Web Integration Solutions

Integrate shipping, tracking and rating with business-productivity and supply chain applications

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Integrating shipping, tracking and rating capabilities with business-productivity, electronic commerce and supply-chain applications.

Introduction

Information you will find in this report

This report overviews the tools available today to software developers who want to integrate FedEx® services into seamless experiences for the users of their custom or packaged software applications. Included are several real-world examples of how Web Integration Solutions can be used effectively, followed by an overview of the technology. Next, the steps involved in obtaining, integrating, and testing the technology are reviewed. This briefing concludes with information about FedEx and its ongoing commitment to exploit technologies wherever possible to provide increasingly efficient, reliable and cost-effective automation solutions for its customers.

Solutions overview

Web Integration Solutions allow you to integrate the power of Internet-enabled FedEx services into your own software applications. Now, product managers and software engineers can incorporate the creation of shipping labels, real-time retrieval of package tracking information, or rate quotes directly into their own real-world applications.

The Web Integration Solutions are suitable for many kinds of software developers (including systems integrators, consultants, corporate in-house staff and independent software vendors), creating diverse applications in the following areas:

- Supply-chain management
- Web-based catalogs
- Logistics
- Office productivity (document processing)
- Sales force automation
- Enterprise resource planning suites
- Other corporate intranet and extranet applications

The main application of supply and value chains is to provide information to customers. The most common gains from chains are faster order filling and delivery, improved customer service, faster cycle times, and lower order-processing costs, all cited by 60% or more of the IT managers surveyed. 

Business organizations, ranging from factories to offices, strive to provide ever-more efficient delivery of their products and time-sensitive documents. Their challenges include:

- Control of the shipping process
- Ease of use
- Cost containment
- Data integration
- Reliability

In response to these challenges, FedEx continues its leadership in the automation of shipping applications. Throughout its history, FedEx has introduced an innovative variety of software and hardware systems making it easier and more efficient for its customers to ship and track their packages. These systems have evolved from desktop computer systems to Internet-based shipping systems. Now, FedEx is offering Web Integration Solutions a comprehensive set of software tools with a range of Internet-enabled services to conveniently and seamlessly integrate automated shipping and tracking within your own software applications.
Shipping and Tracking in an Increasingly E-Business World

A supply chain runs the risk of breaking down if data must be re-keyed at any step along the way. Web Integration Solutions can help improve productivity and reduce costs and errors by enhancing applications with real-time interactivity. This free software makes these benefits available to organizations and applications of virtually any size.

*Business-to-business e-commerce is nothing new. EDI (electronic Data Interchange) has been around for years, but it’s expensive and is beyond the scope of all but the largest companies. With the Web, e-commerce is now viable for companies of any size, not just corporate powerhouses with deep pockets and vast resources. The Web opens new opportunities for companies to engage in commerce with their suppliers, customers, and business partners.*

As businesses of every size (from home-based businesses through the largest multinational enterprises) strive for incremental competitive advantage, they increasingly exploit technology as a means to differentiate their businesses, to work faster and better with reduced costs and increased customer (or user) satisfaction. Simple implementation of Web Integration Solutions helps organizations complement their competencies and strategic business advantages with the global transportation network and proven, reliable delivery of FedEx.

*Online Business-to-Business (B2B) deals comprised 90% of all online sales in 1999, accounting for a remarkably large share of overall e-commerce activity. One of the key factors behind the strong e-commerce sales figures in the B2B sector is the long-standing use of proprietary networks, such as the Electronic Data Interchange (EDI).*

Healthy growth in e-commerce is projected in the years to come, especially in the B2B sector. Projected growth estimates vary based on many factors. Two primary variables are the state of the global economy and the rate at which businesses adopt and implement e-commerce technology.

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2 Ibid
3 PlanetIT
4 U.S. Department of Commerce, 2001
5 eMarketer, Inc., 2001
Scenarios of Use

The functionality provided in Web Integration Solutions is suitable for a wide range of software applications. This section outlines a few of the typical examples being developed or deployed today. Product managers and software developers are invited to visit the Simplify My Shipping section at fedex.com to explore how FedEx technologies can be leveraged in your business and products.

Generate labels automatically from correspondence

**OFFICE PRODUCTIVITY.** A sales professional has an urgent proposal to deliver to her largest client. After preparing the cover letter using her contact management software, she simply presses a button on that application’s toolbar and a FedEx Priority Overnight® plain paper label is produced for printing on her laser printer. In addition, she directs the software to automatically schedule a FedEx courier pickup. She can relax, knowing that her shipment transaction has been completed and her proposal will arrive on time!

Ship and track package shipments without leaving a vendor’s website

**WEB-BASED CATALOG STORE.** A consumer has purchased products over the Internet from his favorite web-based catalog. The merchant can automatically prepare a FedEx Home Delivery thermal shipping label at the point of shipment. The customer can then instantly track the shipment status directly through the merchant’s web page. All accomplished without re-keying the tracking number or leaving the vendor’s website.

Increase productivity and reduce errors in the warehouse

**MANUFACTURING LINE.** A manufacturing company takes daily advantage of their enhanced order fulfillment system. Using their integrated order-entry and manufacturing information systems, printers in the warehouse simultaneously generate packing lists and corresponding FedEx 2Day® shipment labels, saving time and reducing errors in the fulfillment process. FedEx shipment labels do not need to be created on isolated systems, thereby increasing productivity; reducing costs by minimizing errors such as mismatching shipments and labels.
Technical Overview

FedEx Ship Manager API

An application programming interface (API) is a well-documented method by which one computer program passes data to another program, sometimes executing on another computer connected by a network.

Web Integration Solutions is a powerful set of tools that benefits FedEx customers with specific shipping and tracking requirements, including sales, order entry, fulfillment, customer service, and other business-related activities. The interfaces can be used for expediting and enhancing documents and proposals, electronic catalogs, office automation and other supply chain applications that may be used independently or as part of a network-based logistics or enterprise application suite.

Features included in Web Integration Solutions:

- Registration and authentication for the enterprise
- Global shipping
- FedEx Express, Ground, and Home Delivery
- Preparation of shipping labels/air waybills for laser or thermal printing
- United States, Canadian and International courier dispatch request
- Courtesy rate quotes
- COD, dangerous goods and dry ice shipment support
- Shipment cancellation
- E-mail inbound shipment notification to recipient and/or others
- Reporting of shipment tracking number, ship date, and destination country

FedEx Ship Manager API includes functions automating the shipping and tracking of packages in the FedEx system, printing required shipment labels and documents, and generating Signature Proof of Delivery documents. These functions can be implemented into applications operating on Windows 95/98/NT/2000/ME/XP, Sun Solaris v2.6 and greater, as well as Linux Red Hat 6.2 and greater platforms, using a variety of programming languages, including:

- C and C++
- Java
- Visual Basic
- VBScript and JavaScript

FedEx Ship Manager Direct

The Direct solution allows a customer to build their own API to connect directly with FedEx back end systems. A working knowledge of HTTPS, data encryption, and Secure Socket layering is required. The Direct solution includes all features available in the FedEx Ship Manager API. The solution allows customers to use any platform for development, not just those supported by the FedEx Ship Manager API.

XML Tools

When developing FedEx Ship Manager API or FedEx Ship Manager Direct you may now do so in XML. XML Tools were developed to offer customers an option to the traditional, proprietary method of development called CTS. XML offers a more standard programming language that is often used in many other internal applications. XML for tracking is now available with shipping and rating coming in July 2003.
Web Integration Solutions® Implementation Process

1. Getting started
   - Visit www.fedex.com/solutions/wis/index.html, and click on FedEx Ship Manager API or FedEx Ship Manager Direct
   - Click to download, and complete the required registration information
   - Read and accept the appropriate license agreement
     (Note, the licensing agreement will correspond to your intended use of the product as specified during registration)
   - Install the software unless you choose Direct where there is no software download
   - Review the appropriate documentation

2. Integrating with your application
   - Integrate FedEx shipping and/or tracking with your own customized application

3. Register for Testing
   - Send an e-mail to websupport@fedex.com to setup your account for testing

4. Testing and application certification
   - Contact FedEx to begin testing. (Specific instructions vary by usage, see the Web Integration Solutions Implementation Overview at http://www.fedex.com/us/solutions/wis/index.html/
   - Perform online testing with FedEx servers for simulated shipments
   - Once testing is completed, send sample labels and operating scenario to FedEx to receive certification

5. Deployment
   - Distribute your application to your corporate (in-house) users
   - Distribute the license to your customers for live package shipping and tracking
The Tools

The functionality supported by Web Integration Solutions is contained in three separate components:

**FedExAPIClient Library.** Contains a single function to process your transactions through the FedEx servers.

**FedExAPIParser Library.** Offers functions designed to assist with building a properly formatted transaction. This includes the ability to insert specific data fields into the outgoing transaction, and extract desired data fields from the reply transaction.

**FedExAPILabeltexts Library.** Holds functions that accept the submit and reply transactions in order to extract and decode the FedEx label and Signature Proof of Delivery buffers, and prepare them for browser display, printing, or saving to a file.

The Windows platform versions of these libraries contain both a regular C-style interface as well as a COM interface. Both interfaces are housed in a Windows.dll file. The Solaris and Linux versions contain static (.a) and shared (.so) libraries of each component.
Conclusions

Summary

Product managers and software engineers continuously strive to make their applications easier to use and more effective. Applications that embrace the explosion of e-commerce on the Internet have the chance to gain wide acceptance if they make the user’s experience more productive, more reliable and even enjoyable. Supported by the worldwide leader in the automation of express and ground shipping, Web Integration Solutions facilitates the seamless integration of FedEx shipping and tracking into supply chain, document management, and other e-commerce applications.

Many vendors provide e-commerce toolkits that can be used in conjunction with Web application development environments and servers. The result is a further simplification of the development process, eliminating the need to build the commerce transaction portion of the application from scratch.

About FedEx

FedEx Corporation connects areas that generate 90% of the world’s gross domestic product in 24 to 48 hours with door-to-door, customer-cleared service and a money-back guarantee. The company’s unmatched air route authorities and infrastructure make it the world’s largest express transportation company, providing fast, reliable and time-definite transportation of more that 3.3 million items to 210 countries each working day. FedEx employs more than 145,000 employees and has more than 44,400 drop-off locations, 663 aircraft and approximately 44,500 vehicles in its integrated global network. The company maintains electronic connections with more than a million customers via FedEx Ship Manager Server® and FedEx Ship Manager at fedex.com.

With annual revenues of $20 billion, FedEx Corp. is the premier global provider of transportation, e-commerce and supply chain management services. The company offers integrated business solutions through a network of subsidiaries operating independently, including FedEx Express, the world’s largest express transportation company; FedEx Ground, North America’s second largest provider of small-package ground delivery service; FedEx Freight, a leading provider of regional less-than-truckload freight services; and FedEx Trade Networks, a provider of customs brokerage, consulting, information technology and trade facilitation solutions.

For more information

Learn more about Web Integration Solutions and other automation solutions available at www.fedex.com/globaldeveloper/shipapi