



Business Development Report Western Sauna LLC

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Introduction:

This business development report will incorporate the concepts and principles of Operations Management through the development and introduction of a sustainable and environmentally friendly product to market. This report contains comprehensive information on the location of facilities, product design, production and planning control, quality control, materials management, maintenance management, supply chain, risk and human resource management of a new sauna business specializing in customization going by the name 'Western Sauna LLC' in the trilateral trading bloc in North America.

Warren Bennis acknowledges that "Success in Management requires learning as fast as the world is changing." There are changes occurring in the internal and external environment of an organization which affect the organization and can significantly influence its operations, growth and long term sustainability. Changes in the internal environment such as changes in the leadership style, the organization's mission or culture have tremendous impact on the organization, along with changes in the external environment such as customer, competition, the economy, political, technological and social conditions. For Western Sauna LLC to be successful through the management of operations, requires it to be learning as the world changes.

Executive Summary:

Strong commitment to have a sustainable society and highly environmentally friendly products with Western Sauna LLC. With excellent quality of Western Red Cedar and nicely designed by carpenters who have a long standing experience on handicrafts, the sauna rooms will be worth the wait. In addition, Western Sauna LLC will have only few trusted suppliers who will provide wood to the company when a client makes an order. Suppliers are in Canada and their companies hold certification on sustainable management of the forest and as a result is beneficial for Western Sauna to be partnered with such companies. Western Sauna aims to produce and sell two sauna rooms a month in the initial year, with hopes of increasing production the following year. More important, the strong vision and mission shared by the entire organization and its hard-working individuals will lead to desired results.

In a market with many luxury hotels, sauna room is highly needed to offer the best relaxation time for their own guests. There are hundred of hotels wanting big sauna room that last longer than others in the market, which is exactly what Western Sauna offers with its 8 years warranty. Furthermore, Western Sauna LLC will have its headquarters in New York due to it being a business district and having clients who will be familiar with the brand and will actually care about the brand's operations. And with this demand, Western Sauna LLC expects to be profitable with the products as well as remain sustainable for a healthy future. The manufacturing plant and warehouse will be located in Mexico (Tijuana).

With a review of the sauna market in New York, it shows that Western Sauna LLC will be competing with two strong competitors namely Am-Finn Sauna and Helo Commercials Ltd.. They both have strong brand recognition and a wide range in the U.S as well as outside U.S. Western Sauna LLC aims to inspire customers and clients to choose saunas made by Western Sauna over the other competitors in the market by offering fully customizable saunas, clients can pick the design, the size, the orientation of the room and Western Sauna ensures to deliver the best quality with excellent customer service. At Western Sauna, the customers are the kings and will be treated accordingly.

In launching this business, Western Sauna LLC forecast sales based on two years plan. The goal is to achieve the plan of attracting investors so there will be a new set-up plants in the future. Western Sauna LLC products will be sold with high gross margin which will lead to high net profit that will benefit the business to continue operating.

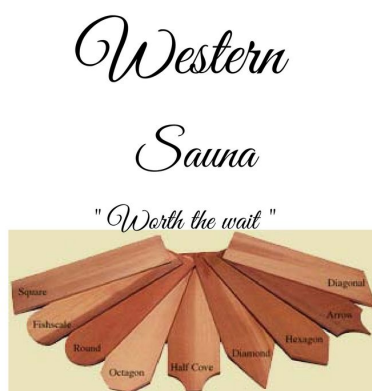
Lastly, this business project is likely to have negative cash flows in the first six months, but will gain momentum by the eighth month and make profits then. Western Sauna LLC has already provided the cash balance to keep the operation going.

Company Overview:

Western Sauna LLC aims to be a company at the helm of consulting with each and every client i.e, luxurious five-star hotels, in order to acquire required information to customize and produce a 'one of a kind' sauna for their guests,, this will be initiated by having a highly skilled Operations Manager translate the client's' ideas into a flawless design after which Western Sauna will source the highest quality wood and varied raw materials to produce the sauna, then at the next stage have professional carpenters transform that design into a work of outstanding artistry or workmanship.

Western Sauna LLC will target luxury hotels in New York City, USA by specialising in first class, customized commercial saunas of varying sizes.

Western Sauna is considering the following company logos to represent itself:



Legal Structure of the company:

Western Sauna LLC will be a limited liability company which is the United States specific form of a private limited company and has a business structure that incorporates the pass-through taxation (i.e, no double-taxation) of a partnership with the limited liability of a corporation.

Choice of wood:

The saunas will be made using Grade A **Western Red Cedar**, an evergreen coniferous tree belonging to the cypress family. The rationale behind the choice of wood for the saunas happen to be the fact that Western Sauna prioritizes sustainability and coincidentally Western Red Cedar happens to be one of nature's truly sustainable timbers, leaving a very small environmental footprint¹. In addition to this, it has been rated as being very durable in regards to decay resistance.

Western Red Cedar is one of the lightest in weight of all commercially important softwood species. It is a "soft" wood of moderate strength but with excellent weather resistance. Red Cedar dries readily with very little shrinkage and has excellent working qualities. On top of all these characteristics, Western Red Cedar has a strong aromatic scent.

Strategy Formulation

Vision Statement: "Working towards a sustainable society and economy for a healthy and well protected environment by producing sustainable saunas for commercial purposes, simultaneously offering the most comfort to the users."

Mission Statement: "Provide superior quality saunas to ensure high customer satisfaction. Western Sauna will consult with the client in every stage of the customization process ensuring value is added with precise designs."

Slogan: "It might take two weeks, it might take longer. But Western Saunas are worth the wait."

The slogan indicates the positioning that Western Sauna will take in the market i.e, as a firm that positions to maximize quality rather than maximizing speed of delivery or minimizing cost. Quality will be delivered to the clients in two forms: 1. High performance design-Each and every sauna leaving Western Sauna's manufacturing plant will possess superior features and high durability along with excellent customer service which will be offered from the time the client steps into the Headquarters to make the order till the installers finish installing the saunas in the respective hotels.

Organizational Structure

An organizational structure determines the extent and nature of how leadership is disseminated throughout the organization as well as the method by which information flows in the organization.

¹ The effect that a person, thing or activity has on the environment.

Western Sauna LLC will adopt a flat/horizontal structure with few levels of management between management and staff level employees. In addition to adopting an organic model. The reason behind adopting a flat structure as opposed to a hierarchical or tall structure is because it elevates employees' level of responsibility in the organization, removes management layers thereby improving the coordination and speed of communication between employees and encourage an easier decision-making process among employees. This structure also reduces the organization's budget costs by eliminating salaries of middle management.

There will not be rigid departmentalization in Western Sauna LLC, there will be the Directors and Managers in the New York office while the carpenters will be in Tijuana, however the carpenters will be free to communicate with any of the Directors or Managers without any hindrance.

Industry Analysis:

Saunas fall under the **Wellness and Spa Industry**. The International Spa Association (ISPA) having released its 2016 U.S Spa Industry Study and the annual report exhibited the industry's steady growth with an overall revenue of \$16.3 billion in 2016, marking a five percent increase from \$15.5 billion in 2015. This increase in spa revenue was driven by growth in the number of spa visits, which was estimated to have increased by 2.1 percent from 176 million in 2014 to 179 million in 2015. There was also a rise in average revenue per visit, which grew by 2.9 percent increasing from \$88 in 2014 to \$91 in 2015. (Staff, 2016)

Trends:

There are major trends in this industry for 2017 and some that will affect Western Sauna's business of producing and selling their products. **Sauna reinvented**, one such trend, where saunas are moving away from the concept of being a solitary activity and towards saunas being places to socialize with others through new concepts for saunas which are emerging such as turning it into a hip, social amphitheater for one. Western Sauna can use this trend to their advantage when marketing their multi-person commercial saunas to hotels.

Wellness architecture is another trend in this industry where there is a change in how the architects design buildings not only for surface aesthetics but to create buildings that improve the health of the humans living within. "Everything "built" is getting reengineered: from indoor air quality to sleep and acoustics" (talkabouthospitality.com, 2017)

Main Competitors:

Out of the many Sauna manufacturers and suppliers, the companies in the lead at the moment are Am-Finn Sauna and Helo Commercial Saunas. Benchmarking is a measurement of the quality of an organization's products, programs, strategies, etc and their comparison with similar measurement of its peers. The objectives of benchmarking is to analyze how other organizations achieve their high performance levels and to use this information to improve performance. However since Western Sauna

hasn't entered the market yet, Western Sauna will be using the two competitors as benchmarks to get ahead in the market, aiming to adopt their strengths and at the same time developing their own

1. Am-Finn Sauna:

Strengths:

- ☐ Established Customer base.
- ☐ Over 50 years of experience.
- ☐ Market leader for commercial sauna and steam rooms.
- ☐ Innovative products.
- ☐ Serves a number of countries including US and Canada.
- ☐ Offers additional accessories.

2. Helo Commercial Saunas:

Strengths:

- ☐ Serves a wide range of countries including US.
- ☐ Possesses extensive research and development program for sauna and steam related products.
- ☐ Has a number of manufacturing plants.
- ☐ Strong social media presence

See Appendix 2 for more information.

Product Description

The environmentally, sustainable product that Western Sauna LLC will bring to the market happens to be customized saunas. Saunas are small rooms traditionally possessing wooden interiors for the purpose of experiencing wet or dry heat sessions. Each sauna made by Western Sauna LLC will be handcrafted using superior components ensuring the ultimate relaxation for the users and bringing in more clients to the luxury hotels .

Motivated by the fact that customization makes business sense, whereby it treats each and every client as an individual by having products customized to their specific needs and desires, consequently building a closer relationship between them and Western Sauna, the initial idea for the product emerged from there.

Typical room sizes will be varying from 4 by 4 feet to 8 by 12 feet. The standard ceiling height will be 7 feet to minimize heat loss. 2 feet of bench space will be provided for each bather and benches will come at two heights, an upper bench about 36 inches high and a lower bench about 18 inches high. The upper bench widths will be 18 to 24 inches. The flooring will be removable duckboard. The doors will be glazed that provides an open feeling. Glass options will include clear, opaque or even etched with a design. Energy saving glazing that has a ½ to 1 inch air space between the two outer layers of tempered safety glass.

The room will have a operating temperature of about 18-75 degree celsius and the heater method used will be pure ceramic heating. The smallest sauna that will be produced by Western Sauna will be able to accommodate 6 people. The warranty provided will be 8 years.

Product Design

One of the most pivotal phases in Operations Management is the Product Design as it influences the earnings from the product. There are two basic steps in designing products : functional design and production design.

Functional Design - This step is where the product is designed to be functional so the decisions are based on dimensions, materials to be used and so on. At this stage, the main concerns are functional considerations, customer appeal, cost and ease of operation and maintenance.

All of the products will be sold to luxury hotels. Formally, to have an elegant and outstanding Sauna Room, the company thinks and designs differently which will benefit Western Sauna as well as the clients. Basically, the standard size of the room will be 2.8 metres. The room will be extremely huge, and it will fit well around 10-12 people. It is vital for customers to come up with new ideas. Sauna Rooms will be designed in Pentagon, Octagon, and Trapezoid shapes. Also, The majority of Sauna Rooms are designed in shapes of Squares and Rectangles.

Model	POT Sauna Room
Dimension	L*W*H 12m x 12m x 2.2m
Material	Western Red Cedar Wood
Details	<ul style="list-style-type: none">-Pentagon, Octagon, and Trapezoid Design-High Quality Stove-Handcrafted ceramics and woods-Convenient preset timer to set the heat
Optional	<ul style="list-style-type: none">-Alarm-LED light
Sample	Accept

Production Design - At this stage, the designer considers introduction or modifications and new concepts into the product to make it more suitable for production.

Material & Tool Requirements:

The main raw material required in making saunas is **wood** since it is used for the interior of the room, benches and doors, making up a majority of the finished product. The type of wood that will be used for Western Sauna LLC's products is Western Red Cedar. Western Sauna will also be making use of high quality **LED lighting** which endures the extreme pressure of heat and humidity which will be the case with saunas.

Another important material required is **glass** which is used in the area of the doors and will be used further depending on the client's specifications. **Heaters** are vital for saunas with the most convenient being electric sauna heaters and other alternatives like natural gas/propane sauna heaters and wood burning sauna stoves. **Ceramics, foil vapor retarder, brass hinges, galvanized nails and stainless steel mounting hardware** will also be used in the process.

Tool Requirements in manufacturing plant:

Since the production of saunas will be a jobbing process, the carpenters in charge of following the blueprint and making the saunas will need to use tools to make that happen. Following are the tools that will be used by the carpenters at Western Sauna's manufacturing plant:

Essential Power Tools:

- **Circular Saw**

Chosen circular saw: Makita 500 7F -1/4 inch circular saw costs \$100. Because of the nature of the drive mechanism, they are considered more durable under heavy daily use. The *sidewinders* are quite durable as well. ($6 \times 100 = 600\$$)

- **Drill**

Chosen drill: Dewalt DWD110K 8.0 amp 3/8 inch VSR Pistol Grip Drill Kit with keyless chuck costs \$111.30

The 3/8 inch drill is a high speed drill that is perfect for drilling small to medium sized holes in wood, plastic or metal. The 3/8 drill is also a little smaller and lighter weight than my 1/2 inch drill - this makes it easier to use. ($111.30 \times 6 = 670\$$)

- **Reciprocating Saw**

Chosen reciprocating saw: Milwaukee 6519-31 12 Amp Sawzall Reciprocating saw kit costs \$100. ($100 \times 7 = 700\$$)

Hand tools:

- **Chalk Line** - For marking long straight lines on wood, concrete or metal. Stanley 47-443 3 Piece Chalk Box Set - 4-Ounce bottle Blue Stanley Chalk & Plastic Line Level. ($\$10 \times 10 = \$100.$)
- **Carpenter's Pencil** - A thick-leaded pencil for marking on wood. FastCap Fatboy Extreme Carpenter / Mechanical Pencil ($\$12 \times 15 = \180)
- **Utility Knife** - For sharpening your carpenter's pencil and general cutting, etc. DEWALT DWHT10035L Folding Retractable Utility Knife ($\$12 \times 10 = \120)
- **Tin Snips** - For cutting metal flashing. Craftsman Evolv 3 pc. Aviation Snip Set ($\$20 \times 7 = \140)
- **Wood Chisel** - For chiseling wood or for use as a pry-bar. Stanley 16-150 150 series short blade 3-piece wood chisel set. ($\$10 \times 10 = \100)
- **Torpedo Level** - For quickly leveling short spans. Stabila 196 Level set Kit \$499.99
- **Nail Puller** - For pulling nails from wood. Kwick Gripper. ($\$36 \times 6 = \216)
- **Tape Measure** - Stanley 25'. ($\$10 \times 10 = \100)

- **Hammer** - The framing hammer- Estwing 22 ounce steel handle framing hammer with a waffled face. (\$40*10= \$400)

Inventory

Inventory is a complete list of items such as goods and materials that a business holds. For Western Sauna, the finished goods will be directly transported to the clients after it is finished producing so the only thing to keep in inventory are the raw materials.

ABC Analysis of Inventory

A Items: With very strict control and no safety stocks, this type of inventory minimises waste and surplus. For Western Sauna, there is only one raw material that is an A item which is wood, Western Red Cedar.

B Items: This type of inventory has to be in moderate control with low safety stock and is ordered only once a month. Western Sauna inventories a group of B items such as glass, foil vapor barrier, fiberglass insulation, LED lighting, Ceramics and heater.

C Items: With very loose control and high safety stock, C items are ordered in bulk once in 2 months. C items in Western Sauna's warehouse will be galvanized nails, stainless steel screws and brass hinges.

Inventory Management:

Inventory management must integrate objectives like the company's goals, sales forecasting, sales & operations planning and production & materials requirement planning so that there is a continuity between all these functions. Inventory decisions are risky and they make a large impact throughout the supply chain ((Bowersox, Closs, and Cooper 2005) Quesada-Pineda et al., 2010)

Western Sauna will be implementing the Just-in-time inventory management. **Just-in-time inventory management** is a management approach that attempts to minimize inventory rather than optimize it. Inventories are reduced to as little as possible which results in set-up times and lead times being reduced so that smaller quantities can be ordered. This management approach increases efficiency and decrease waste by receiving goods only as they are needed in the production process, thereby reducing inventory costs. This inventory supply system represents a shift away from the older just-in-case strategy, in which producers carried large inventories in case higher demand had to be met. This puts pressure on suppliers to act faster and to make more deliveries in a time sensitive environment so Western Sauna LLC will develop efficient just-in-time delivery systems with the suppliers of the raw materials ensuring these materials are delivered directly to the point of use i.e, the manufacturing plant. The suppliers and Western Sauna LLC will work together to reduce waste and drive down costs.

Inventory Control System

Western Sauna will implement a Just-in-time inventory control system in order to eliminate warehouse storage need and reduce cost in the process.

Maintenance Management

Western Sauna will strictly try to acquire an outstanding maintenance because it prevents the company not to meet the downtime from some equipment even all the machines work effective and efficient. The goal is to get lean production by trying to eliminate the waste or even waste money on inefficient maintenance procedures.

The organization must be highly managed, and with an innovative software ERP(Enterprise Resource Planning), the primary goals such as scheduling, controlling the costs, and compliance will be easier.

Scheduling: It is essential for Western Sauna to understand the importance and the priority of the equipment and tools. In the warehouse and manufacturing plant, there must be enough forklifts for employees to use when it comes to taking raw materials into the warehouse. Since forklifts are used for both raw materials and finished products, it has to be well managed. This is concise and the manager has to know which priority is higher than others. Also, Western Sauna aims to have sufficient trucks too since trucks are used to deliver the customized saunas to the customers.

Cost control: It is an important objective and the budget has to be decided by the company. When it is decided, the manager has to do things with the limited budget and it is mostly well calculated by the CEO. For instance, some equipment can be bought by more than one supplier. It is vital for the manager to outsource to better and trusted suppliers with cheap price.

Compliance: Raw materials has to be stored properly so there will be no compliance issues. Example, if Western Red Cedar that Western Sauna will use are stored improperly, it might become obsolete or deteriorate by the time it's supposed to be converted into a sauna.

Location Of Facilities

The North American Free Trade Agreement (NAFTA) came into effect in 1994, creating one of the world's largest free trade zones and laying the foundations for strong economic growth and rising prosperity for Canada, the United States, and Mexico. Since then, NAFTA has demonstrated how free trade increases wealth and competitiveness, delivering real benefits to families, farmers, workers, manufacturers, and consumers.

Three locations had to be selected for Western Sauna's operations. The first is the country from where wood will be sourced, the second is the country in which the manufacturing plant will be located and the final one is where the headquarters will be located where the clients will come to make their orders.

Western Sauna LLC will source its Western Red Cedar from British Columbia, Canada.

PEST Analysis for Canada.

Political Factors

Canada is one of the federation of former British colonies and as a result, follows the British pattern of parliamentary democracy. Prime Minister, Justin Trudeau from the Liberal Party had a tremendous election victory in October 2015.

Since Trudeau came to power, he has strengthened the diplomatic and trade relations with a large number of countries (Mexico, Ukraine, etc.). At the end of 2016 the trade agreement between Canada and the EU (CETA) was signed and this could have positive consequences for the country's exports as of 2017. The Prime Minister also wants to reduce the obstacles to trade between the country's ten provinces where non-tariff barriers still exist relating to the movement of goods, capital and people.

“As of 2013 Canada is ranked in the 84th percentile for Political Stability and Absence of Violence/Terrorism and in the 97th percentile for Government Effectiveness according to The Worldwide Governance Indicators (WGI) project.”(Edunova, 2015)

The corporate tax rate is at 26.50 percent. The overall tax burden equals 30.6 percent of total domestic income. Government spending amounts to 40.7 percent of total domestic output, with small deficits recorded in recent years. Public debt equals about 87 percent of GDP.

Economic Factors

Canada resembles the US in its market oriented economic system, pattern of production and high living standards since it is a high-tech industrial society in the trillion-dollar class. Canada's petroleum sector is rapidly expanding and the country now ranks third in the world in proved oil reserves.

Canada has the largest economy in the world, based on the nominal Gross Domestic Product. In December 2016, Canada experienced an increase in consumer price by 1.5 percent due to the increase in prices of gasoline and shelter. The annual inflation rate rose to 1.60 percent in December, 2016 along with an expansion of the Gross Domestic Product by 1.30 percent in the third quarter of 2016.

Trade is vital to Canada's economy; the value of exports and imports taken together equals 65 percent of GDP. Canada's economy is expected to grow in 2017 by 2.4 percent which is equal to United States, the economy will be supported by export growth, a better market for commodities and government spending initiatives.

Social Factors

According to the latest United Nations estimates, the current population of Canada is 36,486,476 as of Thursday, February 2, 2017. The male population constitutes 49.6% of the total population while the rest is female. The median age in Canada is 40.8 years.

During 2017 the population is expected to increase by 377,858 people consequently increasing the total population to 36,885,861 towards the beginning of 2018. The natural increase is expected to be positive, as the number of births will exceed the number of deaths by 132,889. The population will be increased by 244,969 if external migration remains on the previous year's level. (*Current population of Canada, 2002*)

Canadian values include respect, liberty for cultural differences along with a commitment for social justice.

Technology Factors

The Federal government is expected to increase its expenditure on science and technology by 1.0% from 2015/2016 to \$10.7 billion in 2016/2017. Technology is a main driver of the economy. Approximately \$117 billions or 7.1% is responsible for the economy outputs, and it is greater than finance and insurance industry.

Experts say the technological upheaval in the country that has rocked industrial manufacturing for decades is set for rapid expansion into white-collar roles. In fact, it's already begun in some sectors. The main concern is that if people aren't prepared to adapt and do it quickly, they could be left without work..

The manufacturing plant's location has been set to be in Tijuana, Mexico after carrying out a detailed weighted index.

PEST analysis in Mexico

Political Factors

The country is a federal republic based on the presidential republic. The current political leader is Enrique Peña Nieto who has been in power since 2012 and will continue to be till 2018. The general election will be held next year which will affect business as well. The country is trying to make the economy more competitive. Mexico still struggles with the formal-sector; employment and poverty. Foreign and private investments are allowed to produce oil and gas in the country. Moreover, the government is pursuing many structural reforms such as labor of market regulation, education, telecommunication, competition policy, and more.

Generally, the labor laws in Mexico are in favor of the employees as a result, termination of employees is sometimes very difficult. Once a labor relationship has been established, the law ensures the employee is protected against discrimination based on ethnic background, nationality, gender, age, social status, health status and religion.

Mexican labor law stipulates a maximum workweek of 48 hours and defines allowable shifts and provides for a minimum daily wage as defined by the National Commission of Minimum Daily Wages.

Economic Factors

It is approximately 63% of the service sector, which contribute to the Mexican Economy. There are varieties of service sector, and the majors contributed are financial institution, real estate, public administration, and other social activities. Since the recession in 2009, Mexican declined 4.7%.

And in 2010 until now, domestic demands have been a key driver of the economy. The country is also a member of NAFTA. The economy expects growth in 2017 and 2018 through investment from international companies, and consumer confidence. Mexican's economy growth is around 2.7% in 2016. And in 2015, the GDP was 1143.79 billion US dollars. And the value the economy represents 1.84% of the world economy.

Mexico is the 12th largest exporter in the world, with the growth of trade with United States and Canada. Mexico's number one export is manufactured products in addition to silver, fruits, coffee and cotton.

Social Factors

Mexico's population rate is at 129,909,864 presently, based on the latest United Nations estimates. This figure is equal to 1.73% of the total world population. Mexico ranks number 10 in the world by population. The median age in Mexico is 27.8 years.

Having an increasingly stressful pace of life in addition to unhealthy living and eating habits continue to drive sales of consumer health in Mexico. The growing price competition driven by generic and private label is likely to favor volume over value growth.

Technology Factors

Internet contributes 1% in GDP, but now E-commerce is growing rapidly. Also, the country produces advanced automobiles for some foreign companies such as BMW and Mercedes Benz. Moreover, the government spends money for higher education, technology institute, and nanotechnology.

Mexico has long recognized the importance of research and innovation to the development of a strong and sustainable economy. In 2017, as it faces lower budgets the country's government will be more selective in the projects it sponsors. Intentions to improve the intellectual property framework are set to give foreign investors additional confidence in this area.

Western Sauna LLC's office will be set up in New York, USA.

PEST Analysis for United States of America

Political Factors

USA has a strong democratic setup and is deemed to be the leading superpower in the world. In 2017, the Trump Administration and its Republican allies in Congress have made it a priority to have comprehensive tax reform that lowers businesses and individual tax rates while simplifying the tax code and consequently making US businesses more competitive in the global economy.

In a report by PWC, “Lowering the corporate tax rate while tightening rules on international profit could free up significant capital for US investment. There are implications for supply chains and manufacturers as tax proposals aim to encourage more US production. We expect that there will be trade-offs, too.” (PricewaterhouseCoopers, 2017)

US import policy is characterized by a balancing act between trade and security concerns. The government has to ensure that domestic industries and jobs are safe guarded against unfair trade practices while simultaneously seeking to facilitate the inward flow of international goods and services.

Economic Factors

One of President Donald Trump’s campaign promises-an expansionary fiscal stance,is likely to provide a boost to the US economy in forthcoming years through sizeable tax cuts. However the boost is expected to be 2.3% in 2017 which is a growth by 0.1 percentage points from last month’s estimate.

President Trump’s anti-trade policy threatens to feed inflationary pressures through rising prices of imported goods, so if it comes to be realized it bears the risk of consumer price rising beyond 2.0%. (Ampudia and FocusEconomics, 2017)

Social Factors

As of 2 February, 2017 the total population is estimated at 325,675,702 people. The natural increase is expected to be positive, as the number of births will exceed the number of deaths by 1 418 996. If external migration will remain on the previous year level, the population will be increased by 1 031 701. (*Current population of United States of America (USA)*, 2002)

Technology Factors

Technology and innovation have been a foundation of United States. The country is one of the most technologically advanced country in the world. Also, broadband internet access, nuclear weapons, space research NASA have been the key drivers too. Additionally, US has been trying to enhance and develop technology areas such as biotech, nanotechnology, and environmental. And the country has so many strong competitors. However, China and India are the intense rival.

Acquirement of Materials:

Effectively acquiring and managing the inventory of raw materials for production and assembly will be vital to Western Sauna LLC’s efficient manufacturing process, in addition it will serve as a balancing act.

Wood Suppliers:

From the numerous supply chain strategies, Western Sauna LLC implements long term partnering with **few suppliers** whereby value can be created through economies of scale and learning curve

improvements in the long run. In this strategy, the suppliers are involved in JIT programs contributing design and technological expertise.

Western Sauna LLC will partner with two suppliers initially, Carlwood Lumber Limited and The Teal Jones Group. Carlwood Lumber Limited, located at Street Maple Ridge BC, Canada. The Teal-Jones Group's Main offices are located on the banks of the Fraser River in Surrey, British Columbia, Canada. Both of the selected suppliers comply to PEFC standards (See Appendix 4 for more information) which was an essential reason as to why these suppliers were selected because Western Sauna places importance on sustainability of the environment.

Western Red Cedar Wood Price:

Item	Size	Price
Western Red Cedar DAR	12x12	\$2.90 l m
Western Red Cedar DAR	19x19	\$3.25 l m
Western Red Cedar DAR	31x12	\$3.75 l m
Western Red Cedar Scotia/Quad	12x12	\$3.75 l m
Western Red Cedar DAR	19x12	\$3.85 l m
Western Red Cedar Scotia/Quad	19x19	\$4.50 l m
Western Red Cedar DAR	42x12	\$4.85 l m
Western Red Cedar DAR	31x19	\$4.95 l m
Western Red Cedar DAR	42x19	\$6.25 l m
Western Red Cedar DAR	67x12	\$6.95 l m
Western Red Cedar DAR	31x31	\$7.25 l m
Western Red Cedar DAR	42x31	\$9.40 l m
Western Red Cedar DAR	67x19	\$9.65 l m
Western Red Cedar Scotia/Quad	31x31	\$9.75 l m
Western Red Cedar DAR	91x12	\$9.95 l m
Western Red Cedar DAR	41x41	\$12.40 l m
Western Red Cedar DAR	91x19	\$12.85 l m
Western Red Cedar DAR	67x31	\$14.50 l m
Western Red Cedar DAR	140x12	\$14.65 l m
Western Red Cedar DAR	117x18	\$15.90 l m
Western Red Cedar Scotia/Quad	41x41	\$15.95 l m
Western Red Cedar DAR	67x41	\$18.95 l m
Western Red Cedar DAR	140x19	\$19.50 l m
Western Red Cedar DAR	91x31	\$19.75 l m
Western Red Cedar DAR	117x31	\$24.65 l m
Western Red Cedar DAR	190x19	\$26.00 l m

Material Management

In this aspect, an operation supplies the delivery of a quantity of products or services when required. The managers often have an uncertain attitude towards inventories because they are costly. The inventories are risky because it can be obsolete or just get lost, and it takes a valuable space in the

operation. But the company is not producing a huge quantity, so it will be a huge advantage for the factory. Western Sauna will produce two saunas a month, and have some extra stocks to fulfill high demands.

Company aims to avoid vast products. The reasons below will give a new perspective.

Cost: It is tying up the working capital. The stocks will be deteriorated with lack of management skills. Things lose its quality and aren't able to satisfy customers. Then, it must be well managed to avoid quality assurance. Hence, the cost of setup is costly within updating and maintenance.

Space: It requires an enormous storage space. With that, it may require a security or a special environment.

Quality: This is the main factor. Quality of raw materials and finished products will deteriorate overtime. On the other hand, if it is not well packaged, it will be damaged or obsolete.

Layout of Facilities:

In order for an organization to possess an effective manufacturing unit, special attention needs to be paid to the facility layout which is an arrangement of various aspects of manufacturing in an apt manner as to achieve desired production results. Some factors that need to be considered for facility layout are available space, convenience of operations and final products. Planning of layout of the facility aims to design effective workflow to make equipment and workers more productive.

There are two major criteria for selecting and designing a layout and they are as follows:

1. Materials-handling cost
2. Worker effectiveness

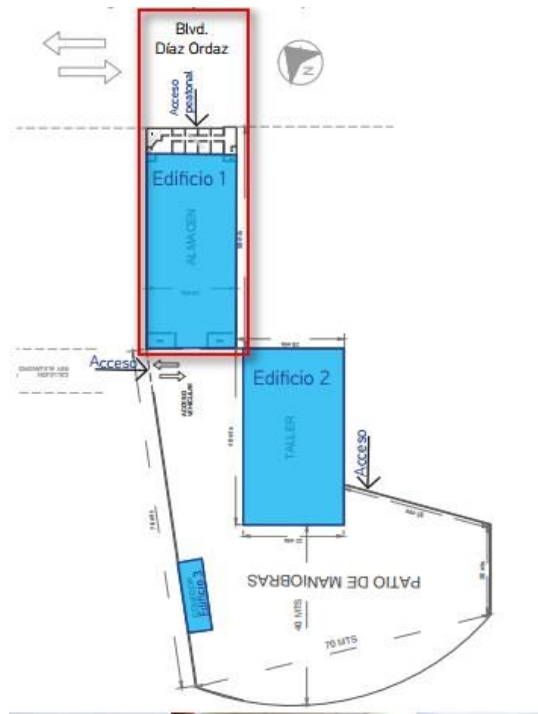
Manufacturing Facility

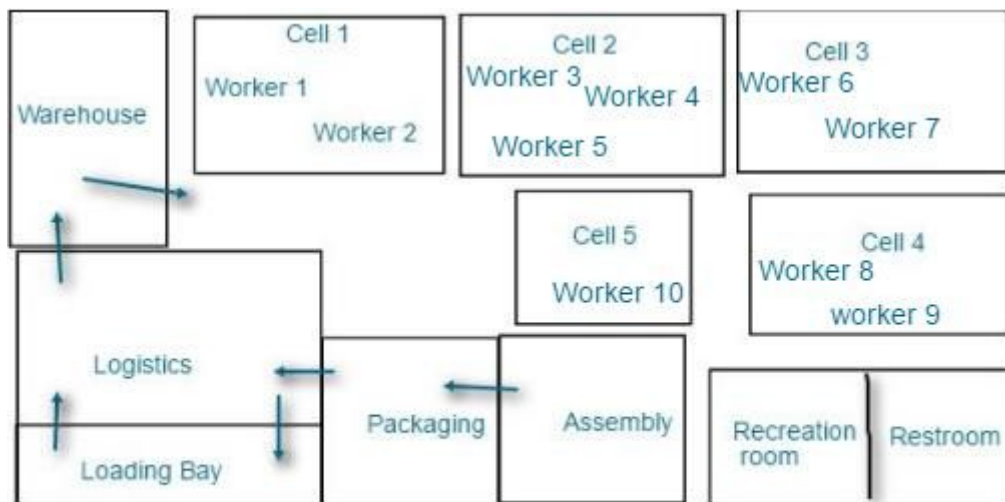
By working with TACNA, Western Sauna LLC will source available buildings and will lease a suitable building. TACNA will help the company source the building and negotiate the details of the lease. TACNA will simplify the unique and often complicated regulatory process of Mexico by obtaining and maintaining all necessary permits and aid the company in complying with the laws in Mexico.

Many plants in Mexico have ISO, QS, or other certifications. Employees and managers have often had detailed training in quality processes, lean manufacturing training and training in compliance with tight certification programs. With the right management, supervision and training, certifications that are obtained and elsewhere in the world can also be obtained and maintained in Mexico.

Mexico is an industrialized nation and produces many products. Furthermore, there is a concentration of manufacturing along the U.S./Mexican Border. Given this concentration, there are many material and supply items available in Mexico. Pricing of such is generally competitive. TACNA will assist Western Sauna in obtaining quotes in Mexico for some items. At a minimum, most companies usually buy all packaging and miscellaneous supply items in Mexico. There is a value added tax of 16% on items purchased in Mexico.

The site plan illustrates the layout of the Centro de Estudios Científicos (CEC). It features three main buildings: Edificio 1 (Almacén), Edificio 2 (Taller), and Edificio 3. Edificio 1 is a large rectangular building with a red border, labeled 'ALMACÉN'. Edificio 2 is a rectangular building labeled 'TALLER'. Edificio 3 is a smaller rectangular building. The plan includes dimensions for the buildings and the site, as well as access points labeled 'Acceso'. A north arrow is present in the upper right corner. The plan also shows a 'PATIO DE MANIOBRAS' and a 'Blvd. Díaz Ordaz' at the top.





Western Sauna LLC Manufacturing Plant Floorplan & cell layout.

The warehouse will be arranged in such a way that the loading bay will be the first thing that the delivery trucks will see, when the materials get delivered to the loading bay, the Operations Manager will ensure all the materials meet the quality standards after which the warehouse supervisor will make sure all of it safely makes its way into the warehouse through the logistics side of the manufacturing plant.

There will be two warehouses, one on the ground floor where it will only be storing wood and the other, much bigger on the first floor where other raw materials along with the tools will be inventoried.

The cell layout will be used where the workers will be divided in 5 cells. The first one will have two carpenters working on the framing of the sauna, the next will have 3 carpenters working on the interiors and walls, the third will have 2 working on the benches, the fourth will have 2 working on the floors, the fifth will have one working on the doors.

There will be space for them to bring all the parts and assemble them, after which they will be flat-packaged and sent out through the loading bay onto the delivery trucks on their way to individual clients in New York.

Office Space in New York:

Western Sauna will rent a 3 person private office in the 40-story building in the Diamond District, WeWork 575 Fifth situated in a prime Midtown location for easy access for the clients. The office space will cost 2,700-3,240 \$ per month.

The design theme for WeWork 575 Fifth makes use of color blocks and minimal graphics to create a relaxed, bright space that energizes employees and impresses guests, as a result, it will help with the work process. Apart from their hallmark amenities like personalized onsite support from Community Managers and endless microbrew, they also offer Wellness Room for a brief break from the daily hustle, or the building's amenities floor for even more workplace perks.

A look at the office space:



The private offices at this location feature glass walls to promote transparency at the same time, encourage collaboration among members. Each space is move-in ready and customizable to fit the needs and company culture. The Western Sauna LLC team will have 24/7 access at preferred location, desks, a chair, lamp, trash can, and filing cabinet.

Human Resources Management

The company specifically focuses on varieties of competent employees. Recruitment will be carried out for Western Sauna using methods like headhunting firms, employment agencies and external advertising. The Operation Manager will coordinate all human resources initiatives; recruitment, compensation, benefits, work-life balance, and training and employee relations.

The job design will be designed according the functional purpose by using the U-Form Organization. It is a pyramid management structure that emphasizes the efficiency process above customer service and the ability to adapt to changing markets. Also, The U-Form when together, it promotes new creation and sharing technical knowledge. And it improves specialization and economies of scale in monitoring, but the form cannot handle the complexity of multiple problems.

Western Sauna LLC will strive for flexible working hours, allocate work times, and division of labors. Western Sauna will hire highly skilled individuals from all genders, races and background. No discrimination will be tolerated in the hiring process, an individual with the skills and experience for the job will be the one to be selected without any prejudices.

The following positions will need to be filled for Western Sauna's operations to function well:

1. **Finance Director:** Financial Director will be responsible for reviewing financial reports, monitoring accounts, and preparing activity reports and financial forecasts. Financial managers will also need to investigate ways to improve profitability, and analyze markets for business opportunities, such as expansion, mergers or acquisitions. Overseeing the flow of cash and financial instruments, planning and directing the activities of workers in branches or departments, preparing reports as required by law, regulations or company policies and ensuring compliance with applicable laws and procedures will be additional duties.

Experience Level: 5-10 years.

Average Salary : Approximately \$7,000 per month.

Western Sauna LLC's salary & benefits: \$7,200 per month plus all the benefits mentioned below.

2. Marketing Director: Marketing Director will be responsible for developing, implementing and executing strategic marketing plans for Western Sauna LLC in order to attract potential customers. Their day-to-day tasks will include managing and coordinating marketing and creative staff, leading market research efforts to uncover the viability of current and existing products/services, and liaising with media organizations and advertising agency.

Experience level: 5-10 years.

Average Salary: Approximately \$5,200 per month. Western Sauna LLC's salary: \$5,200 per month plus the benefits.

3. Operations Manager:

Skills and Qualifications: Supervision, Coaching, Managing Processes, Process Improvement, Tracking Budget Expenses, Production Planning, Controls and Instrumentation, Strategic Planning, Dealing with Complexity, Financial Planning and Strategy, Automotive Manufacturing.

Experience level: 10-20 years.

Job Duties will include the following:

- Plan, manage and coordinate all human resources initiatives; recruitment, compensation, benefits, training and employee relations of Western Sauna LLC.
- Advise and coach managers on HR policies and programs including employee relations issues.
- Manage daily departmental operations, business planning and budget development of HR programs.
- Scheduling and assigning personnel to complete production plans; establishing priorities; monitoring progress; revising schedules.
- Establishing and enforcing organization standards to maintain quality service.
- Ensures timely repairs of equipment; evaluating new equipment and techniques.
- Provides manufacturing information by compiling, initiating, sorting, and analyzing production performance records and data; answering questions and responding to requests.
- Maintains safe and clean work environment by educating and directing personnel on the use of all control points, equipment, and resources; maintaining compliance with established policies and procedures.
- Maintains working relationship with the union by following the terms of the collective bargaining agreement.
- Resolves personnel problems by analyzing data; investigating issues; identifying solutions; recommending action.

Average Salary: Approximately \$5,500 per month.

Western Sauna LLC's salary: \$6,000 per month plus benefits.

4. Professional Installers:

Western Sauna LLC will hire 3 professional installers in New York. They will be paid per installation which would usually be twice a month.

Average salary: \$600 per month.

Western Sauna LLC's salary: \$600 per month.

Labor in Mexico is diverse, ranging from production labor to highly skilled professionals. The workforce is drawn from a young population with 42% of its 117 million inhabitants between the ages of 20 and 49 years old. The following positions will need to be filled from the labor force in Mexico:

5.Carpenters: The carpenters will need to be able to follow blueprints and building plans to meet the needs of clients, install structures and fixtures, such as windows and molding. Measure, cut, or shape wood, plastic, fiberglass, drywall, and other materials. Construct building frameworks, including wall studs, floor joists, and doorframes. Inspect and replace damaged framework or other structures and fixtures

Average Salary: Approximately \$3,500 per month.

Western Sauna LLC's salary: \$4000 per month plus benefits

6.Delivery Drivers: They will be required to operate a vehicle of some sort to deliver goods and other items to the clients. They will be tasked with loading products into their vehicle as well. They will spend a limited amount of time at the actual job site and more time commuting between their warehouse and delivery locations. Most of the work day is spent in a vehicle, with some loading time inside or outside depending on the company.

Experience Level: 5 years.

Average Salary:\$1000

Western Sauna LLC: \$1000/month.

On top of the monthly salaries, Western Sauna will provide the following benefits to its employees:

- Healthcare insurance (e.g., medical, dental): 40%
- Vacation/Paid time off: 37%
- Performance bonus: 35%
- Paid sick days: 32%
- 401(k) plan, retirement plan and/or pension: 31%

Process Design

In the process, Western Sauna LLC will have three major aims:

1.High Quality: Sauna rooms will be sold to many luxury hotels and wealthy clients in New York, and supremacy quality is needed to satisfy clients and hotels.

2.Dependably Delivered: Western Sauna LLC aims to produce and deliver to clients on time.

Through the handcrafts of carpenters, finished product will be a masterpiece.

3.Super Flexible: There will many clients and hotels prefer different concept. By being flexible, Western Sauna LLC can adapt to that and create sauna accord to their perspective. This is also give Western Sauna LLC a notable USP.

The process design implemented for the Western Sauna Corp.'s mass customized saunas is **jobbing process** also referred to as one-off production wherein products i.e, saunas are specially made for each customer and customized to meet their needs with low repetition and high variety. The process of completing the whole product depends on a skilled jobber or a team.

Most products produced in jobbing may be provided on site or completed in house and then transported to a given location which is what Western Sauna will be doing. Saunas will be made in Mexico and transported to US directly to the clients. Below is the participation between project manager toward clients.

Consultation: Starting off the project with clients engaging in a personal consultation with the Project Manager in person at the office with the goal to assist clients to identify what will best fit their needs while providing a clear picture of what the design, manufacture and installation processes will look like for the specific project.

Project Identify: Once the unique needs of the project has been identified, the project Manager will prepare a custom design and layout configuration .

Project Verified: With the confirmation of the layout design, clients will receive a list of prices with all features and add-ons included. And to ensure, no mistakes have are made before signing anything, the Project Manager will be present as a constant sounding board throughout the revision process. During the finalization of the plans, the client's general contractor will receive a full submittal packet. After a deposit, the manufacturing of the customized sauna will commence.

Manufacturing: The custom design then heads to the facility in Mexico to be manufactured by the team of highly skilled carpenters and technical professionals with the highest quality materials available. Depending on the design and material requirements, this process can take up to 8 weeks.

Delivery: Once completed, the sauna will be delivered to the client directly from the factory where the professional installers will be ready on site.

To make the process design go smoothly and effective, Western Sauna LLC uses mapping symbol to save times and increase efficiency. An example of sample will be shown when the project has been identified. There are seven important steps in Western Sauna LLC process.

Step	Symbol	Description of Process	Time	Distance (ft)
1	➡	Woods delivery to logistics company	30 minutes	
2	➡	Wood delivery to Tijuana	24 hours	

3	●	Upload woods from trucks	30 minutes	
4	■	Move to weight and quality inspection		165 ft
5	●	Move to machine to produce	10 days	
6	●	Packaging	2 hours	
7	➡	Deliver to New York	42 hours	
		Total	14 days 21 hours	

Production and Planning Control

Planning and Monitoring Process

During the **annual strategy planning** and budgeting process, the company plans its operations and ensures the efficiency of the operations. The implementation of the plans and changes in the operations are however, monitored through monthly, quarterly and annual reporting.

In Western Sauna LLC, risk analysis and risk management form part of the regular strategic planning process which will be performed each year and also part of the operational management. The aim of internal control and risk management is to ensure that all operations are efficient and profitable, compliant with provisions and operating policies.

Aggregate Planning:

Also known as medium-term planning is for periods up to two years ahead.

- 1.Forecast sales: Actual sale trends help adjust the initial forecast thereby solidifying the information on future sales pattern.
- 2.Make-or-buy decisions
3. Select common measures of aggregate demand

Supply Chain Management

A systematic approach to managing the distribution of goods from producers of raw materials, through manufacturers and eventually down to end users. Supply chain management affects manufacturing companies in a variety of ways, including the availability of inputs needed for production processes, costs and profitability of manufactured items, company infrastructure and ways in which companies interact with their suppliers and customers. Understanding the ways that supply chain management affects manufacturers from both a daily operational perspective and a strategic viewpoint is important for all managers and entrepreneurs in the industry.

Basically, supply chain is a prime role to fulfil the business such as planning and design. Beside that, SCM is essential for procurement, manufacturing and producing. Also, the company embrace the key

driven to Information Technology that will make the managing more global. In this 21st century, globalization changes the world, so being flexible is needed. The **ERP** (Enterprise Resource Planning) will be the tool to use to make the internal organization works more effective. Most functions are mentioned above and others are sales and finance management. And to strengthen the processes, some softwares such as **SAP** and **Oracle** will be used as well.

Workwisesoftware.com is has a strong brand and reputation. The company will buy the ERP which is around from 100,000\$. With 15 years serving in diverse industry, ERP can be trusted. The software takes control of 8 main functions.

- Engineering: SOLIDWORKS CAD integration, product configurator, BOM and routings.
- Planning: Advanced forecasting, CRP, MRP, and MPS
- Material: Inventory, MCM, mobile data collection, purchasing, shipping integration
- Production: Shop floor control, visual scheduling, production dispatch, lean/kanban, quality
- Marketing Sales & Customer Service: CRM, quoting & estimating, order management, commerce gateway, EDI, RMA
- Finance: Job cost, standard cost, AR/AP, Payroll, HR, credit card gateway, cash management and more.
- Analytics: Business metrics mobile app, event manager, mobile alerts and data journaling.

More information can be found in <http://www.workwisellc.com/erp-software/>

The Pull-based model for SCM will be the one for Western Sauna, which means the work release will be based on actual demand of downstream customers and behaving in a reactive manner as opposed to being proactive. The product's nature of being customized, requires the company to function only based on the actual demand. As soon as the customer order comes in, stock will be replenished and used to produce the product which will then be supplied.

Since the product offered is one-off, the operation tasks will be variable. As a result, the process is required to be flexible using universal/ general purpose equipment and skilled labour.

Logistic Management

Main raw materials Western Red Cedar in Canada will be delivered to a logistic company in British Columbia at the same time. The third party will deliver woods from its location to Mexico Tijuana. The exact time of delivery is two days by truck.

Tri-Linked System Inc office is located in 670 Sumas Way, Abbotsford, BC V2S7P4, British Columbia, Canada. As one of the fastest growing businesses in Canada. The service is reliable and has quality assurance. Also, there are many varieties of transportation; from standard to heavy and even oversized freight.

Tri-Linked System's philosophy is "Size, Strength and Stability". With size, huge amount of woods will be able to be delivered. Also, the strength is referring to that of truck that can handle and sustain the weight of raw materials. Lastly, stability provides safety to woods so it will not get damaged or deteriorated.

Risk Evaluation and Management

Risk management will be to minimize negative effects and other threats. Having low risk saves times, efforts and investment. Also, low risks can be minimized with evaluation risk management. The company takes control of every activities. Critically, all activities must be evaluated to see if it is effective or not. Possibility, there are still unexpected changes. To improve effective and efficiency plan in the company, it is vital to strictly focus on risk management.

First, Tri-Linked System Inc is a strong brand company and has superior reputation and with the capacity to assure the quality of the woods, so much risks will be minimized. Also, raw materials will be used to make high class Sauna Room, and it is important to let woods not getting destroyed and damaged.

Second, professional manager will takes control of people and machine at the factory. With strong leadership skills, manager will be able to build relationship with all carpenters, and work towards goals together. Hence, the machine has to be checked and cleaned once a week. With such environment, both manager and carpenters will work out together and goals will be achieved. Also, the company can have lean production. Lastly, risks will be cut off and easily managed.

Third, everything in the warehouse such as raw materials and other equipments have to be well checked to assure that there are no waste. Despite this, the company tries not to use too much utilities because it has high costs.

Fourth, it is essential for all raw materials to be delivered on times beside woods. It has to be delivered on time, so employees can process creating Sauna Room. Then, an outstanding products should be finished around 12 days and delivered to hotels or customers in New York.

Fifth, all carpenters will have a short training course with all the machines and processes in the factory plus the warehouse. When they have awareness toward machine, machines will be used properly and no risk harms them.

Sixth, one major risk in Tijuana is rain and pipe that can easily destroy house. Also, there are no major earthquakes around Baja California. Beside natural disaster, Tijuana is near San Diego the border and it causes a huge crime and it is critical to consider and seek for solutions. Factory and warehouse will have full security so it will not provide high risks.

Seventh, Tijuana connects to the city San Diego which is a trading border. By taking advantage of the strategic location, Western Sauna LCC is able to provide and satisfy the demand of sauna room to United State market. The economy in Tijuana is quite good and investment will have a huge tangible impact.

Lastly, two products will be sold in the market in United States, and with low tariffs will not affect the exporting from Mexico to the marketplace in New York. The company aims to have low risks so everything will run smooth as planned.

Quality Control

Quality of the product is the dominant factor that determines the failure or success of the company. The product will be sold to many Luxury Hotels in New York, so they expect the company to maintain high quality product. It is an aspect of satisfaction and important as far as company is concerned. Thus, it can be achieved through various techniques.

To achieve Quality Management at its full potential, the company ensures that there are no defects and errors during the process. There are following benefits which are possible:

- Low deficiency provides less variable cost which with labor and material.
- Reduction in pollution and unnecessary waste.
- The capacity to produce high quality products in the long term
- With highly skilled employees to do quality maintenance reduce maintenance cost
- Huge satisfaction for customers.
- Increase in employee motivation and awareness of quality.
- Increase in productivity and overall efficiency

Sustainability Management:

Economically Viable- Western Sauna LLC aims to become a financially viable business in order to survive and prosper in the long term - creating more jobs and serving even more customers.

Environmentally Responsible- Western Sauna LLC will work towards reducing our environmental footprint by managing the forests where we source our wood from sustainably. The company aims to centralize its ability to use natural resources sparingly, and to manage processes and products in a way that minimises their impact on the environment. The safety and quality of products and operations are defined in the company's quality, environmental, occupational health and occupational safety policies.

The supplier working with the company, The Teal Jones Group, recognizes the importance of respecting all aspects of the environment to consistently achieve its objectives and commitments in the long term for productivity and conservation of natural resources, and since 2004, Teal-Jones has planted close to nine million seedlings throughout British Columbia. They focus on high utilization levels of the resource while carrying out best industry practices.

Western Sauna LLC will carry out long-term product development in order to ensure and enhance the environmentally friendly aspects of its products. The products must be as durable and safe as possible and their environmental impact must be minimised at all stages of their life cycle.

The materials and components that will be used in the products will be tested regularly and the products must pass type approval tests. Material choices, energy consumption and modes of transport together account for a significant proportion of the environmental impact of our products in the production chain.

Pricing the product:

The price Western Sauna LLC charges its clients will have a direct impact on the success of the business. Following the basic rules of pricing i.e, the price Western Sauna LLC will charge must cover costs and profits and the price must be established to assure sales. Before setting the price, the cost of running the business has to be determined since it is vital that the price cover costs, otherwise cash flow will be negative and ultimately the business will fail.

Western Sauna will establish its prices through cost-plus pricing, where the plus figure not only covers overhead but generates the percentage of profit desired. Each Western Sauna will be sold for \$30,000 and up depending on the customization need. See Appendix 5 for information on the cost of utilities in Mexico.

Fixed Costs

Type of Cost	Cost/Month(\$)
Salaries	71,700
Average Utilities (Telephone+Electricity+water) $\$64+\$730+\$20+\$70+\$36$	920
Rent	8000
Equipment($33,800/3+150,000/25$)	17,267
Delivery truck	10,000
Total Fixed Costs	84,060

Variable Costs:

Type of Cost	Cost/Month(\$)
Raw Materials	7,000
Transportation	500

Total Variable Costs	7,500
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Breakeven Point:

Total Revenue= Total cost

Total Revenue=Fixed Cost+Variable Cost

\$60,000 X=84,060+7,500X

X=1.6

Unit at BEP is approximately 2 which means that Western Sauna will need to produce 2 saunas a month to reach Breakeven point.

Conclusion

Operations Management is one of the central functions of all organisations. It is delivery focused, making sure that an organisation transforms inputs into outputs successfully in an efficient and effective manner. Having been one of the key element in the improvement of business around the globe, Operations Management leads organizations to accomplish their goals with as minimum effort as possible.

With increasing competition in an open and global marketplace, Western Sauna LLC's survival and growth will become dependent on its ability to run its operations efficiently and effectively. Operations Management will play a major role in how Western Sauna LLC performs in the market, it helps establish benchmarks which immediately becomes an aim to achieve; review resources which includes supplies, inventory, money inflow and more; keep the workforce happy and establishing minimums to ensure quality.

Appendix

Appendix 1:

Factors in selecting country to get the wood supplies from :

Selected Country: Canada

1. **Number of suppliers of Western Red Cedar-** The location with a higher number of plantations will be ranked highly because having more suppliers in close proximity will favor the company. This factor will be rated at a total of 3.
2. **Climate -** Climate changes directly and indirectly affect the growth and productivity of forests through changes in temperature, rainfall, weather, and other factors. Western red cedar is characteristically a tree of mild climate and moist habitat. The country with the most

favorable climate for growth of forest will be rated the highest. This factor is very important as it can determine a continuous supply of wood for Western Sauna so it will be rated at 4.

3. **Transportation-** The cost of transportation should be low in order to reduce the cost of doing business. Very important as it will determine cost efficiency. Rated a 4
4. **Average price of the wood** - Reasonable prices should be offered especially when Western Sauna's factory demands for large quantity of wood. Very important so a total of 4.
5. **Exchange rate** - Companies that operate in more than one nation must be translated from foreign currencies into U.S. dollars. Exchange rate fluctuations make financial forecasting more difficult for these companies, and also have a marked effect on unit sales, prices, and costs. If the wood is exported from this country to the country where the factory is located, it helps if the value of the currency in this location is lower than the currency where the factory is located. This will reduce the cost of this country's goods in the country where the factory is located and demand will increase. One of the most important factors. Rated a 5.
6. **Easy access to road, seaports and airports:** Having easy access to road, seaports and airports ensures easy delivery of wood supplies to the manufacturing plant which will be located in another country.
7. **Risk of Natural Disaster:** has a huge potential to interrupt the operations. A country where risk of natural disaster is to a minimum is preferred over one with high level of risks. Very important.
8. **Political:** With stable politics, it makes the operations run smoothly. So a country with a stable political condition is preferred.
9. **Economics:** Can affect the exchange rate and the price.
10. **Legal System:** There should be the ease of doing business in the particular country. The legal systems of the country need to provide ease to start a business, deal with construction permits, register for property, pay taxes, trade across borders and provide transparency in business regulation.

Criteria: Selecting the country to get wood from	Weight(0-5)	Unweighted Score			Weighted Score		
		Canada	Sweden	Finland	Canada	Sweden	Finland
Number of Suppliers	3	3	2	2	9	6	6
Climate	4	4	4	4	16	16	16
Transportation	4	4	3	3	16	12	12
Average price of Western Red Cedar	4	4	4	4	16	16	16
Foreign exchange Rate	5	3	4	3	15	20	15
Easy access to road, seaports and airports.	4	4	4	4	16	16	16

Risk of natural disaster	4	2	1	1	8	4	4
Political stability	5	5	5	5	25	25	25
Economic	5	5	4	4	25	20	20
Legal	5	3	5	4	15	25	20
Total	43	37	36	34	161	160	150
Winner: Canada							

Factors in deciding location for Setting up Factory(Country Selection):

Mexico

1. **Free Trade Zone/Agreement:** This factor provides incentive in custom duties and levies. Therefore, the country which has a free trade agreement with Canada i.e, the country from where the wood will be sourced will be highly favored. Rated a 4.
2. **Low labor costs:** Rated very important to keep Western Sauna's production costs minimal. Rated a 5.
3. **Mild Climate** - The location needs to have ideal climate to save on heating and cooling of facilities.
4. **Exchange Rate:** If there is a depreciation in the value of the currency of the country where the factory is located, it means that the exports will be cheaper while imports more expensive. So if the exchange rate of the country depreciates in terms of the country where the saunas will be supplied, it means exports are cheaper and so it will be more favorable.
5. **Raw materials Proximity:** One of the most important considerations is the availability of raw materials at the location of the factory since one of the biggest advantage of having that is it involves less cost in terms of transportation cost. In addition proximity to the country from where the wood will be sourced is of utmost importance.
6. **Political situation in the country:** It has to be stable in order to avoid having any problem when carrying out operations in the country.
7. **Reasonable cost of utilities-** The country with reasonable cost of utilities will be highly favored as electricity and telephone bills will need to be maintained.

Criteria: Selecting country to manufacture in.	Weight (0-5)	Unweighted Score			Weighted Score		
		Mexico	Paraguay	Honduras	Mexico	Paraguay	Honduras
Free Trade Zone/ Agreement	4	4	0	4	16	0	16
Low labor cost	5	5	3	3	25	15	15

Mild Climate	4	4	3	4	16	12	16
Exchange Rate	4	4	2	3	16	8	12
Raw materials proximity	4	4	1	2	16	4	8
Political Stability	5	3	2	2	15	10	10
Reasonable cost of utilities and continuous availability	3	3	3	2	9	9	6
Total	29	27	14	20	113	58	83
Winner: Mexico							

Factors in deciding location for Selling the products(Country Selection and State):

USA

1. **Proximity** to manufacturing facility: The distance from the manufacturing facility plays a big role as it determines the delivery time to customers and cost of transportation(logistics). Very important
2. **Luxury Hotels**: Since Western Sauna will be targeting five star hotels, the number of luxury hotels in the country should be very high to ensure there is continued demand for Western Sauna's saunas.
3. **Tourism**: Rated very important as it usually happens that with increase rate of tourism to the country, number of tourists who stay at the luxurious hotels and end up using their facilities increase as well . The more number of tourists, the more demand for saunas. Very important.
4. **Utilities**: The average cost of utilities need to be taken into account.Lower the cost, the better the location will be.
5. **Competition**: It is essential to decide the location by finding out if there are any competing companies so that Western Sauna can try to avoid a country with very fierce competition.
6. **Transportation**: It is important to aim for the lowest cost of transportation when the product has to be delivered from manufacturing plant to the client's hotels.

Criteria:Selecting country to sell to.	Weight(0-5)	Unweighted Score			Weighted Score		
		USA	Russia	Estonia	USA	Russia	Estonia
Proximity to manufacturing plant	5	5	2	3	25	10	6
Number of luxury hotels	5	5	4	4	25	20	16
Tourism	4	4	4	3	16	16	12

Utilities cost.	4	3	3	4	12	9	12
Competition	3	3	2	2	9	6	4
Transportation cost	3	3	1	1	9	3	1
Total	24	23	16	17	96	64	51
Winner :USA							

Appendix 2:

Am-Finn Sauna & Steam

SWOT

Strengths:

- ❑ Their former clients include the likes of FX Studio and Morgan Stanley. Testimonials of past clients praise their performance.
- ❑ Having been in the business for so long, they know the pitfalls and mistakes that derail delivering a great product at the end of the day and so make sure not to do so.
- ❑ Their innovative products are eco-saunas, pre-cut custom saunas, and modular saunas along with commercial steam room, in addition to Himalayan salt saunas.
- ❑ Offers electric heaters, thermometer, sauna light, sauna room door handle and so on.

Helo Group Ltd.

Strengths:

- ❑ Their products are exported to more than 80 countries.
- ❑ With the extensive research and development program, it gives them the advantage of developing the best sauna and steam related products which will enhance the quality of their final products i.e, sauna rooms.
- ❑ Helo Ltd has sauna room, sauna heater and steam generator manufacturing plants in Finland, Sweden, Germany and the United States.

Appendix 3:

The Programme for the Endorsement of Forest Certification (**PEFC**) is an international non-profit, non-governmental organization dedicated to promoting Sustainable Forest Management (SFM) through independent third-party certification.

PEFC works throughout the entire **forest supply chain** to promote **good practice in the forest** and to ensure that timber and non-timber forest products are produced with respect for the highest ecological, social and ethical standards. Thanks to its **eco-label**, customers and consumers are able to identify products from sustainably managed forests.

PEFC is an umbrella organization. It works by endorsing **national forest certification systems** developed through **multi-stakeholder processes** and tailored to local priorities and conditions. With

37 endorsed national certification systems and more than 258 million hectares of certified forests, PEFC is the world's largest forest certification system.

Each national forest certification system undergoes **rigorous third-party assessment** against PEFC's unique Sustainability Benchmarks to ensure consistency with international requirements. These Benchmarks have been developed based on internationally-recognized, ongoing and long term, intergovernmental processes and guidelines for the promotion of SFM to ensure compliance with globally agreed requirements.

The Benchmark criteria are regularly revised through multi-stakeholder processes involving participants drawn globally from civil society, business, governments, labour and research institutions to take account of new scientific knowledge, societal change, evolving expectations and to incorporate latest best practice.

Appendix 4:

Competitive advantage of Just-in-time Techniques:

JIT offers a range of competitive advantages, some are listed as follows:

1. Inventory- JIT allows low set-up times and small lot sizes.
2. Layout-With the reduced space for inventory, there is an organized workplace with flexible machinery and group technology.
3. Suppliers-Creates a supportive supplier relationships with few vendors who provide quality deliveries on time and directly to work areas.
4. Scheduling- Suppliers are informed of schedules and as a result, there's zero deviation from schedule.
5. Employee empowerment - Fosters empowered employees who are cross-trained as well.
6. Commitment- Ensures the management, employees and suppliers are supported throughout the process.

Appendix 5:

Utilities expenses(Tijuana) :

Telephone Services

	Price per additional minute call
LOCAL(Local and MX Border-USA Border)	\$0.07
REGIONAL(Rest of USA and Canada)	\$0.30
Rest of the world	\$0.61

* To calculate the average price of telephone services, an average was calculated from the costs seven plans, these plans range from the 30 USD to 30,000 USD

Cablemas Infinitum		Telnor Source	
Bandwidth	Cost per month	Bandwidth	Cost per month
100 Mbps	\$1,899.00	STM1 (155 Mbps)	\$775.00
30 Mbps	\$949.00	50 Mbps	\$559.48
10 Mbps	\$479.00	20 Mbps	\$430.17
6Mbps	\$299.00	10 Mbps	\$300.86

Source: Documents of internet rates from each company.

2016 Telephone rates for Ensenada, Mexicali, Rosarito, Tecate and Tijuana

Telephone Service					
Type	Monthly Fixed Cost	Local Calls	Long Distance in México	Long Distance To U.S.A.	Internet
Residential	29.95	Unlimited	Unlimited	Unlimited	20 Mbps.
Commercial	39.95	Unlimited	Unlimited	Unlimited	50 Mbps

Long Distance Costs	
Long Distance Services	Cost/Min
National	0.0906

Border-Border	0.12 00
Northern US Strip	0.28 86
Southern US Strip	0.28 86
Canada	0.33 42
South American, The Caribbean, Alaska	0.59 08
Europe, Africa, Mediterranean Basin	0.55 09
Central America	0.28 15
Rest of the world, Hawaii, Israel	0.68 00

Electricity Rates:

$\$0.25/\text{kWh} * 35,000 \text{ kWh} = \$8,750/\text{year} / 12 = \$730/\text{month}$

Water Rate

Cost per 1000 gal. \$16.77

1,200 gal = \$20

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