

MOD007698 – Assignment 011

Supply chain assignment – AbTech Innovate eWaste

Please note this is not a question and answer assignment, you must define a suitable supply chain strategy for this case study. This is a fictitious case study, the company and persons do not exist

Introduction

AbTech are a start up company based in Boston US, they have developed a new thinner LCD touch screen glass based off recycling old mobile phones and tablets. AbTech CEO Jonathan Furness started the business while completing his PHD at MIT and gained several awards for his outstanding research. During the last five years, Jonathan has built up a team of engineers, scientists and researchers to transition the concept into a high volume production organization. In 2018 Jonathan gained a \$3 million investment from a US bank, in return for a 25% share of the business.

Today AbTech have joined a partnership with several eWaste companies in US and there is the potential to expand into Mexico and Europe. Jonathan feels trying to expand too quickly will damage the company, due to the lack of a suitable supply chain strategy and plan. Interest is growing from several global OEM's from the recycling eWaste into a final product.

Investment pressure

AbTech are under pressure from the investment bank to accept these new contracts to grow the business in the next five years. The manufacturing technology is under global patent, so there is no short term competition and the bank see the massive global potential. Production can be scaled up to pretty much unlimited recycling, but the touch screen production be limited and one idea is to sell the raw materials to suitable sub-suppliers. Jonathan is very nervous on this plan, as there is considerable risk associated with managing suppliers and ensuring delivery of the highest quality product.

If AbTech can provide a suitable supply chain strategy and the business case is to gain more financial funding to expand the business. The bank is very concerned that the current production and supply chain is uncontrolled; on one visit there was no stock and a backlog of orders. On another visit the carpark was full of eWaste in cardboard boxes, which is not the company image the bank want to foresee in the future.

US eWaste regulations

The US government are driving zero emissions waste by 2050, in line with the Paris climate agreement and China have changed they regulation not to become a dumping ground from eWaste. Several embarrassing investigations have emerged with US based companies who claim to recycle eWaste in a sustainable process, have been found out they are sending eWaste to developing countries such as India, Mexico.

There is a strong rumour the US government are going to enforce regulations all electronic products produced in the US, must be made with 10% recycled material and this figure will increase toward 2050.

Product demand

There is increases interest from different companies on the services which AbTech could provide and the impact it would bring to manage eWaste. There is no guarantee on the volume of eWaste which will enter the production facility, some months they are over stocked and need to hire ware houses at short notice which is very expensive. One issue is the eWaste suppliers will collect at random times, some will hold stock ready for a drop off, other times they just drop off stock any time of the day including weekends.

AbTech also ran a recent competition to win a holiday for people who returned their old phones and tablets. They were completely overwhelmed with phones, people even arrived with a boot load of phones to the factory, the staff were inundated with enquiries. The concern was some of these mobile devices had been stolen and they was no way to prove the original ownership.

AbTech team

AbTech has grown to forty people, with Jonathan still working in research, manufacturing, sales and working with the bank. Due to the rapid expansion of the organization the team R&R have not been fully defined and it changes every day. Researchers some days are running the production, next day meeting customers and this is creating a poor working environment, with potential staff leaving if this situation is not resolved in the future.

One strong team is the finance team, which the bank setup to keep an internal eye on the general operations of ABTech.

Production faculty

AbTech is 100,000 square meters of brand new warehouse space, which is based on a new industrial park and there is potential to expand if required. The ultrasonic treatment machines, require a large volume of water to operate and storage tanks were installed onsite. Sadly production runs out of water on a regular basis and it can take either days to refill the tanks due to incoming water source, or ordering water which can take several days to arrive onsite.

There is a production problem which the research team are looking into, the sand filters are getting blocked very quickly which can randomly stops the complete production operation. The only solution is to remove the sand filters completely, due to the cost of the required sand AbTech does not hold any stock and the lead time from Europe is 4 weeks. With the pressure to keep production running, the sand is air freighted which is very expensive due to the weight.

Once production is running they can disassemble between 100~150 eWaste phones i.e. phones tablets per hour and produce the same number of touch screen displays. This production volume needs to increase to nearly 1000 eWaste products per hour, which is impossible from a single factory.

The facility was built near a lorry park which services the complete industry park, the current plan is lorries just arrive and unlock their cargo via plastic storage containers. As this is very random and the suppliers are trying to reduce costs, they will drop off eWaste at the same time when they are picking up or dropping off other items in the same industrial park. Due to the random delivery, some days there is a queue of lorries waiting to drop off eWaste and it's very annoying for the lorry drivers who are on a tight delivery schedule. Jonathan is hearing the lorry drivers are now refusing to drop off eWaste to AbTech and suppliers are requesting AdTech send their own lorries to pick up the eWaste at the various locations across Boston. This is also a concern as the company has recently setup a contract with a US based company, who will deliver high volumes of eWaste.

The touch screen production is based on the other side of the warehouse, which is blocking one of the lorry bays. AdTech purchases the production assembly line and when running with no issues, but it's quite common there is a shortage shipping and package containers so touch screens just sit in the warehouse and get dusty which the end suppliers are not happy and offered are returned.

There is a good source of orders for the touch screens, which is the financial income for business. The end customers are mainly phone and tablet repair companies and AbTech also sell via an eCommerce site. The complete staff are normally assigned to production on a Friday afternoon, which is always a rush to get the product packed and ready for the lorry to arrive at 1700. As there is no stock of displays, it's common to not fully fill the orders and another pick up has been planned for the next week.

One of the staff has created a basic stock control, but it's soon out of date as no one is tracking the orders and potential demand from the incoming eWaste side, the need to order shipping packaging, sand and water for production.

Overseas expansion

A major eWaste supplier in Italy has contacted AdTech for the potential European partnership mainly to manage the over stocking of mobile phones. A recent major sales drive by an OEM which is offering a free phone on a low cost contract. The Italian supplier eWaste stock is growing every day and they need to find a solution quickly. Jonathan from AdTech is keen to ship all the eWaste to the US, but the bank is concerned on the logistics and the current state of production and supply chain management.

In parallel to this conversion is a potential long term plan to sell the displays to a company in Africa who wants to produce a low cost mobile phone <\$5 to support the growing demand in Africa. The AbTech board are keen to provide products, but with the random outwards sales it's hard to understand how to manage these orders.

The bank are keen for the AdTech board to consider working with a partner or out-source some of all supply chain management. The AdTech board are against out-sourcing and currently looking to purchase their own fleet of trucks, lorries and extra warehouse as store. The costs to implement strategy this is very high and contains risk of efficiency and operation.

As the company is driven by sustainability the thought of shipping product back and forward across the Atlantic is not great news due to the CO2 emissions of shipping. So they hope to find a more sustainable method to manage this part of the supply chain.

Summary

AbTech are in a really good position to expand the company the investment bank, want to see a global presence in the next five years and set target. There is growing demand from local in the US and also overseas, but it's clear the lack of supply chain management is restricting and damaging the business. There are a number of problems which need to be resolved, to define a suitable supply chain to aid the current and future expansion of production.

Consultancy report

Your role is to define a suitable supply chain strategy for Abtech, considering some of these items but are free to expand on your own ideas and solutions

1. Supply chain model/framework i.e. Porters model, SCOR
2. Benefits and disadvantages of outsourcing the production, supply chain, logistics
3. Suitable forecast and modelling of sales and impact to downstream suppliers
4. Environmental and sustainably across the complete supply chain
5. Suitable supply chain risk management
6. Use of technology to aid the company
7. Benefits and disadvantages Agile Vs lean Vs Hybrid supply chain strategy
8. Feel free to provide your own ideas, suggestions how to establish a robust supply chain.

Please note this is not a question and answer assignment, you must define a suitable strategy for this case study.

It's very important you review and understand the marking criteria for the assignment to ensure you gain the highest marks.

Marking Criteria

Scenario Analysis- Describe the current situation with the given case study, what is their current capabilities within supply chain management and details the opportunities with future growth of the company.(30%)

Supply chain strategies - Define how the case study could establish a global supply chain, making reference to a supply chain theory such as Porters, SCOR and the impact on the company structure. The strategies must include references to:

- The advantages and disadvantages to supply chain outsourcing
- Risk management
- Competitors analysis
- Impact of future technologies in sharing information throughout the supply chain.

With the different split of potential markets and manufacturing locations, please find provide different strategies which could affect the supply of parts from manufacturing to the end customer.(30%)

Conclusion and recommendations - Provide a clear set of recommendations defining your ideas how to establish a supply chain, based off your academic research.(30%)

Academic Rigour - Your assignment should clearly include the academic insight, i.e. the concepts and the supporting references involved, indicated in the report and listed in the references and bibliography.(10%)