



USAID | DELIVER PROJECT

Supply Chain Management E-Newsletter

Quarter 3, 2008

Welcome to the Quarter 3, 2008 installment of the quarterly USAID | DELIVER PROJECT Supply Chain Management E-Newsletter. The e-newsletter includes articles on supply chain best practices, public and private sector supply chain technology, project topics, and descriptions and evaluations of pilot programs.

The team welcomes your input! To submit an idea for a future newsletter, or to share information with our readers, please contact James Gibney, Technical Advisor, at jgibney@jsi.com, or Kelly Hamblin, Program Officer, at khamblin@jsi.com.

Transaid: Achieving Optimum Fleet Efficiency

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By Special Guest Author Gary Forster, Head of Program Development at Transaid

In the previous issue of the Supply Chain Management e-newsletter we looked briefly at the importance of transport management for service delivery organizations. Here we take an in-depth look at how the British NGO Transaid achieves optimum fleet efficiency for the organizations with which it works throughout Africa and what impact this has upon service delivery.

The Impact of Effective Transport Management

A project completed by Transaid within the Department of Health in North West Province, South Africa led to a reduction in the number of vehicles required by the department from 2,300 to 1,000. This reduced fleet was still able to support the same level of service delivery and delivered massive cost savings to the Provincial Department.ⁱ The same project produced the following operational achievements:

- 55 percent reduction in fleet size
- 55 percent reduction in transport capital budget
- 35 percent reduction in operational transport costs
- 85 percent transport availability achieved
- 75 percent vehicle utilisation achieved



A project undertaken by Transaid with the Ghana Ministry of Health produced equally astounding results:

70 percent more kilometres travelled in 12 percent less vehicles 20 percent less fuel used

- Ante-natal care increased by 100 percent
- Attended births increased by 400 percent
- Child immunisation increased by 100 percent

How to Achieve Optimum Fleet Efficiency

The efficient use of transport resources such as vehicles, whether they are owned by the government or by the private sector, is vital to providing access to services and markets. A variety of studies, mostly conducted in the health sector have served to demonstrate the benefits to be gained through the implementation of fundamental transport management techniques. One such study highlighted that direct comparison between weaker and stronger systems demonstrates that the better-managed systems are 50 percent more cost-effective and efficient in supporting health service delivery.ⁱⁱ

Situational Analysis and Policy Development

Transaid builds the capacity of public health authorities to provide effective, safe and cost efficient transport management systems to promote equitable access to primary health care services. A successful project can take anything between 3 and 5 years for fleets of 500 – 10,000 vehicles. Firstly Transaid undertakes a situational analysis to compile enough data and understanding to provide a foundation for improvement including the existing fleet size, its composition, current policy content and dissemination, maintenance regimes, financial management for transport provision. This stage is followed working with both senior management and ground level transport officers to develop a comprehensive transport policy.

Building the Capacity of Transport Officers

Following the development and dissemination of a suitable policy it is time to build the capacity of transport officers within the organisation at the same time as developing data collection tools such as vehicle log books and monthly utilisation reports. The transport officers receive training about data collection and the tools which they will require and then they are sent back to the field for 4 to 6 months to collect data about the vehicles which they are responsible for. Upon returning for further “data analysis” training the transport officers have the advantage of using their own data for the training tasks which they are requested to complete. Following the data analysis training the transport officers are again sent back to their respective areas to collect and analyse transport data and to enact change where greater efficiencies can be attained.

Key Performance Indicators

Transaid focuses on the collection and analysis of transport data in order to provide for the calculation of 7 Key Performance Indicators for fleet vehicles;

1. **Kilometres Travelled** – from the ‘Vehicle Log Sheet’ this indicator can provide insight as to the utilization and fuel consumption of the vehicle.
2. **Fuel Consumption** – excessive fuel consumption can be a result of inefficient driving, inappropriate fleet composition or even fuel theft.
3. **Running Costs per Kilometre** – a combination of the fuel consumption and maintenance cost data which not only helps to identify cost ineffective vehicles but also serves to provide data about the economic point of replacement for each vehicle.
4. **Availability** – vehicle availability is a measure of the amount of time which the vehicle is available for service delivery e.g. not in maintenance or being used for “official engagements.”



Derelict vehicles at a primary health care center
(Photo by Transaid.)

5. **Utilisation** – the utilization measure calculates the amount of time which the vehicle was available versus how much time it was actually in use fulfilling service delivery duties.
6. **Needs Satisfaction** – in short the needs satisfaction of a fleet is calculated by comparing the number of legitimate transport requests submitted versus those which were actually fulfilled by the fleet.
7. **Safety Record** – safety data is compiled and analysed to ensure that crashes and the resulting costs and lost time are appropriately managed.

Essential Success Factors

Transaid has over 15 years of transport management experience in the developing world and during that time a number of key factors have presented themselves as being critical to the successful implementation of transport management systems, these include:

- the unconditional support of senior management for the implementation of a transport management system
- the development of project champions to drive change in the management of transport
- the financial support required for the implementation of transport management reform activities

About Transaid

Transaid is an international development organization that specializes in transport management, with a focus on sub-Saharan Africa. For more information visit <http://www.transaid.org>.

ⁱ Timpson A. (2004) *Evaluation of the Transaid Transport Management Project with Department of Health, RSA, Department for International Development*

ⁱⁱ Nancollas S.A. (2001) *Study To Determine The Key Components Of A Cost Effective Transport System to Support The Delivery Of Primary Health Services*, Abt Associates, TRANSAID Worldwide, Bill and Melinda Gates Children's Vaccine Program at PATH, World Health Organization, Riders for Health

Warehouse Management Systems (WMS) Revealed

As the quantity and volume of products increase—either stored in or moved through a warehouse—more and more warehouse managers are turning to computerized warehouse management systems (WMS) for assistance. Before you purchase and implement a WMS, you need to ask yourself some important questions.

The first question should be—Do I really need a WMS?

Not every warehouse needs a WMS. Although, any warehouse could benefit from a computerized process, a cost/benefit analysis would help you decide whether the benefits are great enough to justify the initial and ongoing costs associated with a WMS. Usually, the number of stockkeeping units (SKUs) your facility or program handles will help you decide whether a WMS is the right

choice. The greater the number of SKUs, or the greater your order quantities, the more likely it is that you need a WMS.

What will a WMS do for you?

A WMS is primarily used to assist in managing materials within a facility and to aid in processing the associated transactions. When set up correctly, a WMS should direct picking, replenishment, and putaway.

A WMS will—

- *Increase inventory accuracy.* If set up and used correctly, a WMS should be able to specify where and how much of each product you have in your facility.
- *Improve customer service.* If you increase inventory accuracy and use direct picking, you should be able to respond to your clients' orders faster and more accurately than before.



A warehouse in Zanzibar, Tanzania

A WMS could —

- *Reduce labor costs.* A WMS can improve labor efficiencies because you can almost eliminate the time spent on activities—looking for products or shutting down operations to conduct physical inventories. However, a time-consuming effort must go into training users and maintaining the system; this could be more than the labor you save on the warehouse floor. Remember, however, that without investing in additional tools, you will need to hire additional staff to maintain the existing levels of service, as the demands increase.
- *Increase storage capacity.* While a WMS provides the tools to optimize what and how goods are stored which could result into increased storage capacity, this improvement will depend on how disorganized the processes were before the WMS.

A WMS will not—

- *Reduce your inventory.* If you improve the accuracy and efficiency in the receiving process, you may reduce the level of safety stock required, but the impact will probably be negligible compared to the overall inventory levels. When you are greatly overstocked or have significant quantities of expired products, the WMS can help you *see* your inventory and assist you with your inventory management. But, after operations return to normal, it is unlikely that the WMS will help reduce your inventory. The main factors that control inventory levels are *lot sizing*, *lead times*, and *demand variability*, which are all outside the impact of a WMS.

What should you look for in a WMS?

At a minimum, a WMS should—

- have a flexible location system

- utilize user-defined parameters to direct warehouse tasks and use live documents to execute these tasks
- have some built-in level of integration with data collection devices.

How does a WMS work?

One software application could be significantly different from another application; but, in all cases, the basic logic will use a combination of the following data elements: *item*, *location*, *quantity*, *unit of measure*, and *order information*. The way the software is used will determine where to stock and where to pick, and also direct the sequence of these operations.

What are the major challenges in installing a WMS?

You need to remember that warehouse management systems are large, complex, and data collection intensive. They require a substantial amount of initial setup, need system resources to run, and



A woman uses a handheld device in a warehouse in Guyana. (Photo by MACS.)

usually interact with external data from the accounting, procurement, and shipping departments.

Set up—This can be quite extensive. The system needs to capture the characteristics of each item, such as the exact dimensions and weight of each item, in each unit of measure in which the item is stocked. This sounds complicated, but it is necessary if you plan to store specific items in different ways (for example, eaches, cases, pallets). The location of each item must be maintained, either at the detail level or by grouping similar items and locations into categories. Based on your setup, the WMS will be able to

determine the storage location of your product—where the product will fit and at what location, as well as the sequence for putaway (stocking) and the sequence for picking (filling the order).

Resources for running the WMS—You will need someone to manage your WMS; if the system is extensive and complex, you may need a team whose sole responsibility is to manage the WMS.

Ongoing data management—As new products, in new sizes and new quantities come into your facility, you must continually find ways to update your system so it can locate the space for putaway and locate your product when you need to fill an order. Depending on the environment, this can be highly automated or manually processed.

Things to remember when setting up a WMS

You must incorporate, into a single process, the selection of automated data collection (ADC) hardware, such as barcode scanners and WMS software selection. Higher-priced WMS packages may be less expensive long-term, because they may have a higher level of support for the types of ADC hardware you may use in the future. If the WMS you select does not have the specific ADC functionality, estimate programming costs at the beginning; these can easily go over budget. Also, consider the integration with Automated Handling Equipment and Advanced Shipment Notifications. It is also important for you to examine the mechanism that you plan to use to link the WMS with other institutional operations.

Bottom Line

A WMS can greatly improve processes, but you must ensure, before you begin, that you select the best tool for your needs.

As with many software solutions, WMS have evolved over time to include a broad range of functionalities; users have added modules to the basic WMS package. Today, they can include transportation management, supply chain planning, distribution requirements planning, and a variety of other tasks. So many choices can lead to confusion because of the overlap with other software functionalities. It is important for you to re-establish what, specifically, a WMS does and what you want it to do.

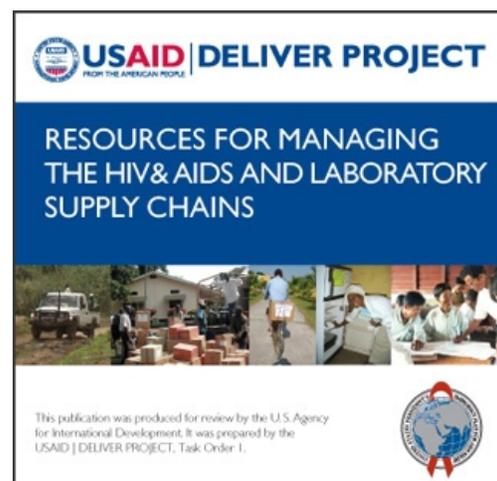
Source: Piasecki, Dave. 2007. *Warehouse Management Systems (WMS) 2000-2007*. Kenosha, Wis.: Inventory Operations Consulting L.L.C.

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Although the resources on the CD refer primarily to supply chain management of HIV & AIDS products, the ideas and tools could apply to any product group. Resources and tools include—

- inventory control
- LMIS
- logistics system design



- forecasting and quantification
- product selection
- monitoring and evaluation
- policy
- lessons learned
- country reports.

If you have any questions about the CD, contact Kelly Hamblin khamblin@jsi.com.

Spotlight on Bangladesh: Experiences with the Web-based LMIS

The Management Information System (MIS) of the Directorate General of Family Planning (DGFP), Ministry of Health and Family Welfare, Bangladesh, has made some impressive changes to its information systems. It now uses a web-based logistics management information system (LMIS). Using a web application, the field staff routinely enter various logistics data from field locations, in a decentralized mode, and then the data are stored in a central database server. The web-based LMIS enables a user to access data through the Internet at any time. The data entry load is distributed from the central to the Regional Warehouses (RWHs), improving the accuracy and timeliness of report generation and supply decision making. See below to read the full article.

At any time, authorized users can determine the stock situation of all or specific family planning methods—including the Government of Bangladesh (GOB) staff, both at various tiers of the implementation and the policy level; and selected stakeholders/partners that work with contraceptive security. The system will promptly provide information that will assist in supply decision making, which might include addressing supply imbalances and, eventually, improving product availability.

Using the Internet, the web-based LMIS makes logistics data more accessible to authorized users from anywhere, at any time.

The process is simple. The more than 25,000 service delivery points (SDP) send printed forms to their respective upazila (subdistrict) family planning office. The 489 upazilas compile the data, manually create a new report, and send printed copies of this report (Form 7Bs) to their respective regional warehouses. The 21 regional warehouses enter the compiled information in the web-based LMIS, including their stock/reporting data. The DGFP MIS unit, based in Dhaka, downloads the data from the LMIS and prepares the national LMIS report.

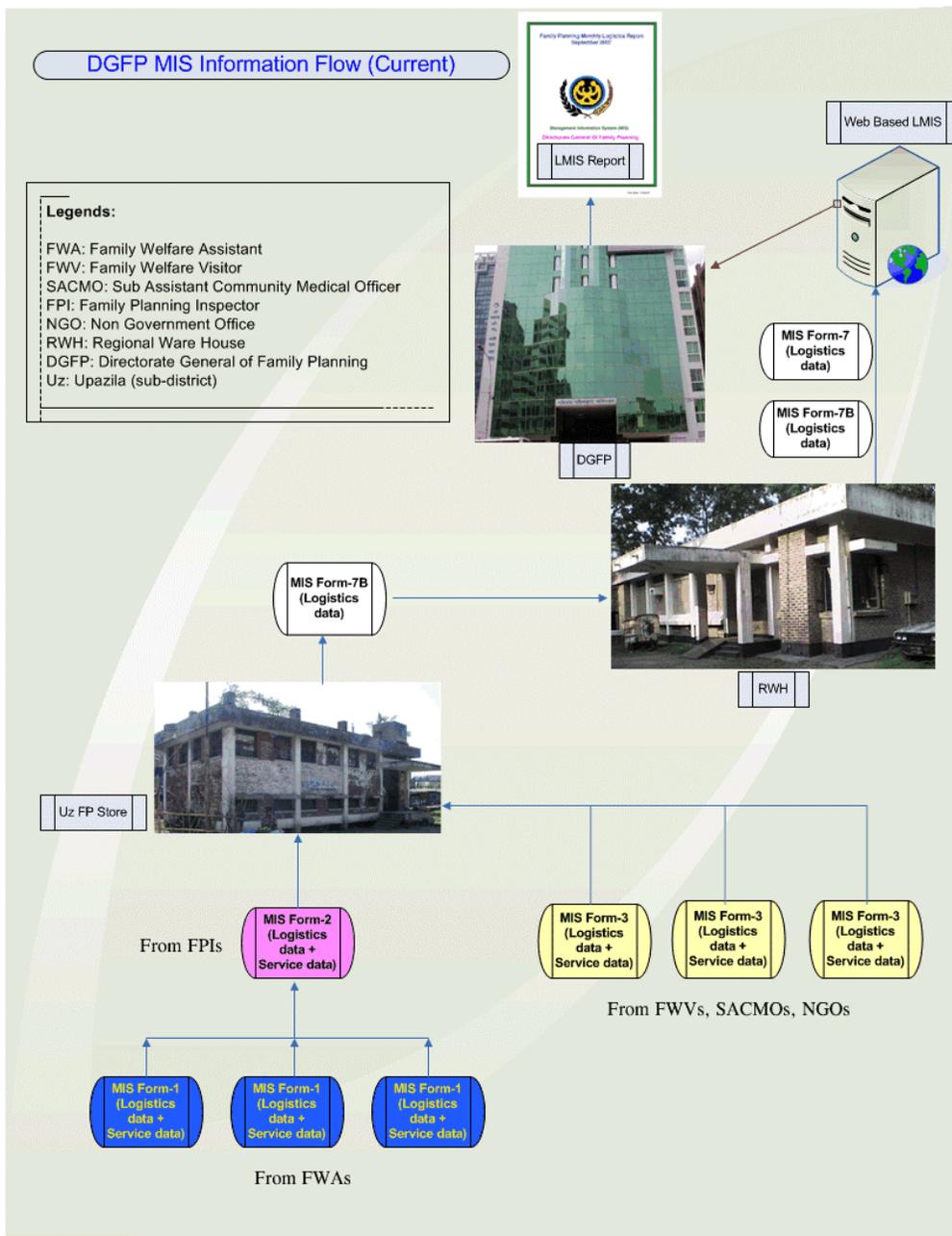
The system can improve the process in many areas:

- increase access to logistics data at the national level and the RWH level (and for others who have access to the web-based LMIS)
- enable managers at different levels to make decisions that will improve the supply chain management system

- enable donors and stakeholders to access relevant supply/stock information for decision making
- enable warehouses to determine the status of the upazila and field stock immediately after data entry
- assist the warehouse manager in making timely supply decisions
- support the planners and policymakers with accurate and readily accessible logistics data at any time, from anywhere on the web strengthen supervision and monitoring at all levels.

Sustainability was the key goal from the beginning of the web-based LMIS design through to the implementation. The warehouse-based DGFP staff were trained and retrained to ensure that they could eventually operate the system with minimal outside support. Also, because the warehouse staff

did not have strong computer skills, while the web-based technology was being introduced, the emphasis was on keeping it as simple as possible. Additional enhancements can be planned after the staff has more experience with using this technology.



The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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