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**IMPROVEMENT OF ENVIRONMENTAL STONE  
BUSINESS**

**A CASE STUDY OF K-RAUTAPOHJA OY**

**Bachelor's Thesis**

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## ABSTRACT

<b>CENTRIA UNIVERSITY OF APPLIED SCIENCES</b>	<b>Date</b> November 2011	<b>Author</b> Ayo Oladapo
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<p>The main purpose of this thesis is to improve the environmental stone business at K-Rautapohja Oy. The main aim is to create a definite, efficient and effective supply chain, so as to improve the stone business productivity. The study was approached by interview and data collection for the development task.</p> <p>The study discovered that there is need for improvements, especially filling the customer request. A well definite value chain should be available having in mind the suppliers, transportation, warehousing and the different types of customers. Elimination of non-value added movement should be done for better productivities. By developing the supply chain phases, the success of the improvement of the stone business will be attained.</p> <p>The method used in this study is interview with the case company's vice president and the shop floor workers. The theoretical framework is based on the literature related to the field of study identifying possible solutions for maximizing the overall process to generate value.</p> <p>The thesis result offers the case company an efficient value chain and ways to improve the productivity of the stone business in the new warehouse.</p>		
<b>Key word:</b>		
Efficient and effective supply chain, elimination of non-value added movement, definite value chain, generate value, better productivities		

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## Contents

### ABSTRACT

### ACKNOWLEDGEMENT

1. INTRODUCTION .....	2
2. CASE COMPANY: RAUTAPOHJA OY .....	4
2.1. Business Areas of Rautapohja Oy .....	4
2.2. Rautapohja's stake holders and how they relate with them .....	5
2.3. How to Dialogue with stakeholders in order to Enhance Efficiency .....	8
3. Theoretical Framework .....	10
3.1. Definition and Overview of Customer Service .....	10
3.1.1. Types of Customer .....	11
3.1.2. Analysis of customers in Rautapohja Oy .....	13
3.1.3. Main difference between High and low demand customers of Rautapohja Oy .....	14
3.1.4. How to deal with the various types of customers in Rautapohja Oy .....	15
3.2. Transportation and its effects .....	16
3.2.1. Mode of Transportation .....	16
3.2.2. Transportation functionality .....	17
3.2.3. Designed options for transportation network. ....	18
3.3. Floor Space Management .....	21
3.4. Importance of floor space management .....	22
3.5. Layout .....	25
3.6. Organisation Decision making .....	28

3.6.1. The buying centre or decision-making unit .....	28
3.6.2. Definition of potential members of the buying centre.....	30
4. Cost Implication .....	33
4.1. Cost classification .....	34
5. Recommendation and conclusion.....	39
6. REFERENCES.....	40

## 1. INTRODUCTION

If efficiency involves transporting products away from where it was made, packing it somewhere else, sending it to distribution centers' somewhere else again, and then sending it to be sold in a gigantic warehouse, this kind of process has rendered ineffective many small businesses' (Parker, 2002, p 204)

We might think about the environmental costs of efficiency more carefully. Moreover, in terms of the value chain, it may seem rather unfair that the supply chain member who probably adds the most value through human interaction with the product, e.g. coffee farmers who plant, grow, pick, wash and dry the beans, typically get only a tiny percentage of the price of a cup of coffee for their effort. Indeed, some commentators argue that as inter-organization relationships became rapidly globalised, the physical and social distance between consumers and producers has widened to too large a degree: This has increasingly left customers unaware of the social and ecological cost of their purchases, be it in rainforest destruction in Brazil or growth in child labour in the sweatshop of Manila (Crane, 2000, p 13)

Marketing management practices are inextricably linked to these debates. Organizations like Traidcraft point out that business' marketing and purchasing decisions have a direct effect on people's lives. They argue that western firms have an obligation to manage their buying so as to enable better working conditions, for instance by not always insisting on the lowest price from suppliers. (Nick Ellis, 2011, p 22)

One of the major responsibilities of this thesis work is to support the case company with accurate space information on the new warehouse. The functions relate to allocation of the space areas to be used to store or keep of the environmental

stones in the warehouse that will lead to quality space management and easy accessibilities to the customers and the management as a whole. Space will be assigned based on the Rautapohja's new warehouse layout and the possibilities of easy accessibilities. (Link <http://fdo.uchc.edu>)

The main focus of this thesis is about improving the environmental stone business in Rautapohja Oy, including what helps to improve their efficiency (increasing selling time) and effectiveness (getting better result from available selling time). Both are important and require strong leadership and team work between the employers and the employees.

The chapters in this thesis provide a comprehensive introduction to the main theoretical and managerial issues in the areas of supply chain and sales. This work consists of five (5) chapters; chapter 2 content focuses on the case company, products and the marketing area in which sales are carried out. Chapter 3 consists of the theoretical framework of the supply chain activities carried out in the case company and how it should be applied to achieve the set objectives of this work. Chapter 4 stresses cost implications and how to avoid unnecessary costs. Finally, the 5<sup>th</sup> chapter gives recommendations and conclusion on the best practices that the case company should follow for the best chance of improvement of environmental stone business.

The aim of this thesis is to ramp up sales productivity of environmental stones in Rautapohja Oy, finding the point of leverage, where investment will yield best return and also ensure that time is focused on working with the right customers using a sound sales process.

## **2. CASE COMPANY: RAUTAPOHJA OY**

Rautapohja Oy is a limited liability company that was established in the year 1987 and operates in the region of Central Ostrobothnia in Finland. It has one warehouse in Ylivieska and one in Kannus. Rautapohja Oy started with store operation and operated in Ylivieska, the size of the store was around 2,000 square meters and 6000 square meters outside warehouse, but presently a new store and warehouse is completed in Ylivieska with about 15,000 square meters.

Rautapohja Oy has been expanding its operation towards sales of construction and renovation materials for companies and individuals, construction service, interior and exterior decorations. The new warehouse will serve the city of Ylivieska and its environs and it will be a channel for the company to expand. Rautapohja Oy is a major labour employer in Central Ostrobothnia, with the employee number of 36 as for now but which will increase up to 47 after the commencement of commercial activities in the new store and warehouse.

### **2.1. Business Areas of Rautapohja Oy**

Rautapohja Oy is a family owned company which has departmental warehouse that operates within the economical field of Ylivieska and Kannus. Their operation includes sales of building and construction materials, commercial and residential interior design, work tools, kitchen equipment installation and design, general contracting, industrial and retail store, real estate and Service Company. The turnover is worth €10 million in 2011. 65% of sales are business to business while the rest 35% of sales are individual.



- **Ylivieska Warehouse**

Ylivieska is the major sales outlet for Rautapohja Oy, 80% of the company activities are carried out in the Ylivieska outlet. Ylivieska is a big marketing area, because about 14,000 inhabitants live in Ylivieska and about 70,000 people live in the environs visit the shops in Ylivieska. The scope of this thesis is limited to the Ylivieska outlet.

- **Kannus Warehouse**

Kannus outlet is the minor sales outlet for Rautapohja Oy. 20% of the company's activities are carried out in Kannus outlet.

## 2.2. **Rautapohja's stake holders and how they relate with them**

- **Customers:** Rautapohja Oy warehouse is visited by many people every day through the week and month. They have hundreds of customers; a majority of them are individuals and companies. The relationship with its customers has been fruitful, because a majority of their customers have been retained and loyal. Rautapohja Oy uses different strategies to achieve this such as:
  - **Pricing strategy:** Rautapohja Oy buys goods in bulk and makes it easy for a customer to buy units in quantity they want at a very affordable price. It also offers customers discount on some products based on the nature of the product and time of the year (seasonal and festivities periods)

- **Relationship strategy:** Rautapohja Oy uses effective customer relationship to deal with its customers through employees. At any part of the store, when a customer needs help or needs an answer to some issues concerning product and its usability, the employees attends to them effectively with smiles on their faces;
- **Quality:** Rautapohja Oy ensures that the products and services offered for sales are of good standard. As a result of this a product that is broken or that will not be effective for use is moved out of the store to avoid complaints from the customers and to maintain the quality standard. They also ensure quality through auditing by internal and external bodies to maintain check and balance on its offerings;
- **Information:** Rautapohja Oy relates with its customers through different forms of media such as newspapers (Vieskanlainen newspaper, Keski Pohjanmaa) and seasonal magazines (summer, winter, spring and autumn guide) to announce bonuses, discounts or advertise to new products. Also TV and radio commercials.
- **Suppliers:** Rautapohja Oy has thousands of suppliers due to varieties of product the store has in stock for sales. The major suppliers for the environmental stones, which this thesis work is limited to, are HB-Betoni, Luja Betoni, Lavan Betoni and Majakivi.
- **Employees:** Rautapohja Oy has about 46 workers that work to improve their day to day in one shift. The workers are assigned to duty and work for the success of the company. Rautapohja Oy has successfully created an atmosphere and motivators that motivates their workers to give the best in terms of abilities and intellect.

These are- good salary, monthly leave, sick leave, maternity or paternity leave and first aid care in case of accident. Get together and other incentives are also part of the benefits that workers in Rautapohja Oy enjoy. Those facts are based on the interview conducted with Jukka Nissila.

- **Meeting:** In order to listen to the employee's observations and demands, meetings are arranged periodically between the workers and management.
  
- **Competitors:** There are few competitors in the environmental stone business in Ylivieska. Some of them are big shopping centers with environmental stone business as a part of the product range. The main competitors are Karkkainen, Prisma, Palvelumakasiini and Ojan Rauta. Rautapohja Oy maintains a healthy relationship with the competitors and conflicts are avoided.
  
- **Media:** Rautapohja Oy advertises their products and makes offers to the public via TV stations, Radio, web page, and newspapers such as Keski Pohjamaa and Vieskanlainen.

It is good to make the public aware of encourages sales, general income and about our existence in the market. (Jukka Nissila, 2012)

### 2.3. How to Dialogue with stakeholders in order to Enhance Efficiency

<b>Stakeholders</b>	<b>Interaction channel</b>	<b>Action</b>	<b>Indicator</b>
<b>Private customers</b>	Everyday customer relations	Strategising on customer service improvement	customer feedback
<b>Business customers</b>	Open discussions with customers, joint development project with customers	preparing pricing and sales channels for customers	Stake holder reputation survey
<b>Transportation customer</b>	Joint development project with customers	Working with transport companies in order to meet up with delivery schedule	Customer satisfaction survey
<b>Employees</b>	Development discussions, internal communication channel, personnel organisations, occupational health and safety	Training for employees, developing internal communications and channels for this, statutory negotiation with personnel. Holding safety at work briefing and safety discussions and inspections	Personnel surveys, stakeholders reputation survey
<b>Owners</b>	Quarterly general meeting, customers and employees meeting, liaising with the steering body	Implementing restructuring programme	Result
<b>Media</b>	Personal contacts, online communications, Publications, Advertisement	Active communication to the customers and the public in general	Media monitoring, Stakeholder reputation surveys
<b>Suppliers</b>	Competitive tendering, contracts negotiations	Setting up purchasing units and developing purchasing activities	Yield/profits efficiency, savings

Table 1: Active dialogue with stakeholders of Rautapohja Oy. (Adapted from VR 2010 annual report)

The table above shows the dialogue relationship between stakeholders of the environmental stone business in Rautapohja Oy. The dialogue system enables the parties involved about what is expected of them, brings about customer satisfaction, enhances effective communication and managerial knowhow on how to run the environmental stone business in more efficient ways with low cost. More highlights about the importance of Table 1 are spelt out in chapter 3. It analyses the key theories, principles and elements and how to apply them among others to improve sales productivity of environmental stones business.

### 3. THEORETICAL FRAMEWORK

Closely linked to marketing orientation in business markets is the notion of supply/demand chain management (S/DCM). While supply chain management tends to focus on efficient, low-cost supply, marketing looks more closely at revenues arising from the demand side of the organization. An effective marketing strategy is likely to be dependent on the distribution issues associated with supply chain management (Juttner et al, 2007). The more demanding customers become, the more companies will need to be able to adjust their supply to meet demand. In this way, firms should be able to achieve a sustainable competitive advantage if they can offer superior customer value and have a business system to support it. Thus, as Min and Mentzer (2000, p 782) argue, 'market orientation, relationship marketing and supply chain management are not separate but inextricably intertwined'

Nick Ellis (2011, p155)

#### 3.1. Definition and Overview of Customer Service

Customers are individuals, companies or groups, which receive or consume products (goods or services) and have the ability to choose between different products and suppliers. Customers play the most significant role in business. In fact customers are the actual bosses in a deal and are responsible for the actual profit for the organization. The customer is the one who uses the products and services and judges the quality of those products and services. Hence it is important for an organization to retain customers, make new customers and accommodate customer requirement in a cost effective manner so as to attain the primary value of supply chain and flourish the business. (<http://www.managementstudyguide.com>)

A customer service program must identify and prioritize all activities required to accommodate customer' logistical requirements as well as, or better than, competitors. In establishing a customer service program, it is imperative to identify clear standards of performance for each of the activities and measurements relative to those standards. In a basic customer service programs, the focus is typically on the operational aspects of logistics and ensuring that the organization is capable of providing the seven rights to its customer: the *right* amount of the *right* product at the *right* time at the *right* place in the *right* condition at the *right* price with the *right* information. (Donald J, David J & Bixby M, 2002, p 73)

### 3.1.1. Types of Customer

Every retail industry constantly faces the issue of trying to find new customers. Most of them make sure that advertisement, displays and pricing all stand out to attract new customers. The search for new customers is certainly prudent and necessary, but it can turn out to be a hurting move. Retailers focus on the best current customers because they are seen to be an on-going opportunity for their business. For better understanding of the rationale behind this theory, a need for customer breakdown is needed to face the challenges of building loyalty.

The classification of customers is as follows:

**Loyal Customers:** These are the customers who can and should influence the buying and merchandising decisions. They are the types of customers that need communication with on regular basis, via any means of communication. Nothing will make a loyal customer feel better than soliciting their input and showing them how much they are valued. The satisfaction they derived from goods or services rendered to them brings about recommendation to others. (<http://sbinfocanada.about.com>)

**Discount customers:** This category of customers helps turning of the inventory over and as a result, it is a key contribution to cash flow. This same group, however, can often wind up costing the organization money because they are more inclined to return product. (<http://sbinfocanada.about.com>)

**Impulse Customers:** This is exciting than assisting an impulsive shopper and they respond favorably to recommendations. Most retailers want to target their displays towards this group because they provide a significant amount of customer insight and knowledge. (<http://sbinfocanada.about.com>)

**Need-Based Customers:** These are need driving customers. They buy for a variety of reasons such as a specific occasion, a specific need, or absolute price point. They are difficult to be satisfied, if they are well taken care of they can turn out to be loyal customers at the end. (<http://sbinfocanada.about.com>)

**Wandering customers:** This category of customers constitutes the largest segment in terms of traffic, while they make up the smaller percentage of sales. Thou they may not represent a large percentage of immediate sales; they are a real voice for the retailer in the community. Many wanderers shop merely for the experience and interaction it provides them.

(<http://sbinfocanada.about.com>)



### 3.1.2. Analysis of customers in Rautapohja Oy

Customer orientation and analysis is a must for the case company, because the focus of the company is on customer satisfaction. That is why the case company must know and understand the different types of customers they have and how to deal with them all in order to improve the company's productivity and efficiency in all ramification of their sales product. The classifications of customer in these contexts are based on their buying powers according to the information gathered from the case company. (Jukka Nissila, 2012)

**High demand Customer:** These types of customers are less in number but promote more sales and profit as compared to the other customers, as they buy in large quantities, get environmental stones delivered at once and they are satisfied. These customers revisit the organization frequently. Hence it is crucial to interact and keep in touch with them on a regular basis and invest much time and effort on them. These types of customers want individual attention and that demands a polite and respectful response. The construction companies are the group which falls in this category from Rautapohjas' customer point of view. (<http://www.managementstudyguide.com>)

**Medium Demand Customers:** These are the second category of buyers or customers; they buy environmental stones in bulk or medium sizes at most times, but not as much as the first category. They often revisit the organisation. Their stone buying capacity makes it easier to arrange transportation from the warehouse to the point of delivery. They promote sales and encourage profits to the organization compared to the least form of customer. It takes little time and less effort to execute sales by the salesperson. (<http://www.managementstudyguide.com>)

**Low Demand Customers:** These are the least profitable and time consuming customers, sometimes they themselves are not sure of what to buy. These customers are normally new in the industry and at most times visit the warehouse only for confirming their needs on products (stone). Handling these customers is challenging as they are particularly looking for a stone and want all the stones in the warehouse to be displayed to them. They are the need-based customers who don't buy all the time. They need to be properly informed about the various usability of all the stones, but do not buy or show the least interest in buying. (<http://www.managementstudyguide.com>)

### 3.1.3. Main difference between High and low demand customers of Rautapohja Oy.

Aspect	High/ Medium demand customers	Low demand customers
<i>Buying objective</i>	Enable production	Personal need satisfaction
<i>Buying motive</i>	Mainly rational	Also emotional
<i>Purchasing function</i>	Professional buying, predominantly men	Consumer, mainly men and women
<i>Decision making</i>	Many persons involved, much decision	Often impulsive without consulting others
<i>Characteristics</i>	Often without negotiation, little interaction	Negotiations, intense interaction

<i>Production and market knowledge</i>	Large	Limited
<i>Order size</i>	Often Large	Mostly small
<i>Demand</i>	Derived demand may fluctuate strongly	Autonomous demand, relatively stable
<i>Price elasticity</i>	Rather inelastic	Rather elastic
<i>Number of customers</i>	Mostly limited	Very large
<i>Spread of customers</i>	Sometimes large geographical concentration	Large geographical spread

Table 3: describes the differences between consumers of environmental stones in Rautapohja Oy, (adapted from Arjan J, 2010, p 23)

Table 3 above is used to group, describe and specify the types of customers Rautapohja Oy deals with in terms of sales of environmental stone as interviewed by the Jukka Nissila. The grouping in table 3 gives the insight for customer into the case company and how to transact with them, which are further explained in chapter, 3.1.4 below.

#### 3.1.4. **How to deal with the various types of customers in Rautapohja Oy**

The management should use this understanding from the analysis in Chapter 3.1.1 and table 3 to turn low demand customers to high demand costumers; it will help to grow the environmental stone business. Also the management of the case company must ensure that the high demand customers have a positive experience each time they deal with them; this will serve to increase the company's bottom-line sales.

Focus should be on high demand and medium demand customers, because from the analysis of the different types of customers highlighted in table 3, above these two types of customers consume less time, buy in high density and the transportation option and cost are ideal and well spelled out in the negotiation. Multiple product range should be in place to leverage the low demand customers. Also strategies such as discount sales, bulk purchase discounts, transportation discounts should be innovated and enhanced for turning out these customers to satisfy their needs.

### **3.2. Transportation and its effects**

Transportation refers to the movement of product from one location to another as it makes it ways from the beginning of supply chain to the customer. Transportation is an important supply chain driver because products are rarely produced and consumed in same location. It is a significant component of the cost incurred by most supply chain. (Sunil Chopra & Peter Meindl, 2010, p 380)

#### **3.2.1. Mode of Transportation**

There are several transportation structures, ranging from rail, road, water, air, and pipeline, but also there is intermodal transportation. It uses more than one mode of transportation to move a shipment to its destination e.g. air-road, water-rail, road-rail, etc. Road transportation is customary in this case because other modes of transportation require intermodal transportation which is more costly.

### 3.2.2. **Transportation functionality**

Knowing that transportation is the operational area of logistics that geographically moves and positions inventory. Transportation has received considerable managerial attention because of its visible cost and fundamental importance in every organization. Almost all enterprises, big and small, have managers saddle with the responsibilities for transportation. (Donald J, David J & Bixby M, 2002, p 41)

Transportation requirements can be satisfied in three basic ways. First, a private fleet of equipment may be operated. Second, contracts may be arranged with dedicated transportation specialists. Third, an enterprise may engage the services on a per shipment basis. Three factors are fundamental to transportation performance from the logistical system point of view: (1) cost. (2) Speed, and (3) consistency. (Donald J, David J & Bixby M, 2002, p 41)

**Cost:** The payment for shipment between two geographical locations and expenses related to maintaining in-transit inventory is the cost of transportation. Transportation that minimizes total system cost should be adopted by a logistical system. This may mean that the least expensive method of transportation may not result in the lowest total cost of logistics. (Donald J, David J & Bixby M, 2002, p 41)

**Speed:** Time required to complete a specific movement is the speed of transportation. Speed and cost of transportation are related in two ways. First, transportation firms, capable of offering faster service, typically charge higher rates of transportation. Second, the faster the transportation, the shorter the time interval during which inventory is in-transit and unavailable. Thus, a critical aspect of selecting the most desirable method of transportation is to balance speed and cost of service. (Donald J, David J & Bixby M, 2002, p 41)

**Consistency:** Variations in time required to perform a specific movement over a number of shipments is the consistency of transportation. It reflects the dependability of transportation. Consistency has been identified as the most important attribute of quality transportation over the years by transportation managers. If the shipment between two locations takes 3 days one time and 6 days the next, the unexpected variances can create serious supply chain operational problems. When transportation lacks consistency, inventory safety stocks are required to protect service breakdown, impacting both the seller's and buyers overall commitment. Speed and consistency combines to create the quality aspect of transportation. (Donald J, David J & Bixby M, 2002, p 41)

### 3.2.3. **Designed options for transportation network**

The design of a transportation network affects the performance of a supply chain by establishing the infrastructure within which operational transportation decisions regarding scheduling and routing made. The two main transportation network acquired by the company case study are the direct shipment and Shipment via warehouse. Transportation function constitutes 30% of the price of the product (stone). (Sunil Chopra & Peter Meindl, 2010, p 389)

- **Direct Shipment**

With this type of shipment network option is structured so that all the product (stone) shipments come directly from the supplier to each buyer's location. The routing of each shipment of each shipment is specified and the supply chain manager only needs to decide on the quantity to ship, it encourages trade-off between transportation and inventory cost. The major advantage of direct shipment transportation network is the elimination of immediate warehouse and its simplicity of operation and coordination. (Sunil Chopra & Peter Meindl, 2010, p 389)

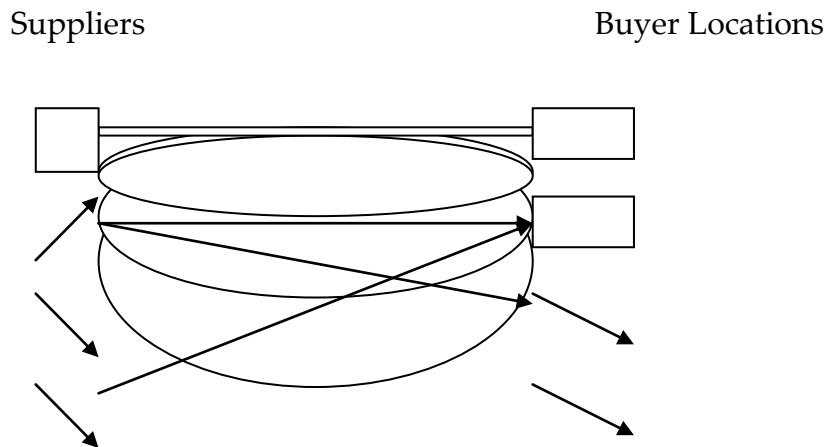


Figure 1: Direct shipment network (adapted from Sunil Chopra & Peter Meindl, 2010, p 389)

Direct shipment as shown in figure 1 is the feasible network shipment for high demand customers, because the demand for stones at the buyer location is large enough for optimal replenishment lot size to be close to Truckload from supplier to each location.

- **Shipment via warehouse**

Under this transportation option, suppliers do not send shipment directly to the buyer locations. The shipment is sent to the warehouse and from the warehouse the shipment is forward to buyer location. The warehouse is an extra layer between the suppliers and buyer locations and plays two different roles in this case study. One role is as store inventory and the other role is to serve as a point of purchasing for the medium demand and low demand customers in the region who are not buying at a truckload. The presence of warehouse allows a supply chain to achieve economies of scale for inbound transportation to a point customer wants the products.

(Sunil Chopra & Peter Meindl, 2010, p 390)

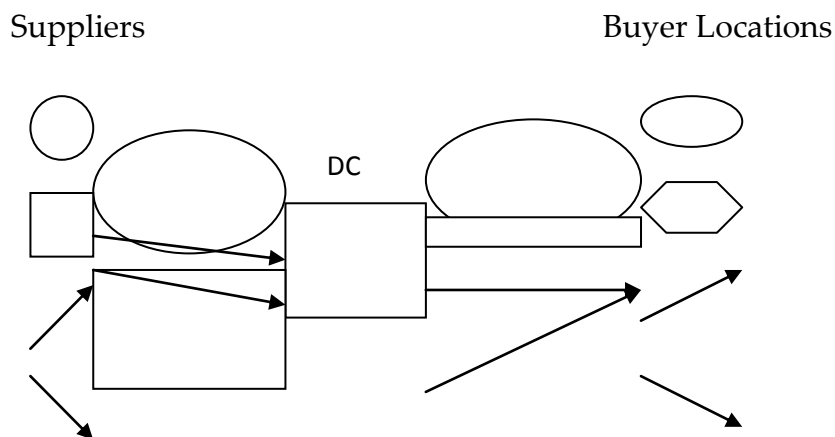


Figure 2: All shipment via warehouse (Sunil Chopra & Peter Meindl, 2010, p 391)

Shipment via DC as shown in Figure 2 is a justified network shipment for both medium and low demand customers as classified in Table 3. The DC represents case company's warehouse. The replenishment of lots by the buyer determines the economies of scales on outbound. The low demand customers buy in small quantities there by making transportation more costly because the shipper in a supply chain network needs to take into account the cost of coordinating the operation, the inventory cost, facility cost, processing cost as well as the level of responsiveness provided to customers.

- **Transportation Functionalities in Rautapohja Oy**

The management presently has agreement with a private flight carrier, which delivers the environmental stones from the producer to the end user or warehouse, depending on the types of order and customers involved. This arrangement is due to mutual benefits between the two parties, trust and cost consideration for the shipment. Transportation cost of environmental stones from the manufacturer constitutes about 40% of the product cost (environmental stone) offer for sale at the warehouse by the management (Jukka Nissila 2012). This turns to be a significant percent in the overall price of the environmental stone. There is no certainty that the



percentage of the cost on shipment could be reduced due to the location of the Manufacturers and transportation means (road).

Strategically, other activities that will sum up with further product cost (e.g. labour, time, inventory and overhead cost) could be eliminated or reduced if the management can use the knowledge of the theory of customers in chapter 3.1.1 to turn the low demand customers in to the high/ medium demand customers. Achieving this aim will bring about a large order from customers and there by encourage direct shipment, which does not encourage further activities on the environmental stones in the warehouse.

Another possibility to avoid further costs is by eliminating low demand customers from the environmental stone market, but this can course adverse effects on sales of other products the management have in stock for sale and also encourage competitors to take advantage of this set of customers. The low demand customers often are willing to buy other products in store.

### **3.3. Floor Space Management**

To deliver real business value, organizations don't just count space; they make every space count by managing every space in the building, warehouse or workshop in their portfolio without leaving their computer. A well designed floor space management gives facility professionals, departmental liaisons, employees and executive management a complete visibility into space and occupancy. The floor space management helps to keep real time information in one centralized location, no matter how large the warehouse or workshop could be. By this act every space can be made count.

### 3.4. Importance of floor space management

The prime objective of floor space management is to facilitate the operations of the organization. Proper allocation of floor space shows investment and enhances good land use for marketing purpose and other operations in the warehouse. In practice, because the floor space is an immovable object, the commodity that is traded on it is not the floor space itself but rather, a set of abstracts which when properly allocated are assigned to the floor space and reduce non value added movements.

- **Gross Area and its measurement**

The total sum of entire areas on all floors of a building included within the outside faces of its exterior walls, it comprises floor penetration areas, thou insignificant, for circulation and shaft areas that connect the floor to one another.

(<http://fdo.uchc.edu>)

- ❖ **Basis for measuring Gross area**

The computation of gross area is either by physical or scaling measurement from the outside faces of exterior walls, disregarding cornices, pilasters, buttresses, and so on, which goes beyond the wall faces. Areas excluded are those having less than six-foot, six-inch clear ceiling certain criteria of a separate structures are met.

Measured in terms of gross square feet (GSF)

Gross Area = Net Usable area + Structural space (<http://fdo.uchc.edu>)

- ❖ **Description of Gross Area**

Adding to all the internal floored spaces that has been covered in the former statements, if it is included in the warehouse layout, gross area must include the

following: Garage, excavated basement areas, mezzanines, enclosed porches, inner or outer balconies whether walled or not, if they are utilized for operational functions, also corridor if they are walled or not, so far they are used within the outside face line of the building to the extent of the roof drip line, penthouses, and attics. The stairways, elevator shafts, and ducts (e.g. of building infrastructure) are to be counted as gross area on each floor through which they pass. (<http://fdo.uchc.edu>)

#### ❖ **Limitations of Gross area**

The following areas or places are excluded or limited to be calculated as gross area, places such as parking lot, courts, portion of upper floors eliminated by rooms or lobbies that rise above the single-floor ceiling height. (<http://fdo.uchc.edu>)

#### • **Assignable area (Net Assignable square feet- NASF)**

The assignable area comprises the sum of entire areas on the floor of a building assigned to, or available for assignment to, an occupant or specific use. This is relevant in terms of the thesis, but in this case, it has to do with the sum of outside areas that will be assigned to the storage of keeping the stones for display and buying purpose to the customers.

#### ❖ **Basis for measuring assignable areas**

The computations of assignable areas are done by scaling or physical measurement from the inside face of surface that form the boundaries of the designated areas. Areas that are excluded in this portion are places less than six-foot, six-inch clear ceiling height unless the criteria of a separate structure are met.

Measured in terms of assignable square feet (ASF)

Assignable area= sum of area designated by the three assignable major places for keeping the stones. (<http://fdo.uchc.edu>)

#### ❖ **Description of assignable areas**

This includes the spaces subdivided into three major categories for assignable space to keep the stones for storage and display. They are to be used to accomplish the case company mission. (<http://fdo.uchc.edu>)

#### ❖ **Limitation of assignable area**

Areas specified in the layout for building, vehicle movements, parking lots and structural should not be included. (<http://fdo.uchc.edu>)

#### • **Floor space management in Rautapohja Oy.**

The case company former warehouse floor space for environmental stone was without a specific management. Environmental stones were arranged without any form which makes it not centralized and not easy for both the customers and the employee to access. Management of Rautapohja Oy should emulate the theoretical principles of floor space management in the new warehouse to enhance the effectiveness and efficiency of sales productivities for the environmental stone.

A well assigned floor space for environmental stones should be spelled out in the layout of the new warehouse, and the floor space should be positioned in a strategic place that will enhance marketability and accessibility for the customers. It will be beneficial to the case company, because it will eliminate overhead costs, which are

not taken cognizance of presently in the organization and non value added movement embarked on by the employees, which is the aim and objectives of the thesis.

### **3.5. Layout**

An efficient layout on the marketing organization influences smooth and efficient productivity. Operating efficiencies, such as economies in the cost of handling material, minimize productivity delays and enable avoidance of bottleneck all depending on a proper layout.

An ideally laid out plan brings about reduction on some important productivity activities. It reduces manufacturing cost through reduced material handling, reduced personnel and equipment requirement and reduced process inventory. (<http://citeman.com>)

- **Components of layout in case company.**

The warehouse of Rautapohja Oy should no longer be a repository of inventory that comes to rest. Hopefully, inventory of environmental stones should be turned out more and expansion of shipment should be made with fewer inventories. Therefore, the whole logic of former design should be changed to suit the improvement. The former warehouse had large storage areas and small assembly areas for shipment. Now, the new warehouse needs larger assembly areas for the shipment and smaller storage areas, large picking areas, more picking slots, less backup inventory and less employees' attention for the processes. The design layout design effort should be really a balance between the right amount of space, labor, and time alongside an understanding of strategy, location and all other business information, which are the components of the new layout in Rautapohja Oy. (<http://www.freeseinc.com>)

- **Objectives of proper layout in Rautapohja Oy**

The objectives of an ideal layout for a Marketing organization like Rautapohja Oy are outlined below; these objectives are to bring about efficiency in the productivities of the organization. (<http://citeman.com>)

**Effective use of available area:** In the new warehouse of Rautapohja Oy, every inch of the plant area is valuable. Therefore effort should be made to make use of the available area by planning the layout properly. Some steps for achieving this end are: location of equipment and services in order that they may perform multiple functions; positioning of marketable commodities at point where customers can easily locate them in the warehouse; development of up-to-date work areas and operator job assignments for a full utilization of the labour force. (<http://citeman.com>)

**Better production control:** Providing the customers the right type of product, at right time and at a reasonable cost is concerned with production efficiency. A good plant layout is a requisite to exhibit good production efficiency and provides the Rautapohja Oy management with a systematic basis upon to build organization and procedures. (<http://citeman.com>)

**Economies in Handling:** Material handling in most cases accounted for nearly 30% to 40% of the production cost. Every effort should, therefore, be made to cut down on this cost. Long distances and repetitive movement should be avoided and non specific handling operations must be eliminated. A cynic may say that the cheapest way to handle materials is not to handle them at all. But, in the warehouse, material, commodity for sales has to be handled; and therefore, it all depends on the layout. (<http://citeman.com>)

**Better supervision:** A good plant layout is the first step to good supervision. A good plant layout ensures better supervision in two ways:

- ✓ Determining the number of workers to be handled by a supervisor and
- ✓ Enables the supervisor or the management to get a full view of the entire warehouse at a glance. (<http://citeman.com>)

**Improved Employee Morale:** Morale of the employee is achieved when workers are cheerful and confident. The success of Rautapohja Oy depends on the workers mental state of mental condition.

Morale depends on:

- ✓ Better Employee facilities;
- ✓ Reduced number of accident;
- ✓ Increased earnings;
- ✓ Better working condition.

**Minimum Equipment investment:** Minimum handling distance and investment on equipment can be minimized, by proper allocation, positioning and location. A good plant layout provides all these advantages. (<http://citeman.com>)

- **Plant Layout in Rautapohja Oy.**

In practice, in the former warehouse, the layout was not well defined; this act leads to irregular sales activities which bring about non value added movements, time consumption, multiple handling and changes in stones location. This invariably leads to more cost in the sales activities of environmental stones. Plant layout of Rautapohja Oy should be in accordance as highlighted in chapter 3.5, among others to have bearing on morale of the employee, so as to bring about less time to move environmental stones, less handling, less labor and less cost. A well planned layout

avoids frequent changes which are difficult and costly. The incorporation of flexibility elements in the layout would help in the avoidance of revisions.

### **3.6. Organisation Decision making**

An organization has to make decisions about what to buy, how to buy and when to buy. These includes in terms of both people thought to be involved and the processes by which decisions are believed to be made. Some marketing scholars have developed quite sophisticated models for these activities, scholars like Hill (1972), Sheth (1973), Johnston and Bonoma (1981). The desirable known of these, and the frameworks that appears to have deem it fit for years in managerial imaginations, are the intuitively attractive ideas of the buying centre and the buy grid, which owe much to work of Webster and wind (1972) and Robinson et al (1967). (Nick Ellis, 2011, p 47)

#### **3.6.1. The buying centre or decision-making unit**

Business to business buying processes typically involves more people than business to customer purchases, in what is called the buying centre or decision-making units. The important members of this group can include managers that are not directly involved in using the goods or material purchased, but who have either financial perspective or strategic knowledge of the organization as a whole. There are sometimes large numbers of people involved in the business purchasing decision, both from inside and outside of the business organization, in some cases rendering the purchasing department less significant role than expected. (Nick Ellis, 2011, p 47)

It is important for a selling or marketing firm to understand the composition of the buying centre/DMU, whose members can be drawn from all functional areas of the



customer firm, including purchasing, operation research and development, finance and even marketing (for instance, when the buying firm needs to ensure that what goes into their products is going to be valued by their own downstream customers) (Nick Ellis, 2011, p 48)

Initiators	Buyer (Purchaser)
Influencers	Decision makers
Users	Gatekeepers

Table 2: Potential members of the buying centre/DMU (adapted from Nick Ellis, 2011, p 47)

The table above gives the buying processes in B2B organization, which typically involves more people than B2C purchases. B2B buying processes are complex in terms of decision making and the members involved. This eventually leads to best purchases and customers satisfaction because the right or best decision of buying will be agreed upon. The case company should emulate this act not only for the environmental stone business, but also for all other products in the warehouse that contribute a significant income for the company.

### 3.6.2. Definition of potential members of the buying centre.

- **Initiators** are those who propel the buying process by making the first request for the purchase of environment stones. The role of the initiator is taken by one of the other members of the DMU listed above.
- **Influencers** affect the decision-making by means of solicited or unsolicited advice. They can be internal or external to the client firm.
- **Decision-makers** are the professionals who actually give authority to approve purchase. In complex purchases this is likely to be a senior manager. In other case the decision-maker is the person who controls the budget.
- **Users** are people who will consume the product or service, either on an individual basis or in a group context. The role of users can be continuous, especially in providing feedback on the consumption of the product or services.
- **Gatekeepers** are people who control the flow of information from the suppliers towards the other members of the DMU (and vice versa). In other cases the buyer is the gatekeeper, who has the power to decide whether or not to circulate specific supplier documentation within the organization.

	User	Influencer	Buyer	Decider	Gatekeeper
<i>Identification of need</i>	×	×			
<i>Establishing specification and scheduling the purchase</i>	×	×	×	×	
<i>Identifying buying alternative</i>	×	×	×		×
<i>Evaluating alternative buying actions</i>	×	×	×		
<i>Selecting the suppliers</i>	×	×	×	×	

Source: Webster and Wind (1972)

Table 3: Decision stages and role in the decision-making unit (adapted from Arjan J. 2010, p 28)

The table above relates the distinguished roles within the DMU to the various phases of the purchasing process. It can be seen that the importance of individual roles can differ, depending on which phase the purchasing process is in.

- **Buying centre or decision making in Rautapohja Oy**

In practice, presently the decision of buying of environmental stones in Rautapohja Oy is made by one man. He oversees the planning of environmental stone business. He is responsible for ordering of the environmental stones and makes it available in the warehouse or to customer's location when needed. A one man buying decision cannot satisfy the needs of the different type of customers highlighted in chapter 3.1.2. Other key stake holders of the business should be involved in the decision making, because the management of the case company is involved in both B2B and B2C marketing.

The one man decision making system works for the management of the case company, but in order to ensure efficiency and quality of service render to customers, it is very important for the management to understand and put into practice the composition of the theoretical framework of a buying centre/DMU which consists of members of all functional areas of customer firm, including purchasing, operations R&D, finance, and even marketing. It helps to ensure that what goes into the product is going to be valued by their downstream customers' thereby encouraging profitability of the business. This process can be applicable to other products sold, which brings significant income in Rautapohja Oy, not only in the sales of environmental stones.

#### 4. COST IMPLICATION

A cost in its widest meaning, is an amount of expenditure on a defined activity. The word 'cost' needs other words added to it, to give it a specific meaning. The cost of an item of input or output may be analyzed in terms of two measurements;

- A physical quantity measurement multiplied by
- A price measurement.

The breakdown of cost into physical quantity and price is frequently essential for the application of management account method in organizations, where the physical flow of inputs and outputs may sometimes be recorded separately from the unit price. (Paulina Weetman, 2010, p33)

For obtaining goods or service that will be used for the profitability of the business in achieving its overall objectives, costs are incurred. Before now, traditional costing methods were established from time of industrial revolution onwards in the context of large manufacturing organizations. This type of industrial setup engaged in heavy manufacturing activities, thereby exploiting huge amounts of investment in machinery and large numbers of labor. (Catherine Gowthorpe, 2005, p 339)

Meanwhile in the present industrial setups, things have changed radically. Efficient methods of production have been introduced among others to reduce the element of labour required in production and using them more efficiently. The labour involved is not physical but mental.

Moreover, costs are incurred in different ways. For physical transformation work, such as steel works, the principal cost involved in such a process are costs of raw material, the depreciation charges for the physical assets consumed and the cost of

employing people to do the work. In contrast, the advertising agency is about transformation of mental processes and ideas. A team of creative people work together to produce ideas. (Catherine Gowthorpe, 2005, p 339)

The more successful of the ideas will gain a kind of physical form in due course when people are aware of these from the newspaper or television advertisements. The physical transformation of the ideas is likely to be done by other firms and individuals outside the agency. The advertisement agency itself is primarily a medium for generation and transmission of ideas. The labour involved is mental, but not physical. The principal costs involved in running an agency are the costs of paying staff salaries and benefits and providing them with computers and other communication gadgets. There are some costs consumed as a result of physical assets, but this is relatively insignificant in knowledge business such as an advertisement agency. (Catherine Gowthorpe, 2005, p 339)

#### **4.1. Cost classification**

Cost classification systems in practice are as varied as the businesses they serve. In previous chapters of this thesis work the operation functions of the case company are described as: Marketing and sales. Meanwhile, marketing and sales has to do with the process of planning, decision making and control. For purpose of classification, it is convenient to take planning and control as a combined function because the classification required by each are similar. For decision making, particular care has to be taken to use classification of cost which are relevant to the decision under consideration. (Paulina Weetman, 2010, p33). Costs are classified according to how significant they are. In a manufacturing environment there are three basic components of cost:

Material Cost

Labour cost

Production overheads

Materials and labour cost are both directly incurred into the manufacturing process. Production overheads are indirect incurred. They are costs incurred while running a production facility but which are not themselves identified with individual items produced. These costs are often classified as direct (direct materials, labour and any other direct expenses) and indirect (costs that are not directly incurred as a result of producing any products, but are consumed during the cause of producing that product, overheads) (Catherine Gowthorpe, 2005, p 340)

In the case of this thesis work, cost classification will take a different form, because the case company is not the one manufacturing the environmental stones. They serve as major marketers for these products; therefore another form of cost classification is by

Period costs

Product costs

Overheads costs

**Period cost:** These are the costs that are incurred in the period of account, for example, salaries of sales and marketing personnel. (Catherine Gowthorpe, 2005, p 340)

**Product cost:** These are those cost related to production of goods or services for sale by the business. Product cost includes direct and indirect costs. The total of costs is described as the prime cost of production. (Catherine Gowthorpe, 2005, p 340).

**Statement of product cost**

	€	€
Direct Materials		xxx
Direct Labour		xxx
Other direct costs		xxx
<b>Prime cost</b>		
Indirect Materials	xxx	
Indirect labour	xxx	
Other indirect costs	xxx	
<b>Production overhead</b>		xxx
<b>Total Production cost</b>		xxx

Table 4: Breakdown of Product cost (adapted from Pauline Weetman 2010, p 41)

The concept of cost in the manufacturing industry requires costing and accounting techniques more than the marketing and sales industries. In the manufacturing industries costs are apportioned according to the value added to the product at each stage of production. Marketing and sales is the role Rautapohja Oy plays in selling the environmental stones to the customers. The product cost of the environmental stones includes cost of the stones from manufacturer and the cost of transportation to customer site or to the warehouse, which was briefly discussed in chapter 3.

**Overheads:** There are many types of overheads costs; they all consist of indirect costs. Indirect production costs include all those costs of running the production facilities that cannot be directly identified with the units of production. They are cost of:

- ✓ warehouse rental
- ✓ Marketing supervisors wages
- ✓ Maintenance and repair of warehouse and machinery

Other overhead costs also include costs incurred in running the warehouse facility, there are many other costs involved in running a business, for example



- ✓ Administrative salary
- ✓ Depreciation of office computer
- ✓ Salesperson's salaries
- ✓ Cost of Heating
- ✓ Electricity bills
- ✓ Moving of stones from main storage to the sales point

In Table 4, the costs (direct and indirect) incurred in producing a product are analyzed. The marketing and sales of the environmental stone do not add any value to the stones, but only make sales to generate profits. Therefore the direct costs listed in table are not incurred by the case company in the sales of the environmental stone.

- **Cost of marketing and sales of Environmental stones in Rautapohja Oy**

Cost allocation to the case company for this thesis work on sales of environmental stones will be based on recommendations. In order to run the environmental stone business effectively and efficiently, time for rendering sales services and irrelevant costs must be avoided. Indirect costs are incurred in the marketing and sales of the environmental stones by the case company. The only significant indirect cost which is relevant for making sales in the stone business is the transportation cost because the stones are not consumed where they are produced. Other costs are: inventory, sales person's salary, warehouse rental, heating and electricity.

The management has to take cognizance in order to avoid extra costs in the sales of the stones. Electricity and heating costs has no relevancy in the stone business. The stones do not need heating of any form or any electricity but this are consumed as a result of the warehouse operation in which the costs are spread over all products sold in the company to run the business.

Chapter 3 noted the key elements of the stone business, spelled out the theories behind the elements and also analyzed how the case company can apply these theories to generate effective results to improve the stone business. Conversion of low demand customers to high demand customers will reduce time spent in making transaction for sales of stones, because customers will buy in high quantity making transportation arrangements easier and inventory of the stones will not be accumulated.

A suitable assignable area for display and sales of the environmental stones should be at a strategic place on the layout of the warehouse. This will encourage easy accessibility, for both customers and employees. This act will discourage non value added movement of stones from one point to the other in the warehouse which incurs cost.

## 5. RECOMMENDATION AND CONCLUSION

The aim of this thesis is to improve environmental stones business in Rautapohja Oy. This can be a reality if the case company can be effective. Meanwhile, effectiveness is based on insight and understanding of prospects. The management of Rautapohja Oy should therefore take cognizance of process improvement and tools that will help its business to understand best sales practices and its industry main points. The theory gives a useful guideline on how to organize the sales process to bring about improvement of the environmental stone business and they involve: dealing with various customers, managing transportation for the supplies of stones, managing floor space for suitable marketing and sales of the environmental stone, proper decision of buying to suit market demand and avoiding unnecessary costs incur at the expense of the marketing and sales of the environmental stones.

According to the interview carried out on the sales of environmental stone business in the case company, the management of Rautapohja Oy should use the information provided to improve the efficiency and effectiveness of the business. They should also convert the low demand customers to high demand customers; this will go a long way to avoiding all unnecessary costs and time spent to serve these types of customers.

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