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For more information, contact
MIT Global SCALE Network

Postal Address:

Massachusetts Institute of Technology 77
Massachusetts Avenue, Cambridge, MA 02139 (USA)

Location:

Building E40, Room 267
1 Amherst St.

Access:

Tel: +1 617-253-5320
Fax: +1 617-253-4560

Email: scale@mit.edu
Website: scale.mit.edu

Research Report: ZLC-2011-2
Auditing Models for Humanitarian Supply Chains
Camilla Agostinho

For Full Thesis Version Please Contact:

Marta Romero

ZLOG Director

Zaragoza Logistics Center (ZLC) Edificio

Náyade 5, C/Bari 55 – PLAZA 50197

Zaragoza, SPAIN

Email: mromero@zlc.edu.es

Telephone: +34 976 077 605

Auditing Models for Humanitarian Supply Chains

By Camilla Agostinho

Thesis Advisors: Dr. David Gonsalvez and Dr. Mozart Menezes

Summary:

This thesis develops an audit model for humanitarian supply chains especially applicable to field missions. The model focuses on operational-oriented assessment, and the evaluation will provide the ability to compare the current state to previously established standard procedures. The model was built based on a case study of actual audits of a large humanitarian organization mission in Central Africa.



*M.Eng. in Logistics and
SCM, MIT-Zaragoza
International Logistics
Program, Spain, 2011*

*B.S. of Science in
Agricultural Engineering,
State University of
Campinas, Brazil, 2005*

*Logistics Design Coordinator
at DHL, Brazil, 2008-2010*

KEY INSIGHTS

1. The Audit Model captures the operational performance of any AidOrg on-going mission and is complemented by a strategically-oriented model, already developed for the organization.
2. The major improvement opportunity is related to Key Performance Indicators, as they are still in initial implementation in AidOrg and are useful for controlling and evaluating the supply chain. There is still a lack of understanding by the staff of the use of KPIs in building a culture of continuous improvement.
3. Planning and involvement of staff in phases of the audit procedure provide high-quality assessment, with direct-to-the point results.

Introduction

Supply chains have recently been receiving attention of high-level management in humanitarian organizations. However, these organizations are still several years behind the private sector companies

when comparing their supply chains (Wassenhove, 2006).

The effectiveness of humanitarian supply chains depends on the availability and quality of information, but normally data is scarce and information systems do not provide accurate data. Therefore, it is necessary to implement assessment models in order to evaluate current supply chain activities and capture improvement opportunities (Van der Laan *et al.*, 2009).

Current Situation

AidOrg¹ is an international, independent, medical humanitarian organization. In 2009, they treated 190,000 people living with HIV/AIDS, and gave anti-retroviral therapy to more than 162,000 people. The total number of outpatient consultations totaled 7,509,512 (AidOrg Activity Report, 2009).

AidOrg currently spends 37% of its budget in supply chain processes; however, it lacks a structured performance measurement system. Without adequate visibility into the sources of inefficiency and

¹ For privacy reasons, names and other identifying information have been changed.

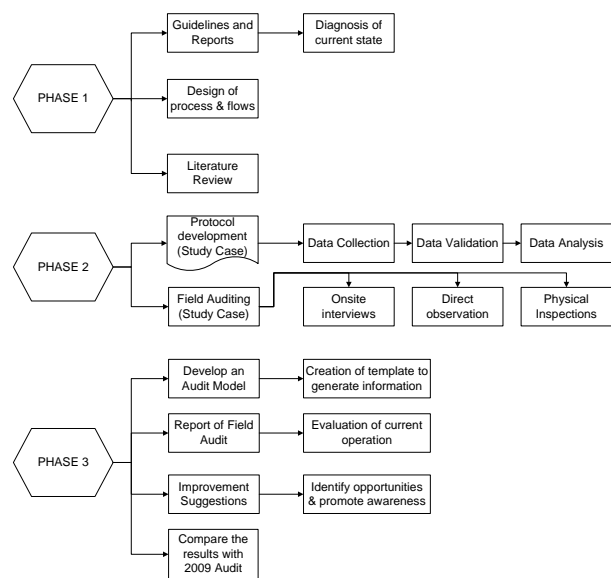
waste in its supply chain, the organization is unable to promote fact-based decision making to improve its activities.

According to Menezes (2010), the use of information for improving supply chain performance is the key point for AidOrg. He identified problems mainly related to lack of supply chain concepts, lack of top-down enforcement of recording data, and lack of key performance indicators (KPIs).

The author also mentioned that through the audits of missions, it was possible to observe that the operational problems found in supply chain management were directly related to failure to follow existing procedures for recording logistics transactions and lack of expediting. It was within this context that the proposal for creating an auditing model surfaced.

Methodology

The development of this thesis was structured in three main phases, according to the Figure below.



The first phase consisted of a diagnosis of AidOrg's current state through the examination of guidelines, procedures and previous audits. It also involved the design of process and flows to help the understanding of the overall supply chain. Finally, this phase included the Literature Review.

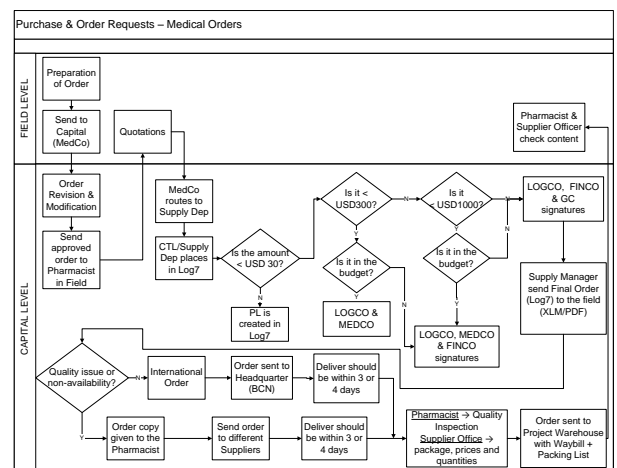
The second phase involved field research with a case study. To provide guidance during the in-field audit, a tentative audit model was developed. The pilot-audit was in a country in Central Africa, and because the mission was previously audited by Mozart Menezes in 2009, it also provided the opportunity to make comparisons and identify the advances in the supply chain.

The third phase was a rigorous and customized audit procedure for AidOrg, which took into consideration what is really feasible to measure, the data available, possible issues that can arise and organizational interactions. The model takes into consideration all the aspects that characterize an on-going humanitarian supply chain that can be applicable to any AidOrg mission.

Audit Model

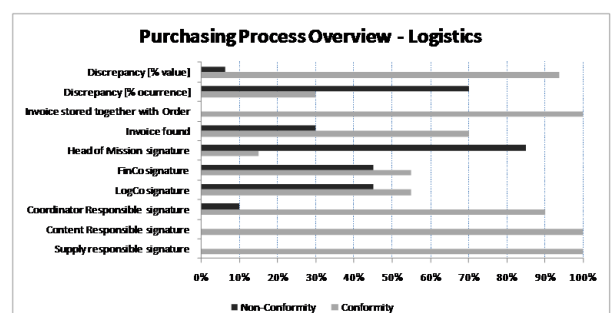
An audit model was created to cover supply chain processes as: purchasing, quoting, dispatching, inventory management, systems management, KPIs, and so on.

The model also includes the steps that should be followed before and after the actual audit. Before the audit the preparation involves planning phase, consisting of data gathering, examination of guidelines and reports, data analysis, and timetabling. As an example, the preparation for the audit should include the design of SC flows that will help during the audit, as shown in the next Figure.



After the audit, guideline compliance should be verified and comparison between the previous and current state should be made to evaluate how the mission had changed over time.

Finally, the report would be supported by the information generated from the model. Each process assessed would be evaluated in terms of conformity in relation to AidOrg procedures, as shown below.

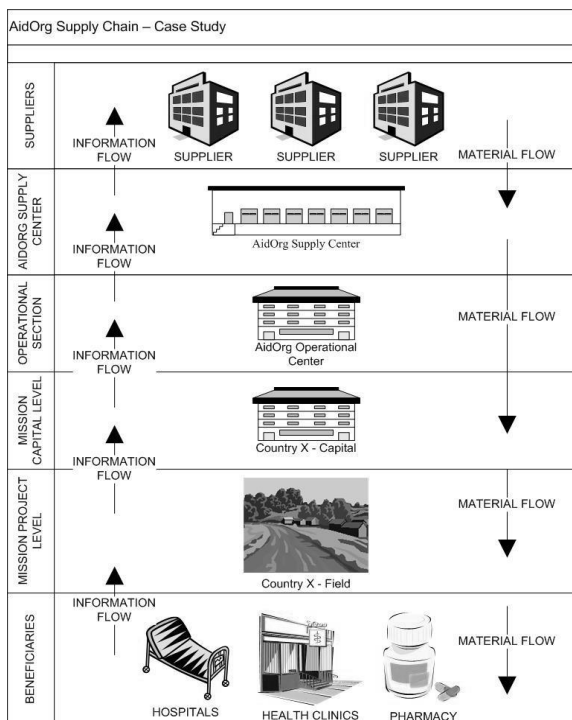


In order to provide a complementary analysis, the audit model also includes a Macro Analysis that the auditor will be able to fill in with the results of the Micro Analysis as a base. The Macro Analysis is more strategic-oriented and was a proposal from Menezes (2010).

Case Study

An AidOrg mission was chosen for the pilot-audit. The mission was established in 2000 mainly in response to the HIV/AIDS pandemic.

The supply chain structure of AidOrg in the country is as shown in the Figure below.



The audit was carried out at capital and project levels, and covered both types of products, medical and logistics.

The selection of orders and articles to be audited were prepared based on the following analysis of the databases provided by the organization: ABC analysis using Pareto's principle (for value and volume), high rotation items, lead times, and price variation. The information generated by the model was used for the Micro Analysis report.

The results of the pilot-audit were compared to the previous audit (Menezes, 2010) to give an idea of the changes in the supply chain performance over time. The main issues encountered were the following:

Knowledge: There was little improvement in knowledge about supply chain principles in the supply/logistics department. For example, the team followed the SC guidelines, but lacked technical

supply chain knowledge and consequently was not proactive in improving the current state.

Labor: Professional pride did not improve over this time interval. For example, the logistics/supply teams did not understand the importance of supply chain activities and the impact they had in the organization.

Key Performance Indicators: There was minor progress regarding KPIs. Although the KPI's tool was implemented in both logistics and medical departments, nowadays it is only carried out by the logistics department. In addition, the team did not analyze the results. It seems that even the top roles did not know how to use the tool and, consequently, did not understand and recognize the importance of such data.

Quality of Data: There was little progress in the enforcement of following existing procedures for recording transactions within the supply function and a lack of expediting. For example, data regarding orders, purchases, and quotations didn't follow a standard among projects and capital. The two systems in use also contributed to these deficiencies, as it increased the quantity of information and controls generated. Regarding expedition, it was observed that long lead times were viewed as routine occurrence by the staff. Instead, there should have been an effort to make the process faster and more efficient.

The report also includes a list of recommendations for the mission that involve both operational and strategic changes:

1. System

Improvement Opportunity: Two systems are in place, Log7 (logistics items) and Isystock (medical items). The latter lacks control of perishable articles (cold chain), expiration date, and lot number, and does not assign a position to each article. **Recommendation:** Concentrate the data of both Logistics and Medical items in only one system, which would be Log7. **Complexity of Implementation:** Medium.

2. Controlling / Change Management

Improvement Opportunity: Key Performance Indicators tool. **Recommendation:** Provide training and briefing in order to transmit the importance, benefits, and way to analyze it. Reinforce behavior that helps improve performance. **Complexity of Implementation:** Low.

3. Purchasing Process / Inventory Management

Improvement Opportunity: Long lead times for international purchases causes the field to order more, but unexpected decrease in demand can cause products to expire. Recommendation: Motivate local purchase through a) Dedicated purchasing team in France, but coordinating the shipping directly from the suppliers to the missions; b) Dedicated purchasing team in Africa to study suppliers; c) Replenishment from a regional warehouse in Africa. Complexity of Implementation: High.

4. Purchasing Process

Improvement Opportunity: Discrepancy between Invoice and Order. Recommendation: For reasons such as price fluctuation, discounts, products not available, change in quantities, and so on, update order or purchase request in system in order to match invoice. In the case of having two invoices for same order, archive them together. Complexity of Implementation: Low.

5. Inventory Management

Improvement Opportunity: Depending on the project and the article, the stock does not have positions labeled with numbers. In some sites, the positions are identified by the article's description. Recommendation: Standardize the inventory management by implementing at all sites in all projects the organization of shelves with position numbers. Complexity of Implementation: Low

6. Labor

Improvement Opportunity: The logistics team is not valued, and therefore, unmotivated; also teams are not aligned in terms of protocol and procedure. Recommendation: Redefine the responsibilities of the teams, both logistics and medical. Give the logistics team more autonomy and control over the logistics medical process. Complexity of Implementation: Medium.

Conclusions

The pilot-audit to the AidOrg mission was essential to gain a better understanding of the organization of supply chain flow, capabilities, constraints, and issues. In addition, it provided the chance to apply the pre-model, verify how suitable it was, and apply changes so that it matched the on-field supply chain. Because the audit model proposed in this thesis has an operational orientation, it should be complemented by the proposal of Mozart Menezes that has a high-level approach and is strategically-

oriented. The visit also provided the chance to identify improvement opportunities and classify them in terms of complexity of implementation. It was observed that most of them have low complexity, and thus, are feasible to be applied in the short term, not requiring high investment. The major improvement opportunity is related to KPIs, as they are a tool useful for controlling and evaluating the supply chain, although there is still a lack of understanding by the staff.

The audit should also consider the human aspect, that is, training and briefing the people involved in order to facilitate their acceptance, which would lead to more involvement during the audit and better quality results. More importantly it also helps in translating the audit results to real performance improvement.

During this project, it was observed that humanitarian organizations have been increasing their attention to the supply chain, and that academia is increasingly dedicating more resources to research in this context. There is also an alliance between humanitarian organizations and private sector, as both strive to learn from each other. As a result, humanitarian organizations, academia and the private sector together can contribute to a more efficient supply chain, meaning a better the life for those who are most in need.

The disasters, the epidemics, the armed conflicts and the healthcare exclusion, these are all things we would like to change, but we have little or no control over them. Nevertheless, as logistics professionals, we can help the humanitarian organizations do a yet better job in delivering aid, in relieving some of the pain. High quality logistics, this will be our way to contribute.

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