Web Enabled AIDC Strategies

Ecommerce has widened its scope and developed into e-business as its potential to improve efficiency becomes apparent. The vast influence of the Internet has infiltrated the corporation and its effects on communication and information sharing can be felt throughout every aspect of the enterprise as it spreads through the supply chain.

Having traveled its course over the past two decades, Automatic Identification and Data Capture (AIDC) has become a standard component in IT. As the blending of AIDC with IT continues, enterprises must now face the challenge of exploiting the capabilities of the worldwide web to optimize productivity. IT decision makers must be far sighted and creative in determining long term strategies for critical decision-making.

Type of AIDC Application

The first consideration in planning for web enabled AIDC is the determination of the type of application. AIDC applications can be classified into two categories; active and passive.

Passive applications use AIDC techniques strictly for input transaction handling, such as automating data entry via bar code scanning, magnetic strips or voice actuated peripherals. Active applications use AIDC input transactions to generate output by triggering active computing and information exchange processes. For example, an active retail system uses data captured with magnetic stripe readers to check and update inventory, look up prices and discounts, print bar coded pick tickets and customer invoices. An active material handling system tracks production through bar coded travelers and prints bar coded labels in real time before sending material to the next production cell.

Active applications benefit from web based systems that connect remote sites, suppliers and customers with central repositories of data, These active applications have historically been most prevalent in manufacturing, however, the growth of Enterprise Resource Planning (ERP) has opened up a new generation of applications in the retail and service industries. Nevertheless, the prime application areas for Web enabled AIDC is still logistics and distribution, order/inquiry management and tracking and inventory.

Logistics & Distribution

The rich connectivity infrastructure of the Internet/Intranet provides a natural extension for the deployment of applications in logistics and distribution. These applications take Intranet based solutions and connect them to the outside world, thereby enhancing supply chain topology and management. Data capture, reporting and verification are all addressed more efficiently by this technology.

The advantages of web enabled AIDC is evident in systems where raw materials received from a manufacturer must be repackaged and relabeled. In this case, bar coded paperwork must be generated to ensure the success of subsequent distributions.

Order/ Inquiry Management

There are several areas of order management and inquiry processing that benefit from web connectivity. For example, when a client at a remote location completes a transaction, it

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generates paper work at the supplier's site. That paperwork is processed and scanned by the supplier, and that in turn triggers the system to issue a return receipt for the client at the remote site.

Another example involves on-line registration. In this scenario the applicant enters data from a remote site. The system processes the information, adds it to the database and responds to the applicant by sending a bar-coded copy of the application for the applicant to mail to the principal. The scanning of the bar code on the application when it arrives at the principal's location signifies the authenticity of the applicant's request for registration.

Reservations and ticketing are other application areas where traditional methods of order processing are enhanced by applying web and AIDC technologies. Order confirmation and verification are accomplished by the creation of on-demand acknowledgements and printing receipts with bar code identifiers for proof of authenticity.

Tracking

Parcels, documents and returned goods tracking are yet another excellent area for Web enabled AIDC implementation. A document management system generates printed documents via the Web using bar coded identifiers.

Another cutting edge application is the processing of OSHA and DOT regulated returned goods. In this situation, returns must be authorized and clearly identified by a bar-coded label that is affixed upon the return shipment. In this scenario, the authorization and information regarding the returned good is obtained via an Internet connection and a just-in-time bar coded label. Paper work is generated via the bar code enabled web application that may be running from within any commercial browser.

Inventory

Significant opportunities also exist in the tracking of finished goods inventories, fixed and mobile assets via the web. In all cases, web enabled browser based applications for both scanning and printing automatic identification output is a must. A recent comparison between a global web enabled asset-tracking system and another one using a more traditional method revealed a substantial improvement in efficiency, accuracy and time management for tracking, identifying and locating assets by the web enabled system.

The advent of thin client, network PCs and web centric applications allow more internal enterprise applications in business and manufacturing to migrate to an intranet browser-based computing strategy. The infrastructure of these networks provides the framework for seamless integration of internal computing and information exchange with the world of information outside the enterprise.

The Future of Web enabled AIDC

Compounded with the rich connectivity offerings of the web, active web enabled AIDC applications are state-of-the-art solutions that are gaining momentum in every facet of today's business. The range and sophistication of AIDC Internet/Intranet applications is growing at a rapid pace. Currently there are a multitude of methodologies for the design and integration of web enabled AIDC applications. These methodologies include process modeling and rapid application development and deployment tools.

Innovative applications are under development and new ideas are being explored to best utilize the error-free and time saving advantages of AIDC in mission critical Net/Web enabled applications. This development will, no doubt, have an enormous effect on the future of AIDC. IT decision makers must investigate the most efficient methods of exploiting the enormous benefits of web technology when planning long term strategies for active AIDC systems.

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