) systems. Consequently the electronic exchange of business data cannot be seen in isolation from a network perspective but has to be seen in the context of back end system integration. The semantic integration concepts as well as the B2B integration architecture has to cover the data exchange as well as their extraction from or insertion into the back end application systems.

2. SEMANTIC INTEGRATION CONCEPTS

The following list high-lights the most important semantic integration concepts. The tutorial will discuss the complete list.

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ACM SIGMOD 2001, May 21-24, Santa Barbara, California, USA
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- **Trading partner.** Messages are exchanged between trading partners. Each trading partner is uniquely identified.
- **B2B protocol.** Trading partners have to agree on the B2B protocol used that consistently and reliably exchanges messages.
- **Network.** Different types of networks are available to trading partners for exchanging documents like the Internet and VANs.
- **Transformation.** Transformations ensure semantic equivalence between business data in messages over networks and their back end application system equivalent implementation.
- **Common View.** A common view is the semantic unification of the same business data independent of the format in the different B2B protocols or back end applications.
- **Application Adapter.** An application adapter connects to a back end application extracting and inserting business data.
- **Workflow Management.** Workflow management implements the definition of processes extracting data from back end systems and sending them over a B2B protocol (and vice versa).
- **Business Event.** A business event is the occurrence of a state change indicating that business data are ready to be exchanged with trading partners over networks.

3. B2B INTEGRATION ARCHITECTURE

Figure 1 depicts the main components that constitute a B2B integration architecture.

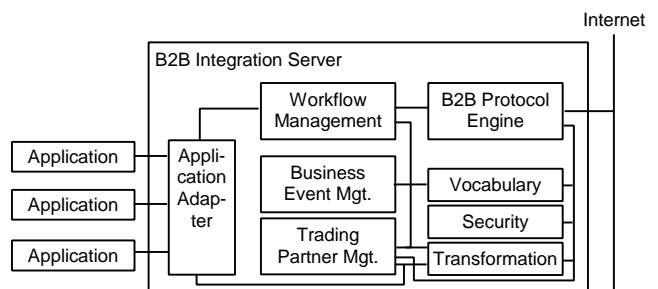


Figure 1: B2B Integration Architecture

4. REFERENCES

- [1] EDI. www.x12.org
- [2] Internet. webopedia.internet.com/TERM/I/Internet.html
- [3] RosettaNet. www.rosettanel.org
- [4] VAN. www.edi-info-center.com/html/vans.html