

MeL Delivery Evaluation

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Executive Summary

The scope of this study was summarized in July's News@MLC: "the intent is to gather empirical data about how the system is functioning and where improvements can be made."

The delivery network serves 695 libraries as of December 2008. ProMed provides transportation services between 378 primary locations and 317 additional are serviced from the ProMed stops via library resources. Following summarizes the current ProMed network for libraries.

Days Service per week	Locations	Per Cent	Stops/Week
Two Days	203	53.7	406
Three Days	70	18.5	210
Four Days	9	2.4	36
Five Days	<u>96</u>	<u>25.4</u>	<u>480</u>
Totals	378	100.0	1,132

The study included evaluation of four months of MeL Delivery Issues Forms, ProMed responses, on site visits to ProMed's Royal Oak facility, Ann Arbor District Library and Eastern Michigan University Library, review of MeLCat Turnaround Time Data, internet searches and emails or phone discussions with library resources and associates involved with commercial order fulfillment.

While provided without charge, library patron expectations for timely service from their libraries are similar to consumer feelings about e-commerce resources such as Blockbuster OnLine and Netflix. The processes are almost identical except libraries do not receive direct patron revenue. In some respects it is more difficult for libraries to do interlibrary loans than retailers for the following reasons.

1. Library facilities are primarily set up for patron browsing rather than distribution.
2. Space to do interlibrary processing, shipping and receiving is limited.
3. Expertise to design for interlibrary loan efficiency is outside the skill sets of most staff.
4. Budget is a major problem for every area of the library.
5. Volume variations result in labor scheduling challenges.
6. MeL systems have to interface with multiple library computer systems.
7. Some library materials are of exceptional value or are irreplaceable.

Visits to Ann Arbor District Library, Eastern Michigan University and prior visits to Michigan and Ohio libraries confirm dedication for interlibrary lending to share materials among all patrons in their networks. Potential ways to achieve service improvement include increasing days

of ProMed service, queue management, layout improvement and using levels of Lean Process consistent with the library size. There are also opportunities to enhance computer interfaces to speed processing.

ProMed's service was evaluated with the same methodology as I would use for any of their commercial customers such as Office Max. Based on the Delivery Issues form, the overall score was 98.22 %. ProMed's performance is substantially above industry standards of 95% for non-critical shipments. The primary area for ProMed improvement is to consistently provide automatic next day delivery after a non-delivery. A secondary issue of sorting accuracy is related to improved library labels and ProMed's worker sorting at the cross docks.

Using first half 2008 data from MeLCat transactions, times between being placed In Transit and Received at the requesting library were analyzed in multiple ways. In addition to overall statistics, data was analyzed with and without the largest borrower and supplier AADL, EMU only and separate review of Lower Peninsula and Upper Peninsula transactions.

Thinking of the entire MeL network, the bottom line is that the system is working but improvements can reduce the overall time between library receiving requests to receiving and patron notification for pickup. The most significant improvement would be to increase the number of locations on two day service to three day service. Some library improvement costs such a layout or process change in a small library may be modest while software or facility updates can be expensive at any library. Solutions must be scaled to library size in all cases. Despite efficiency gains, increased volume handled may require additional labor for the function.

Review of ProMed Transport Operations

MeL Delivery Issues Forms between libraries and ProMed sent between June 24th and October 31st were reviewed and are summarized on the attachment titled MeL Email Analysis.pdf. Responses from ProMed, while not tabulated, were consistently timely and professional.

During the seventeen week period there were 22,023 scheduled ProMed stops, including 1,804 stops under the Suburban contract that ended in September. The average number of stops per week was 1,295.

There were 393 incidents reported by the libraries. For clarification, if a library reported two issues on a single email, two incidents were recorded. The most critical ProMed issue is Non-Delivery/Pickup. The analysis shows that 35.4 % of all customer service emails (0.63% of the stops) were Non-Delivery/Pickup. Worded another way, approximately 8 stops per week were reported as non deliveries. It is unclear how many stops were subsequently completed the next business day. While some were related to accidents, running late or breakdowns, there appear to be new driver training issues and/or possibly vehicle capacity issues. For libraries with five day per week service, missing a day is an inconvenience. Missing multiple days for libraries with two or three day service is very serious. After Non-Delivery/Pickup, requesting tracing was 31.3% or 7.2 issues per week.

The overall performance shown on the summary is excellent with 98.22 per cent of all stops completed satisfactorily. It is impressive that there were only 6 Driver Attitude Issues reported

which indicates ProMed delivery contractor professionalism. Several Upper Peninsula libraries noted service improvement with Waltco resuming handling the U.P. There are multiple areas of concern to be addressed by ProMed and libraries to improve performance.

Under the Miscellaneous category, there were several emails relating to vehicle capacity on multiple occasions. Resolution of this issue requires attention on an individual location basis. Solutions could require a library with less than five day service to increase the number of days or for ProMed may be using a small vehicle. At some point in time, it may be necessary to have twice daily stops at five day per week locations supporting multiple libraries within their own network.

Tracing requests represented 31% of the requests and 0.56% of the stops. Given the large number of books transported it is a low incidence but an issue. Improved labels and attention by everyone handling the items will reduce errors and boost performance. This includes library staff checking in books on the system.

Operations at ProMed's Royal Oak facility were observed during an evening shift and a morning shift in early July. The facility is base for approximately 70 local contractors. Photos included in Annex 1 show a functional facility which is really fast paced in the morning and a good pace in the evening. Library materials are a significant portion of the volume but there are many other customers with a wide variety of products: pay check packets, medical and office supplies, eyeglasses, dental materials, etc. All products were clean and compatible with library materials.

The stated customer service policy is that all materials picked up from the local area are sorted to the appropriate destination hub and will be transported overnight for delivery the next day for Lower Michigan. I trust ProMed is consistently meeting that service standard but am unable to verify it with the available data.

Shipments leaving Royal Oak and shipments arriving from other hubs for the Royal Oak service area were observed. In the morning, sorting to specific delivery routes is accomplished. Inconsistencies of label size and quality provided by the libraries were observed. Lighting in the typical hub facility is low so the label font and clarity directly influence sorting accuracy and speed. Photo examples are shown in the Annex 1 PowerPoint file. Some sealed full tubs destined to specific libraries had two address labels. The tubs had to be opened to determine the destination. While there were few reports of material received for other libraries, I understand the general practice at the libraries is to place these items in the outbound tote without notification. The current efforts to improve label clarity, font size and hub/library numbering will have a positive effect on delivery quality. Conversations with libraries indicate that on occasion they receive tubs that contain materials from a single library and intended for many destinations that somehow bypassed sorting at the hub. Whoever placed the label on the tote, either the sending library or ProMed caused the problem.

Service within the Upper Peninsula is subcontracted to Waltco and operates in the following example. In a perfect scenario, ProMed picks up all outbound shipments in Lower Michigan on a Monday and the flow goes as follows: Local materials are brought to ProMed's Royal Oak location for same day sorting. The U.P work is then sorted to the Grayling Line-haul where it is

transported up to Grayling Monday evening / Tuesday Morning. The freight is sorted to ProMed's St. Ignace route driver where he transports the work to the Garcia storage facility on Tuesday around 2:00PM. Depending upon the ProMed driver and Waltco driver arrival time, the materials can be picked up and transported to Iron Mountain either Tuesday night or Wednesday night. This freight is then sorted by Waltco either Tuesday night for Wednesday delivery or sorted on Wednesday for Thursday delivery. With only one library with five day service and the remainder on either two or three day service, timeliness of the St. Ignace interchange is critical.

On Site Observations at AADL and EMU

The Annex 1 PowerPoint file provides an overview of each operation. Ann Arbor District Library was chosen as the highest volume lender and borrower within MeL, AADL had taken significant steps to reduce the inbound backlog prior to my visit. In addition, the No Pack study has provided benefits. The fact that MeL and AADL systems are both Millennium eliminates a large work load. They simply could not handle the volume otherwise.

AADL is the central point for ProMed's service and AADL also handles MelCat shipments destined to and from four branches interchanged by the library shuttle truck. AADL patrons benefited through use of 18,791 borrowed items while other MelCat library patrons benefited from 19,268 items loaned by AADL.

The morning paging slip run has been supplemented with an afternoon printing run to manage the queue. AADL also has Lean Process expertise on staff to make process changes that will provide capacity and efficiency. Nevertheless, even in the best run operations it takes a certain staffing level to meet volume requirements.

Eastern Michigan University has lower volume and consistently processes requests in a timely manner. Eastern Michigan University administrative efforts are much higher than AADL due to different systems requiring use of DCB (Direct Consortial Borrowing) software to provide patron and bibliographic records to MeLCat. There are opportunities for layout improvements to process materials through the respective operations using Lean principles.

Conclusions and Recommendations

Process improvements for locations with five day per week service will provide a framework for libraries with fewer service days. These are conceptual goals meant as discussion points for specific library goal setting. Unless you measure performance, you cannot improve performance.

Process receipts of inbound materials the same day received. It will serve two purposes. The first is to make the borrowed materials available for patrons. The second is to make returned materials available for library patrons that have them on request or for return to the stacks as available. Improved inventory turns have benefits in book purchase costs and patron satisfaction. In other words, reduced overall cycle time makes it possible to serve more patrons with fewer books.

Pick, process and pack all outgoing materials for loan before the next ProMed pickup. Under this scenario, most Lower Peninsula libraries will receive their materials within three or four days.

Use bins at larger libraries designated for volume hubs and/or libraries. Properly identified, these totes would flow through the ProMed hubs and eliminate the initial sort.

Do not overfill tote bins. This one is self explanatory with the number of DVD's , etc.

Develop some prototype work stations. Whether straight line, corner or U shape, providing this information could be a great help to smaller to mid size libraries. There is Lean Process expertise in multiple libraries that could present this at conferences or on the web site.

Update procedure for ProMed to follow when non-delivery occurs. For libraries with less than five day service, it should be accomplished on the next delivery day.

Update reporting of instances when vehicle capacity is limited. It may be a situation where the library may need additional days or even multiple pickups per day, or a larger vehicle.

Improve labels and label making. Many labels have small fonts that are challenging to read quickly in the typical sorting environment. From a library perspective, a limit of six labels at a time is very inefficient. They should be able to pull up their pick list summary and check off how many labels they want with default being 1 if checked.

Consider MeL system upgrades. The committee has a long list but I observed the challenge of substituting another bar code among numerous copies of the same book in a circulation library. The DCB process for dissimilar systems also may have planned enhancements.

Consider guidelines for days of service. For libraries with less than five day per week service, particularly those with two day per week service, library volume may require additional service days in fairness to ProMed and vehicle overcapacity issues.

Continue Win-Win relationships with ProMed. To provide quality service, ProMed and their delivery contractors have to make a reasonable profit. They have proven themselves to be reliable and efficient in supporting the MeL goals. The best contracts are achieved when all parties fully understand services and costs required to make the overall network efficient.

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