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# 1 Introduction

## 1.1 Good practice definition

*Good practice is a method or technique that has been generally accepted as superior to any alternatives. It has been proven to work well and produce good results<sup>1</sup>.*

## 1.2 Good practice criteria

The following set of criteria will help you to determine whether a practice is a 'good practice':

- ***Effective and successful***  
A good practice has proven its strategic relevance as the most effective way to achieve a specific objective; it has been successfully adopted and has had a positive impact on individuals and/or communities.
- ***Environmentally, economically and socially sustainable***  
A good practice meets current needs, in particular the essential ones of the world's poorest, without compromising the ability to address future needs.
- ***Technically feasible***  
Technical feasibility is the basis of a good practice. It must be easy to learn and implement.
- ***Inherently participatory***  
Participatory approaches are essential, as they support a joint sense of ownership of decisions and actions.
- ***Replicable and adaptable***  
A good practice should have the potential for replication and should therefore be adaptable to similar objectives in varying situations.
- ***Reducing disaster/crisis risks, if applicable***  
A good practice contributes to disaster/crisis risk reduction for resilience.

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<sup>1</sup> Nash, J. and Ehrenfeld, J., (1997), "Codes of environmental management practice: assessing their potential as a tool for change." Annual Review of Energy and the Environment 22, pp. 487-535; Bretschneider, S., Marc-Aurele, F.J., Jr., and Wu, J. (2005), "Best Practices" Research: A methodological guide for the perplexed, Journal of Public Administration Research and Theory , (15) 2, pp. 307-323.



## 2 Good practice description

### 2.1 Objective

The objective of the present report is to illustrate the cross docking optimization model, a green operational management innovation, regarding the more cost and time efficient coordination off an entire supply chain structure. The report describes the manner in which a company is able to be transformed to more eco-friendly and at the same time achieve better quality standards. Lean operations and Just In Time (JIT) inventory management, which are closely connected to this technique, can assist to reduction of every kind of waste and enhances, also, the adaptability of the organization. In this case, this practice is recommended for a super market retail firm which has the need of eliminating wastes and become more profitable in the long-run.

### 2.2 Introduction

The local and worldwide business scene has been evolving rapidly, especially during the last century. Small and Medium Enterprises (SMEs) and multinationals are facing continuous pressure by existing and potential competitors. This fact has been the trigger to the major development of modern businesses and has provided a great amount of opportunities. These opportunities are allocated through constant Research & Development (R&D) programs and aim to the specialization of every aspect of an organization or product/service. The fundamental tool to differentiate a brand is by investing the appropriate resources, such as financial capital, human capital, expertise etc., and launch innovative products, ideas, operations or culture.

Businesses, nowadays, do not focus exclusively on the maximization of their profits directly but attempt to become more cost and time efficient through different techniques. Manufacturing firms, in particular, prefer to approach their operational protocols as uniquely as possible. Inventory, manufacturing, transportation, supply chain management are the basic processes that allow an enterprise to save hundreds or millions of cash reserves, depending on their size.



The most revolutionary and difficult manufacturing strategy is lean operations, also known as “lean”. The mentality of lean operations was first introduced by Henry Ford in the beginning of the 20<sup>th</sup> century. Ford, after a research about securing more value from all resources and minimizing the waste of the company, managed to premiere the moving assembly line and workforce specialization. Both ideas proved extremely effective and revolutionized the manufacturing industry. The project of lean operations was again reintroduced and further developed by major Japanese manufacturers, such as Toyota during the 1990'. This demanding but highly innovative process provided to the Japanese market as a whole, a competitive advantage against western companies, part of which have now adopted lean, hoping to a more prosperous in their respective fields.

### **2.3 Actors and Stakeholders**

Lean operations need to be implemented and embraced by every stakeholder connected to the company. One of the most challenging parts in integrating lean is the new culture adoption by the employees because every individual is averse towards any kind of differentiation. Furthermore, the governmental instruments need to approve and allow the lean activity of a manufacturing company based on regional and international standards. Politicians and NGOs might be proven as valuable assets in this attempt or a vigorous liability and this is the reason why companies need to conduct extended research concerning the socio-political and economic environment before establishing lean. The most significant actors in the cross-docking approach are the supplies. The organization has to convince, educate and train all the suppliers in this philosophy in order to operate in a synchronized manner. It is vital that the suppliers comply with our needs at any time and are ready to complete all transactions by adjusting to the demand as rapidly as possible. This practice can have a positive impact on the business and the environment only if the entire stakeholder cycle becomes a part of it, each in their specialty, respectively.



## 2.4 Methodological approach

One way to implement the theory to the workplace is by applying Kaizen. Kaizen is a Japanese word referring to continuous improvement in all functions of the company and involves the entire firm. Moreover, the management and the workforce gain the opportunity to work all together with a common goal of improving the efficiency of the operations. By improving the operations, Kaizen also aims to reduce the waste within a value chain structure. This way, the company achieves less expenses and more productivity which concludes to more income flows and profit. Kaizen empowers research and development of innovation within the company, which allows to the creation of a competitive advantage against competition. Internalization is essential in sustaining successfully a lean operational structure. In order to integrate efficiently all aspects of cross-docking logistics and communicate constantly with different actors that are involved, the firm needs to invest in the development of reliable Information Technology (IT) solutions. Specialized software is required for every procedure regarding the product. From the vertical movements of raw materials to the final delivery to the clients, every process has to be monitored and controlled, in order for them to be compared to the KPIs that have been set by the company.

## 2.5 Validation

The practice has to be validated in a number of different levels in order to increase the probability of success in the market. First of all, any process needs to be in tact with regional and international legislation and industry standards. Illegal actions can immediately damage the quality of the product as well as the reputation of the company as a whole. The corporation has the opportunity to present evidence of the high performance standards by applying and credited various certifications which provide to the business credibility and respect; an example would be the ISO certifications. Continuing, the enterprise should partner with appropriate NGOs which are specialized in the industry and invite them to control vital aspects of the green operations and spread positive word of mouth in the marketplace. Similar to that, the



company can, also, conduct targeted audits, either by internal or external professionals, and ensure the highest productivity by all departments. Additionally, operational and marketing departments need to examine constantly market or competition benchmarks and keep track of the volume and capacity of the development towards more efficient business structure.

## 2.6 Results/outputs

As it was mentioned before, the company which applies the theory of lean operations and management will achieve efficiency and productivity. Therefore, cross-docking optimization is highly depended on the communication between all internal and external levels, which empowers the interaction and fruitful co-operation with the stakeholders and the suppliers. By improving the company's transportation and warehousing procedures and applying Kaizen philosophy, the firm achieves an environmentally friendly profile by minimizing the CO<sub>2</sub> Emissions and electricity waste. Muda is the term for waste regarding the uselessness and wastefulness of the raw materials in the value chain and lack of time management. Lean, through the cross-docking approach in this case, minimizes Muda and provides time efficient operations, as well as, increased revenue streams, strong stakeholder relations, innovation and society acknowledgement for the green focused activities.

## 2.7 Impact

Applying the proper methods and according to the lean operations philosophy, the company will get higher effectiveness in sectors such as logistics, inventory, IT and communication. As it was mentioned before, this process innovation targets the firm's needs in terms of resources and procedures with respect to the environment and aims to reduce the waste that is produced throughout the transportation protocols. Except from the firm's positive outcome, the society and the people are being offered better efficiency and productivity either they are workers inside the firm or not and in the same time the procedures that may pollute the environment are being reduced. Moreover,



the firm is also positively affected by lowering their inventory index. Ordering the precise amount of products in order to offer the exact number of the goods that have been forecasted helps the company, not only to be fast and productive but also to minimize their stock in case there are goods left unsold.

The impact can be measured mostly through Key Performance Indicators (KPI) which are globally used in order to monitor the outcome of the company's strategy and how the procedures are considered effective or not. Constantly monitoring and evaluation grant the company the advantage of updating and fulfilling the gaps that may be created during the transportation time. Offering a large variety of products (especially fresh) is a complicated process and needs to be precise with the quantities in order to produce the best quality service to the final customers. Some KPI's which can be used in order to measure the overall profile of the company are:

- Overall Equipment Effectiveness (OEE) = Availability x Performance x Quality
- Availability= Run Time / Total Time {of the transportation means}
- Average Time and Cost per Route
- Average Delay Time per Route
- Average Fuel Consumption(per route, weekly/monthly/quarterly basis)
- Vehicle Depreciation (if owned)
- 3PL Performance Rates
- Automated entry and approval functions
- Advanced workflow approval process to ensure consistent procedures
- Inventory Levels (in store)
- Sales Forecast
- Asset Utilization Levels (trucks not moving, products delayed in port etc.)





## 2.8 Success factors

The success factors of cross-docking operations are the fully integrated philosophy and the continuous controlling & improvement of the strategy. Lean is implemented through the involvement of every internal and external actor of the company, which helps to a more synchronized, error-free communication and operation processes. In addition, the fact that special software and personnel are constantly cross-checking and controlling every detail of the operational chain creates very competitive quality standards and motivates the staff to be more dedicated to the long-term objectives. Another vital factor is the enhancement of R&D and innovation inside the company that is setting the base for uniqueness, competitiveness and stakeholder loyalty.

## 2.9 Constraints

Unfortunately, since the firm decides to reform the whole internal philosophy and the culture of the employees, it has to be stated that the procedure involves a High Risk. In order to restructure the company's environment and facilitate modern equipment an additional time and resource investment will be needed. The company should cover training and infrastructure expenses in order to ensure a well-balanced transition to the new lean system. This additional investment may discourage a lot of companies and not allow them to pursue the necessary adaptations. Moreover, the design of a crisis management plan, in case of problems that might occur during the transition needs to be taken also into consideration. Last but not least, the management of the firm needs to persuade the partners and the suppliers so the supply chain management can focus on the same ethics and way of production. It is extremely challenging to convince external partners to adjust to a new strategy and make them believe that concepts such as, lean operations and green logistics, can help them evolve their businesses.



## 2.10 Lessons learned

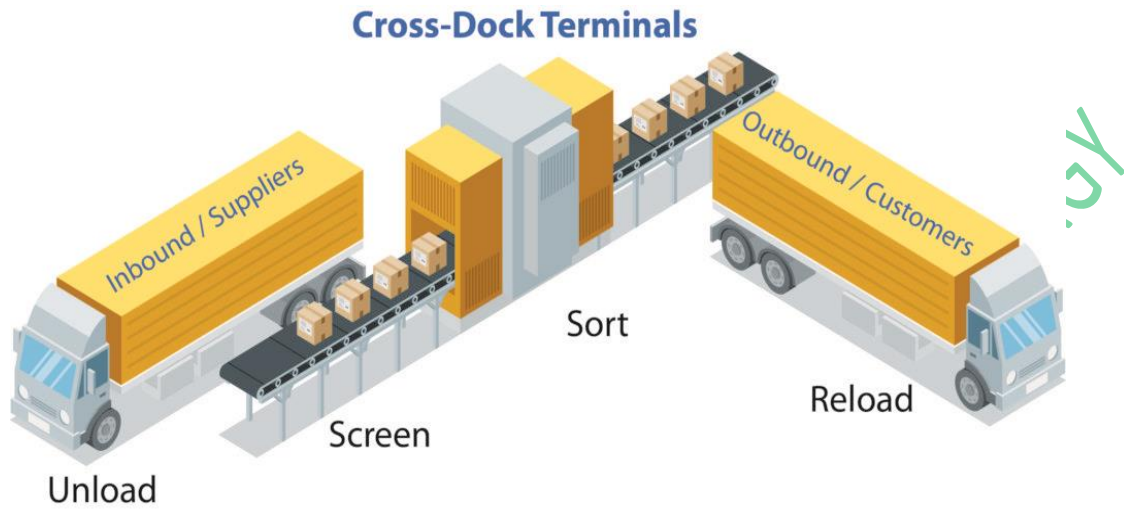
Cross-docking optimization and JIT inventory management are extremely effective and efficient tools, if they are used with discipline and cooperation between departments and external actors. The strategy will slowly but steadily increase the value provided to the customer and reduce time and cost waste. It is environmental friendly and empowers innovation through cultural and operational involvement but needs to be carefully monitored and adjusted whenever it is required. In case the transition to lean operations is not conducted appropriately, the company will face great issues and struggle in all structural levels.

## 2.11 Sustainability

The sustainability of every new adopted practice, plan or operation is essential to the success of a product, service or even a company. Innovative logistics processes can be financially, socially and environmentally sustainable, in both the short and long-term, considering that detailed research, planning and integration have been fulfilled by the teams that are responsible. Lean operations enhance cost and time efficiency in a relatively troubled traditional business structure and can develop sustainability and growth based on innovation and cutting edge techniques. The efficiency increase assists to the simultaneous increase in revenues, resulting to possible higher profit rates, which ensures the financial sustainability. Efficient transportation protocols are green and reduce not only wastes regarding the business but also wastes that pollute in a substantial extent the environment, covering the environmental sustainability. Lastly, every company that utilizes eco and socially responsible approaches into its structure is perceived in a very positive manner by the society and has the support of the community it is operating in. Big companies respect the significance of corporate sustainability and have developed a wide range of sustainable activities and initiatives which are included and discussed in separate reports, dedicated to this topic. Publishing a sustainability report, which illustrates various engaging actions in operational & cultural sense, raises the chances of ensuring social sustainability.



## 2.12 Demonstration



**Cross-Docking:** the practice in logistics management of unloading materials from an incoming trailer truck and directly loading the materials to an outbound truck with little or no storage between the transfer process. It is also allows you to combine goods from two or more different origins into one transport container with the same destination.

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## 2.13 Related website(s) / resources

[http://www.keogh1.com/news\\_publishedarticals-crossdocking.php](http://www.keogh1.com/news_publishedarticals-crossdocking.php)  
<http://link.springer.com/article/10.1007%2Fs10696-014-9201-3>  
<https://arxiv.org/pdf/1003.3775.pdf>  
<http://www.inboundlogistics.com/cms/article/enhancing-cross-docking-efficiency/>  
<https://www.thebalance.com/cross-docking-in-the-warehouse-2221394>  
[http://www.supplychain247.com/article/capitalizing\\_on\\_cross\\_docking](http://www.supplychain247.com/article/capitalizing_on_cross_docking)  
<https://hbr.org/2000/01/green-reporting>  
[www.ab.gr](http://www.ab.gr)  
<http://www.oxfordreference.com/view/10.1093/oi/authority.20110803095906713>

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