Minutes of the LMO Vendor Council Meeting
Boca Raton, Florida, February 20-21, 1996

Summary

The seventh meeting of the LMO Vendor Council was hosted by Robert Ellis at Siemens Nixdorf in Boca Raton, Florida, on February 20th and 21st.

Tony Stuart (IBM), the new LMO Vendor Council Chairman, established the agenda for the meeting. The agenda focused on two objectives:

1) Review and approve recent changes to the LMO Standards Specification for mailpiece level tracking.

2) Begin the standardization process for database driven inserting by discussing customer requirements, device capabilities and the LMO environment.

The meeting included detailed vendor presentations that outlined current and future LMO support. The recent changes to the specification were reviewed and approved. There was a lively and worthwhile discussion of database driven inserting.

Attendees

The meeting was attended by twenty representatives from fourteen companies, including Kenneth Bucci, from CIGNA, who supplied valuable customer input. See the updated LMO Vendor Council roster for an attendee list.

Introduction

H. Werner Krause, the president of Siemens Nixdorf Printing Systems, opened the meeting. He welcomed the Vendor Council to Boca Raton and presented a brief overview of his company's history, organization, and product evolution. He stated his company's commitment to Open Systems, the LMO Vendor Council and the standards process. Highlights from Mr. Krause's introduction: revenue growth requires moving beyond IBM compatible printers to Xerox compatibility and PostScript/PCL workgroup printers; partnerships will play an increasingly important role in bringing products to market; Siemens is building a development group in Boca Raton to concentrate on the U.S. market; Print on Demand is not just a printer, its a complete system; full color is too expensive.

1995 in Review

Following general introductions, Tony Stuart presented a review of the LMO Vendor Council's activities in 1995, including the creation of work groups to formalize standards for mailpiece level tracking, job ticket and exceptions.

The Mailpiece Level Tracking Workgroup made significant progress in 1995. They developed new standards that were tested at Tritech, a Merrill Lynch subsidiary, and demonstrated in a multi-vendor environment at Xplor. These standards are the basis for most of the updates to the LMO Standards Specification.

The Job Ticket Workgroup had problems with scope and definition. They felt that there would be value in limiting the scope to database driven inserting, and opening the subject up to the entire Vendor Council for discussion.

The Standard Exceptions Workgroup defined new standard status enumerations. They suggested that the group concentrate on defining an Alert History Table, which is indexed (keyed) by timestamp, using the model that was defined for mailpiece level tracking. This work is still pending.

Company Status Report

Vendor Council Members had the opportunity to summarize their company's support for the LMO, including current implementations and future directions.

Eric Schuyler (Moore), presented an overview of Moore's Process Command Center (PCC), a management system for a variety of devices, including printers, pre- and post- processing devices and inserters. The system gives real time equipment status, tracks documents by bar code, identifies missing and duplicated documents, records information in a database, and produces a variety of reports. It includes a product line status GUI. It is currently installed in two sites where it functions as a standalone system. Future plans include LMO connectivity. Eric mentioned a concern about page level tracking as distinct from document (mailpiece) tracking.

Robert Liu (Delphax), gave a presentation entitled "The Race for Open Systems Printing." This started with background information on how Delphax had grown through acquisition and now has three product lines that evolved independently and do not share common parts, e.g. controllers. The solution to this problem, and multiplatform printing in general, is Delphax VISTA, which provides a multiplatform bridge to the end user. The idea behind VISTA is "any in-any out" printing, i.e. datastream independence. Delphax has introduced reprint based on sequence number using VISTA. Their goal is to provide an interface between VISTA and LMO.

Gene Rozea (Roll Systems Inc.), stated that his company's goal is to improve the instrumentation of pre- and post-processing devices. He said they are seeing RPQ's that specify either LMO or SieDOCS compatibility, but customers are still vague as to the exact meaning of this. He said he is interested in seeing more third party applications that make use of the wealth of information that is captured by, and available on, an LMO system.

Dieter Wiesenbart (microwi electronic), discussed his company's relationship to Bowe, and how microwi produced the LMO interface for BICOS (Bowe Interactive Controlling and Operating System) for the 1994 Xplor demo. He emphasized their commitment to Open Systems, with connectivity to a number of different products, including LMO, SieDOCS, PCCS, Oracle database and other systems.

Don Danner (J&Q Technologies), said a problem with mailroom technology today is that "we have a lot of data and little information." He explained how the J&Q Print Detective speeds up throughput and reduces staff size, and that from a quality perspective, the earlier a problem is detected, the less it costs. The Print Detective, being the first device to see the printed output, can catch print quality problems early. The Print Detective is LMO enabled, and it helps turn data into information.

Skip McCallum (Stralfors International), described his company's recent reorganization, in which Wallace sold its Lasermax division to Stralfors. As a result, Stralfors is moving R&D functions to North America. The Management Control System (MCS) which provides an LMO interface for printer, pre- and post- processing devices, has 34 customers in the U.S. They demo'd a Microsoft Access based system last year at Xplor. Current/near term functions include touch screen, inventory management, enhanced business partner connectivity (J&Q, RSI), and PSF error recovery extended to the end of the postprocessing line.

Robert Ellis (Siemens), presented a detailed overview of SieDOCS. Siemens is taking a building block approach that places them in the role of systems integrator/project manager. They are partnering with INSCI to develop SieDOCS. There are at least five major functional areas to SieDOCS. These include SieTrack, a mailpiece tracking system that uses a bar code scanner in the printer; SieArchive a client/server based archive system that is used for viewing and reprint of mailpieces (based on the INSCI system, which has 500 installations); SieView the client part of SieArchive; SieHelp, a Windows based online help system that includes hypertext and interactive CD video; and SieStock, a system to manage consumables, track costs by device and allocate sufficient stock. They are planning a

comprehensive scheduling facility, which can prioritize jobs for inserters, match jobs to cart numbers, split jobs, and analyze what-if scenarios. SieDocs is 100% compliant with DMI, LMO, ODBC and SQL.

Development Update

Tony Stuart gave a detailed presentation of the latest release of the LMO Systems Manager (Version 1.2.0), which is now available to both customers and vendors. This is the third release of the system. This release offers many new functions, as well as significant improvements in performance and reliability.

In an effort to encourage and facilitate the widespread use and support of open systems mailing automation technology, IBM has made the LMO Systems Manager software available to members of the LMO Vendor Council since July of 1994.

Tony reviewed the LMO Systems Manager architecture. He summarized the role of the Desktop Management Interface (DMI), the Management Information Format (MIF) database, the server based instrumented components (agents), the DB/2 database agent, the high and low level client network interfaces, and the LAN based clients, which consist of Graphical User Interface (GUI's), device interfaces, and host interfaces.

Tony gave a detailed description of the new features in the 1.2.0 release including mailpiece level tracking, which uses the LMO server as a central repository for mailpiece information and works in either a full mailpiece audit trail or exceptions-only mode; reconciliation and reprint which uses the information collected by mailpiece level tracking to perform automatic reconciliation and reprint; the long term history database interface which provides an easy to use method for exporting data for analysis and long term storage; the shop floor monitor which graphically depicts the status of devices on the printing and mailing operations shop floor; RS/6000 (AIX) server support which provides a wide range of performance options; and numerous miscellaneous features, including smart query support, SQL query support, common logging component, extended transport layer (XTL) for network and server restart/recovery, AFCCU direct connect, and Graphical User Interface (GUI) enhancements.

Mailpiece Level Tracking

Tom Ruehle (IBM), handed out copies of his mailpiece level tracking paper, which describes how Tritech, IBM, Pitney Bowes, and RSI implemented mailpiece level tracking at Tritech and demo'd it at Xplor '95. Tom presented an overview of the process.

Generic Data Poster

Paul Mitchell (Pitney Bowes), had requested time on the agenda to discuss the Pitney Bowes Generic Data Poster, a configurable utility that can send any of the information maintained by the Pitney Bowes OMS system to the LMO. Unfortunately, Paul was ill and could not make it to the Vendor Council meeting.

Review of Updates to LMO Standards Specification

Tony Stuart distributed review copies of the updated LMO Standards Specification (Version 1.2). Tony reviewed the changes that have been made to the LMO Standards Specification since last April. The 1.2 version of the specification includes all of the definitions that are required for doing mailpiece level tracking as identified by the LMO Mailpiece Level Tracking Workgroup and the Tritech pilot project. In addition, the LMO instrumented components (agents), which include reconciliation, reprint, watch, history, query, import, export and other utility functions, were added to the standard. This allows customers, major device vendors, and third party software producers to rely on these functions as part of a standards compliant LMO installation.

Tony started the review with a summary of major changes to the specification. These include an update of the cover page and membership list to reflect new members and participating companies; changes to the Product, Mail Job, Printer and Inserter definitions; adding new components and class object definitions for the LMO instrumented components (agents); and additional information in the appendices for DMI Client Network interface and agents. As part of the standards update process, discrepancies in the LMO Standards Specification, DMTF MIF's, and starter set MIF's have been resolved.

Following the summary of major changes, Tony proceeded to discuss each of the areas in detail, concluding with a detailed walkthrough of changes to the Specification that included content, editorial and syntax changes.

During the discussion, the Council identified three areas that would need clarification as a contingency for approval of the new version of the Specification:

Delete Row Attribute in Alert Table - Vendors should have the freedom to implement row management semantics in a way that makes sense for their device and/or controller. The Delete Row attribute should therefore be an optional attribute.

Current Job Group in Inserter - This group duplicates information that is in the Insert Job table. The presence of this duplicated information can lead to inconsistencies. The information should be in one place or the other, but not both. Therefore, either this group or the duplicated attributes in the Insert Job table should be optional, and the responsibility for determining which one is implemented should rest with the systems integrator in charge of the installation.

Query Attribute in Instrumented Component Tables - A DMI "GetAttribute" request to the instrumented component query attribute returns a quote and comma delimited list of keys that match the wildcard keys supplied in the "GetAttribute" request. This information can also be retrieved by repeatedly calling the DMI "GetNextRow" request. Therefore, the query attribute should be an optional attribute for those instrumented components that provide support for wildcard keys.

The following morning, Tony called for a vote of approval for Version 1.0 of the Standards Specification, contingent on clarification of the three areas (as described above). The vote to approve was unanimous.

The LMO Standards Specification will be updated to reflect these changes. This updated version will be referred to as Version 1.2 FINAL. It will be available on the DMTF file server (ftp.dmtf.org) in the mifs/finisher directory.

Database Driven Inserting

In 1995, the LMO Job Ticket workgroup had problems defining the scope of its effort. The definition of "Job Ticket" ranged from the Print on Demand view of "instructions that describe the total processing required to produce an end result" to the database driven inserting view of "materials required to build a mailpiece." Near the end of 1995, the LMO Job Ticket workgroup decided to concentrate on database driven inserting instead of the more ambiguous "Job Ticket." This decision was influenced by emerging customer requirements to standardize formats for database driven inserting. Based on the importance of this area to the entire Council, it was added to the agenda for group discussion.

The discussion began late on the first day. Tony Stuart presented a strawman proposal that included arriving at a common definition, developing a list of elements to standardize, examining existing standard tables for related information, and defining new tables and/or extensions for the new elements. Tony suggested that both the Mailpiece Cross Reference Table and Bill of Materials Table contained information pertinent to database driven inserting. During this afternoon session we were not able to agree on a common definition or purpose.

The next morning, we started over again with a brainstorming session, in which each member of the council presented his or her own definition, requirements, benefits, and ideas. The discussion that ensued was extremely valuable. The major points that were brought up are summarized below:

Customers want the ability to associate large amounts of processing information with a mailpiece without using a large (OMR) bar code. One solution to this is database driven inserting (a type of mailpiece finishing) in which the mailpiece contains a small correlation identifier which is used as an index into a database in order to retrieve processing instructions. These processing instructions may include information on the type and number of inserts, whether inserts are mandatory, optional, or optional depending on weight (postal breaks), whether to print an address on an envelope, and, if so, the address itself. This information varies from mailpiece to mailpiece and is often based on consumer preferences, buying patterns, demographics, etc.

While some vendors offer database driven (or selective) inserting, there is no standardization of the process, particularly the file formats. Vendors use either a proprietary format, or have a proprietary means for specifying an open format. Some vendors even have multiple file formats across their product line. In order to take advantage of database driven inserting, customers with mixed vendor shops need to develop expertise in the various processing capabilities and file formats. The lack of a standard makes it difficult to split a job across two different types of inserters or to move a job from one inserter to another, should the first inserter break down. The primary rationale for standardization is reduction of cost for the customer.

Following the LMO model, we will standardize the core elements of database driven inserting, i.e. those that are common across a number of vendors, and we will provide a mechanism for extension for proprietary or device specific functions. We will not attempt to standardize a master superset.

Customers want to be able to modify the database up until the point that the mailpiece is assembled. Types of modification include "diverts" due to quality control, data errors, change of address, deceased, or at customer request. Today, these diverts are handled manually, e.g. customer service department calls mail room (or sends fax) requesting that particular pieces be "pulled." Another type of modification involves changing the types of materials that get inserted, e.g. a promotional offer expires, the stock number on an insert changes, etc.

The information in the database can be used to determine the steps for hand finishing mailpieces that have been reprinted due to prior mutilation.

The information needed to support database driven inserting consists of three types of information: 1) global job instructions (that pertain to either the job or all mailpieces), 2) sheet order (which has implications on bar code/OCR read efficiency as well as cut sheet printout integrity), and 3) piece level processing instructions.

We need to resolve sheet identification issues such as: type of mark (bar code, OCR, etc), placement, orientation, size, frequency, and whether by mailpiece or page. There was a consensus that we would not want to limit a customer's options, but we would find ways to standardize the specification of this information. The standardization of this information can occur at the job level.

We need to resolve download and access issues such as: LAN performance, block size, "push" model versus "pull" model, and frequency. The consensus here is that the information should be stored in a centralized (or centrally available) database as long as possible and downloaded to the inserter at the last possible instant. The ideal would be to request the mailpiece finishing instructions just as the mailpiece enters the inserter, but this is not possible given current network and database capabilities. The alternative is to request a block of instructions at a time.

Database driven inserting implies the availability of a unique identifier (the LMO Mailpiece Identifier is unique within a product instance). Some types of printed material (e.g. rasterized bitmaps, "junk mail") do not have a unique identifier.

Database driven inserting instructions should not be encoded by inserter feeder location. There is a tremendous amount of variation in inserter capabilities and configuration, even within a product line, and there are lots of special configurations. The database driven inserting standard should specify materials by name rather than hardware specific locations. Mapping the name (e.g. discount coupon) to an inserter location (e.g. feeder 3) should be part of the inserter setup.

There are several different types of mailpiece level information that should be standardized: insert selection, divert selection, mandatory or optional processing, mandatory or optional insert, blocks of information (text, e.g. addresses) at specified locations, assembly information, and machine control, zip code or tray break information.

We need to develop standard methods of identification for inserts. Possibilities include: serial/stock number, picture, bar code, etc.

The DMI enumerated data type associates an integer code with semantic information, e.g. a Stitching Type of 4 means Staple Top Left. We need to define a registry of enumeration values so that we can assign a range of values to each vendor. This will prevent vendors from arbitrarily picking values that conflict with values selected by other vendors. We will also reserve a range for standard values.

We need to support process variations, such as the one described by Bowe, in which the inserter drives the printer. This implies that the specification should be analogous to a language. Instead of thinking in terms of specific functions, we need to generalize. The flexibility of the interfaces provided by the DMI provides a good framework for this approach.

Conclusion

The LMO Vendor Council Meeting concluded with a unanimous decision to concentrate on database driven inserting in 1996, and a goal of implementing a customer pilot and/or demonstration for Xplor.

Kenneth Bucci, CIGNA, a potential customer of LMO technology, volunteered to be the host for the next meeting. We tentatively agreed on a date of June 11-12 at the CIGNA facility in Easton, Pennsylvania.

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