Data Without Boundaries ™

Order Entry and Payment Processing

Order entry and payment processing systems have been greatly simplified and streamlined thanks to the increased use of internet-based payment options. Many people have embraced the convenience and simplicity of these technologies, but there is still a sizable number of customers who do not trust Internet transactions with their credit card information, and choose to use checks, money orders, etc. While processing online payments is a mostly automated and hassle-free task, when companies receive payments by mail, attached to printed forms, there is a bottleneck in the processing system. Inevitably, human resources must be dedicated to manually reentering form data into the online processing system, and processing the payment. In addition to training employees to run the manual order entry and payment system, there is the ongoing problem of errors resulting from manual entry.

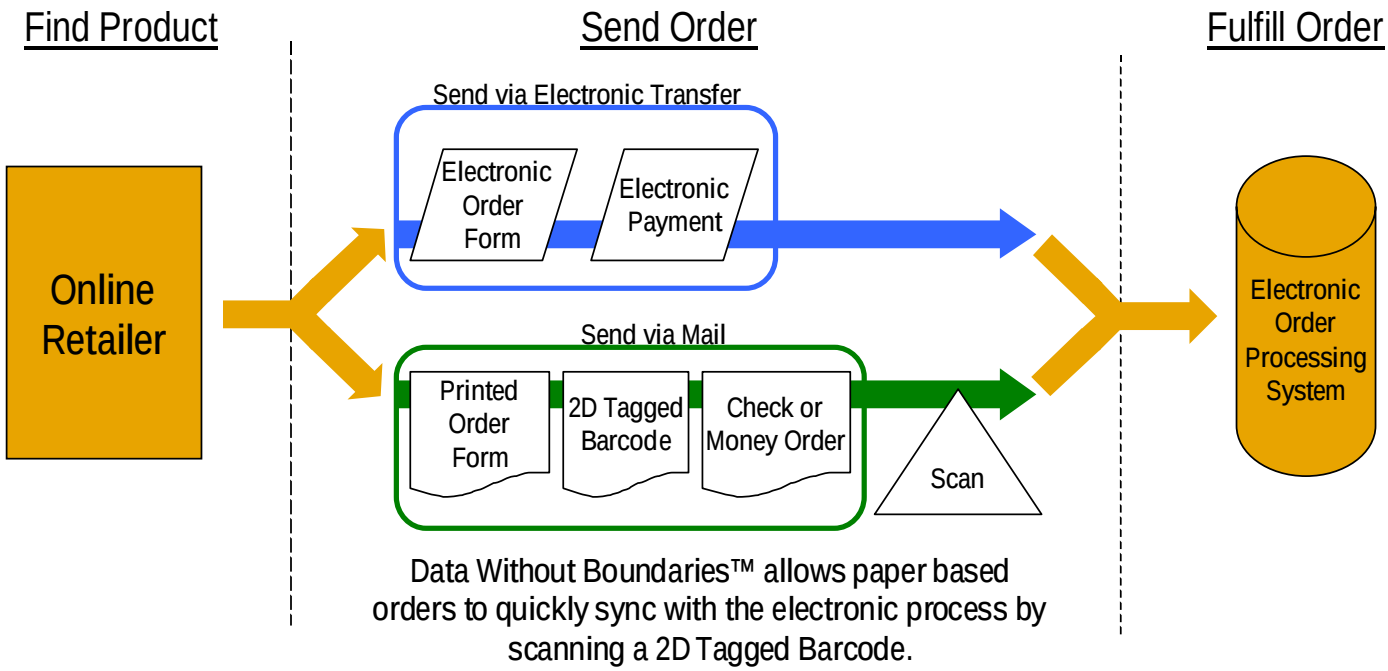
Tripletail Ventures, Inc., through its patented *Data Without Boundaries*™ (DWB) technology, can coordinate the highly automated electronic and paper payment systems into one. Accuracy, efficiency, and security will result from this powerful and proven technology adaptation. *Data Without Boundaries*™ is recognized as an innovative breakthrough and is protected under US Patent numbers 6,764,009, 7,070,103, 7,118,040 and other pending patents.

The following is a scenario that shows how *Data Without Boundaries*™ can streamline paper-based payment processing.

1. Customer finds a product to buy online.
2. If uncomfortable with sending personal data over the Internet, the customer decides to print out an order form that he populated online, attach a personal check, and send the order in through the mail. (This also applies to a situation where access to a credit card is not present. Payment via an alternative method such as a personal check, business check, or money order.)
3. Tripletail's patented *Data Without Boundaries*™ solution organizes the data contained in the form with XML tagging and encodes it in a 2D barcode that is printed on the order form. This barcode generates itself as the customer is filling in the form. If needed, multiple barcodes can be employed depending on the file size of the data.
4. XYZ, Inc. receives the order and scans the 2D barcode to input the form data accurately, securely, and efficiently into their proprietary system. The payment is entered into the system using a check scanning device.
5. The paper-based order continues through the fulfillment process like any other electronic request. There is no manual reentry to add unnecessary costs and no inaccurate orders resulting from data entry errors.

Although the bulk of online orders are paid by electronic means, there are still people who can't or won't send payment information over the Internet. Some do not have credit cards, while others do not trust that their credit card information is safe on the Internet. Although there are more online payment options and people increasingly are comfortable with online transactions, it is important that companies continue to support all payment types as a courtesy to their customers. *Data Without Boundaries*™ makes it more cost-effective and efficient to receive and fulfill paper-based order forms filled out online and accompanied by manual payments such as a check or money order. This scenario also could apply if a customer fills out an order or registration document online and needs to apply a real signature ("wet" signature) or wants to personally deliver the order to a place of business. Again, upon receipt, the printed barcode enabled form can be easily scanned and entered into an order entry system; avoiding costs and errors.

The diagram below illustrates how *Data Without Boundaries*™ improves the process flow for paper-based order forms. Without DWB, a bottleneck occurs either when the order is fulfilled completely by hand, or when the order needs to be manually entered into the electronic order-fulfillment system.



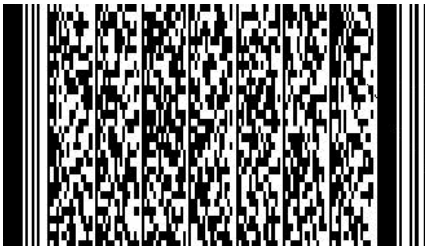
Utilizing *Data Without Boundaries*™ to enhance the paper-based order form process is an important and focused application for a technology that has wide ranging possibilities. The following further explains how the underlying technology for DWB functions.

Barcodes

Barcodes are a means of encoding data for input into a computer system. Barcodes encode alpha-numeric, keyboard, or binary information in a machine-readable format. When the barcode is scanned, the data contained in the barcode is decoded, and the

device attached to the scanner interprets the scan as standard computer keyboard keystrokes. A simple 1D product barcode contains up to 30 text characters (letters and numbers).

1-dimensional barcode


2-dimensional barcode

2D barcodes, which are essentially stacked barcodes, can contain significantly more information than conventional one-dimensional barcodes. Conventional barcodes get wider as more data is encoded. 2D barcodes make use of the vertical dimension to pack in more data. Two-dimensional code systems have become more feasible with the increased use of moving beam laser scanners, Charge Coupled Device (CCD) scanners, and Linear Imaging scanners. The 2D barcode stores data along two dimensions and is therefore capable of containing much more information than the 1D barcode (seen on many food products) or the magnetic stripe (seen on credit cards and some drivers' licenses). Depending on the type of 2D barcode protocol used, it can hold from 2,000 up to 7,000 characters, or enough to encode the text of a form. As an example, this particular paragraph contains roughly 1,000 characters. 2D barcodes are used for many applications. Currently 39 states include a 2D barcode on the backside of state issued drivers' licenses. Also, 2D barcodes are a highly accurate means of capturing and entering data because they include built-in error correction that eliminates false positive decodes.

Data Tags

Data tags, enclosed in brackets, are used by software programs to identify the data between them. In this example:

<age>30</age>

the number 30 is the data, and <age> is the tag. Data tags are the key to data transfer because they instruct the receiving data system what the data is, and what to do with the data. For example,

<firstName>Melinda</firstName>
<middleInitial>B.</middleInitial>
<lastName>Jones</lastName>
<address1>3405 Northfield Ct.</address1>
<address2>Apt. 312B</address2>
<city>Chicago</city>
<state>IL</state>

<zipCode>42050</zipCode>

Above is not only the customer's full name and address, but also tags are field names showing the receiving data system where each piece of information needs to be stored.

XML

XML, or eXtensible Markup Language, is a widely used open format EDI system for defining data formats. XML provides a very rich system to define complex documents and data structures such as invoices, molecular data, news feeds, glossaries, inventory descriptions, real estate properties, etc. As long as a programmer has the XML definition for a collection of data (often called a "schema") then they can easily create a program to reliably process any data formatted according to those rules. Self-describing data is the key to XML's rapid and widespread acceptance. The ability to carry metadata (tags) with data is particularly important in integration that involves sharing data within a heterogeneous environment. Here there isn't even a basic common element, such as data types. This "data-typing" information (XML Schemas) allows data to be routed efficiently and processed intelligently. This is a radically different approach to solving the integration problem. Before XML, integration was all about connecting individual systems to each other, in most cases using a proprietary mechanism. Another fundamental reason XML is important (and which builds on the fact that it is self describing) is that by using XML, programmers are able to facilitate a document-centric, loosely coupled model for integration, instead of the more tedious Remote-Program Interface/Application Programming Interface-centric (RPC/API) model. The document-centric loosely coupled model using XML resembles in many ways how enterprises have functioned for years using a paper-based (document) model.

Conclusion

Data Without Boundaries™ can be implemented with an existing order processing system to improve the efficiency of paper-based orders. DWB is considered to be an add-on technology; meaning there is no need to replace existing systems or processes. Tripletail Ventures, Inc. and its accredited integrators are able to design a custom plan to optimize the marriage of DWB with a current system.

For More Information

Contact Paul Staman at Tripletail Ventures, Inc., (319-622-5178), or e-mail info@tripletailventures.com.