**Analyzing a logistics process of a mobile firm & improvement suggestion.**

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**Abstract:**

This report gives an exclusive insights into the analysis of a logistics process of a mobile firm, analyzing the different aspects that must be understood before lunching the brand into the worldwide market such as the (manufacturing location, manufacturing resources (materials, labor, power), costs (staff salaries, materials cost, transportation costs, inventory cost), (targeted customers, competitors), and deciding on the best aligned and stable strategy to achieve the most possible profit.

**Introduction:**

when manufacturing a product, the manufacturer must take into consideration a list of Challenges: manufacturing location, manufacturing resources (materials, labor, power), costs (staff salaries, materials cost, transportation costs), targeted customers, competitors.

in Turkey, we came across a lot of products in supermarkets every day, for example, some sweets or cleaning products, but these low-cost products have a small supply chain plan because they are used in large quantities, they can be manufactured locally, and the targeted customers are the locals, (even though some of the manufacturing materials are imported like chocolate pods that are then manufactured into different kinds of sweets, but there supply chain plan is considered simple in comparison to our example in this report).

let us consider a more complicated product: TOYOTA cars. originally, TOYOTA cars were manufactured in Japan, but since the company's product became global, transportation and labor became a problem for achieving maximum profit, so the company started manufacturing in different parts of the world, mostly focusing on the countries that have cheap labor such as (Brazil, Colombia, Indonesia, and a lot of other countries, some of which don't have cheap labor in comparison to other countries but that is because the company is global and it is well known from customers, the second reason might be transportation costs).

let us consider a product that is similar to our example in this report: iPhone.

even though iPhone is in sixth place in the top 10 china’s most popular smartphone brands list, all iPhones around the world are manufactured in china even the ones used in America, Europe, the middle east, and Australia, why so?

for 2 main reasons:

* **cheap labor:**

the minimum wage in China is 0.94$ hourly, in the USA it is 7.25$ hourly.

so, china has 87% less hourly cost per worker than the USA.

but the minimum wage in Bangladesh is 0.09$ hourly which is 98% less the USA!

so why not manufacture iPhones there? (The answer to this question is the second reason.)

* **manufacturing efficiency and quality:**

after the second world war, China started to become one of the most advanced countries in the world, with the capability of manufacturing any product in large quantities and with high quality in a short period of time, while Bangladesh is incapable of doing so. that is why China is best suited for this kind of product that has a huge demand because of its popularity around the world.

Currently our brand is not competing as the company want so we want to analyze the logistics of our firm and suggest improvements that would help us put the brand name in the competition.

**Logistic Analyzation.**

**Manufacturing Location** is important and there are few characteristics we must take into consideration when searching for the most profitable manufacturing location, cost of labor, cost of transporting goods, quality, and efficiency, the Manufacturing Location is the last thing to be determined, after analyzing all the different aspects of making a product.

**Manufacturing Resources** there are a variety of sorts of product, some product requires a huge amount of resources that can only be found in some parts of the world, these products have relatively simple manufacturing procedures, so it is better to manufacture them locally, to cut down on transportation cost. but not like our case where our resources are easy to transport but also require high-tech equipment’s such as phones or motherboards, the high-tech equipment is expensive, **o**ur product can be shipped easily and does not require big amounts of any special resource, however, it requires high-tech equipment to achieve the desired level of quality and this equipment can only be found in China, South Korea, USA, and some other advanced parts of the world, so, what we are aiming for are the companies that own this high-tech equipment but also can provide cheap labor to minimize our cost.

**Our Costs are divided into four main criteria’s that we want to improve.**

1. **Labor:**

there are a lot of countries that have a very low minimum wage, such as Afghanistan, or Azerbaijan, or Georgia with roughly 0.3$ hourly labor cost, but these countries do not have the required technology to manufacture complicated products like phones or motherboards, a lot of other countries can provide the required technology to manufacture complicated products, but they have high minimum wages, such as the USA or Europe, with roughly 10$ hourly labor cost, there is one country that can combine both characteristics which is China, with 0.94$ hourly labor cost and the advanced technology.

1. **Materials and Manufacturing:**

different product requires different materials to manufacture, for example, an average car is 1302 kg of materials mainly steel, and steel is around 200$ per ton, but usually, cars prices are way more than that because of labor and transportation, and the use of different materials other than steel like brass or aluminum, in our case the main cost is not going to be the materials, even though circuit boards need gold and other precious metals to be manufactured but in very small amounts, the main cost will be the manufacturing process and labor which relies on the company that is manufacturing the circuit boards).

1. **Transportation:**

some brands manufacturers certain parts of the product in a different place than the assembly place, because the cost of labor in the manufacturing place is high, so it is more profitable to assemble the product in a country where the minimum wage is low, also there is the cost of transporting spare parts to the consumer's country, but sometimes it is difficult to decide whether to assemble the product in a different country or not, because that would directly affect the quality of the product, which can affect the total profit negatively and it would be more profitable to assemble it in the same country.

1. **Inventory:**

Many businesses spend more money on inventory than anything else which mean inventory accounting can help you save money and increase profits. When you understand how much inventory you have how much it cost you, how much you are selling it for and when its selling we can make insight to make smarter business decisions. So, we need to get these feedback in our business and use information’s for our benefits or inventory would be costly.

**Targeted Customers:**

usually, it is more profitable to aim for the customers who are willing to pay for quality, rather than aiming for the customers that would want to buy a cheap product with low quality.

in a nutshell, we must aim for high income customers, these customers are located all over the world but most specifically in places like (the USA, Canada, Europe, South Africa, South Korea, Australia, and the Middle East).

**Competitors:**

there are competitors in any business, so we need to prove that our brand can fulfil the customer demand and it is worth the customer's money, once we prove that and success, profit and demand would increase dramatically, but in case our major competitors are well-known phone brands Apple and Samsung, they are already controlling the market with quality and price and can easily take over any other small brand, we must compete with quality and price and a unique design).

**Definition of the firm**

the firm want to compete in the mobile phone market, but they failed to do so, due to lack of strategic fit and bad supply chain management the manufacture, suppliers, and distributors are locally operated. Thus, high cost for the customers outside of turkey.

**Diagram

Description automatically generated**

\*Figure (1): the current supply chain of our firm.

**Business unit**

**Strategic context**, our firm is a mobile phone manufacturer business, and it is currently not evolving, as matter of fact it is devolving due to not improving the systems and the products, with a bad logistics which make the business costly and unhealthy, in addition the demand is decreasing since the competition is so hard with all these big companies monopolize the market. Our value chain compared to our competitors is low, we need to change that by making the total supply chain profitability higher and lowering the costs.

The next step of our business unit strategy development is finding **Competitive advantage**, we need to set a unique position, capabilities that allow us to create user value by delivering an offer that exceeds that of competitors or reducing its cost by delivering the same offering as competitors but at a lower cost (or both). To be sustainable into the future a competitive advantage must be based on a tangible difference in cost or price and be defensible relative to the leading competitors.

Let’s imply these ideas in term of logistics process, in logistics we can divide our function into four different criteria: transportation, warehousing, 3rd & 4th party logistics and reverse logistics. In transportation since the suppliers are all locals so the goods will be shipped by trucks which is good for cycle time and could minimize our inventory and warehouses cost in addition its flexible since the suppliers are close to the manufacturer , in terms on 3rd and 4th party logistics 3rd party will perform some logistics services where 4th party providers are logistics specialists and play the role of general contractor by taking over the entire logistics function of our firm which could help us in the short term. Finally reverse logistics, it is helpful for handling the return, reuse, recycling, or disposal of products that minimize the cost of raw materials.

But we need to balance logistics costs against the appropriate level of quality and customer service. Therefore, customer satisfaction at the lowest total cost means the service and cost minimization are two key elements in our logistics value proposition.

**There are six different logistics goals we want to achieve.**

1. Rapid response capability to the changes in the market or customer orders.

Which is not the current case for our firm. With low amount of inventories, the surplus from supply/demand cannot be high then our supply would be limited, on the other hand we minimize facility cost.

1. Minimize variances in logistics service.
2. Minimize inventory.

Which we are preforming well duo to stable demand.

1. Consolidate product movement by grouping shipments.
2. Maintain high quality and engage in continuous improvement.
3. Support the entire product life cycle and the reverse logistics supply chain.

**Our logistics tactics to reach these goals are:**

1. **Coordination functions**, which is transportation management.

We need to locate our manufacture in a different country with a labor cost less than turkey for example China or Indonesia. To minimize the labor cost and transportation cost which would make the logistics function more efficient and effective. We also need to select new warehouse’s locations around the world to distribute globally which mean we no longer will use only trucks for transportation, but we need to look into mix transportation modes and we need to make sure it’s the right fit to connect suppliers, producers, warehouses, distributors and customers. Selecting the right number of partners, selecting the minimum number of firms, 3rd PL or 4th PL to manage forward and reverse logistic.

1. **Reducing number of partners**.

the more partners there are in chain the more difficult and expensive the chain is to manage. Reducing the number of partners reduce the cycle time, operating costs and inventory holding costs.

1. Integrating the supply chain.

**current process structure**

the current competitive/supply chain strategy is to be a competitive mobile phone locally. The current SC structure is somewhat responsive.

**Drivers of the structure:**

**Information**: a lot of the time when we process our information it might affect our decisions and create a lot of cost savings or performance improvement.

**Inventory**: due to lack of inventories our inventory cost is increasing but our facility cost is good.

**Transportation**: since our facilities are all local the transportation is so efficient and not costly.

**Location:** the location is not good for a company who want to be a global organization since no warehouses or facilities near most of the world.

**\_SWOT analysis\_**

|  |  |
| --- | --- |
| **Strengths**   * The firm has a good transportation. * The firm is somewhat responsive. * The firm is fully local which make the feedback faster. * Other phones company think that we have a good customer value among Turkish citizens.   **Opportunities**   * Other competitors are controlling the market with a high cost so we can cut the prices. * The current market trends are affordable phones with good quality. Such as Huawei and Xiaomi. * New bendable screens phones are in the market we could use this technology. * Our firm can give these bendable screens phones for less cost. | **Weaknesses**   * We need to improve our facility locations and spread it worldwide. * We need to find a cheap labor in China or somewhere else but not in trade of quality. * One of the main reasons we lose sales is time to transport shipments for far countries. * Many companies think that we have a high logistics problem.   **Threats**   * We may not succeed which will make us lose a lot since we will spend a lot in facility costs. * Our competitors usually try to buy or stop any new phones business so we need to be aware of that. * We might have cash-flow problems at the start but once we fulfill the customer demands we will be fine. |

\*Table (1): SWOT analysis of our company.

**New process structure**

In addition to our previos logistics tactics we need to change the competitive strategy to a competitive mobile phone with an affordable budget. It was easier to collect feedback before because we were working in a small supply chain but now since we are going global, we need to value information more, on the matter of inventory we need to increase the inventories and make sure it is distributed around the world perfectly considering that the inventory cost and facility cost will increase rabidly so cash flow should be afforded.

The location of the facilities should be picked depending on the cost and the quality of the product, currently China is the most powerful country in the industrial revolution with such a low labor cost and high quality, the manufacturing and the assembly line should be in China where the warehouses should be distributed around the world for quick responsiveness. Transportation will be a challenge we have to face we need to ship most of our products from the ocean sine China is in the specific ocean which will make the transportation cost lower but this might affect the responsiveness, so we need to ship it by trains and air planes too for some places.

**Conclusion**

analyzing our logistics helped us figure out our problems, we defined our firm and put our current business unit in addition we added six different goal we want to achieve in our incoming years by using tactics that will help us develop our logistics system, we also need to change our process structure since we are planning to be worldwide competitors, we used SWOT analysis to help us understand out weakness to fix them and helped us understand our strength and opportunities but we need to remember that there is a lot of threat around us whether from our competitors or from us missing out on cash flow. Lastly in our new process structure we need to change the competitive strategy and change our facility locations for labor and facility cost minimization, and we need to fix the future transportation problems that we might face.

**Discussions**

What is the timeline of all these changes?

Well, we need to make sure that we don’t rush into building all these facilities because our brand might not hit and this will cost us a lot in terms of facility costs, we need to put a 4 years vision to change the current structure and distribute the facilities around the world we also need to develop and invest in R&D and try to develop these new bendable screens for cheaper cost so we get customer value.

How are we planning to afford all of these changes?

we need to open the brand to public stocks so we can afford the cash flow and we need to use 3rd or 4th party to help us in the short term and then once we can afford using our own facilities and labor we start working on the long term.

Which is more important for this brand quality or price?

We want to compete in the global market, the current trend is Chinese phones, and they are taking over Samsung and other competitors, the reason of that is the fact that Chinese phones are so affordable and they have a really good quality which where we are looking for to get the customer value we want to work in both price and quality.

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