# INDIVIDUAL ASSIGNMENT

## TECHNOLOGY PARK MALAYSIA

### BM019-3-3-ENTRE

### ENTREPRENEURSHIP

### INTAKE CODE – NP3F2104IT

**HAND OUT DATE : 28 December 2021**

**HAND IN DATE : 25 March 2022**

**WEIGHTAGE : 40%**

**Topic: iRobot**


**Submitted by:**

**Bishwo Nath Sapkota**

**NP000304**

**Submitted to:**

**Mrs. Sajani Dhakal**

**Lecturer**


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**INSTRUCTIONS TO CANDIDATES:**

1. Submit your assignment at the administrative counter.
2. Students are advised to underpin their answers with the use of references (Cited using the Harvard Name System of referencing).
3. Late submissions will be awarded zero (0) unless extenuating Circumstances (EC) is upheld.
4. Cases of plagiarism will be penalized.
5. The assignment should be bound in an appropriate style (comb bound or stapled)
6. Where the assignment should be submitted in both hard copy and softcopy, the softcopy of the written assignment and source code (where appropriate) should be on a CD in an envelope/ CD cover and attached to the hardcopy.
7. You must obtain 50% overall to pass this module.

# ACKNOWLEDGEMENT

Primarily, I would like to express our gratefulness and thankfulness to the Module lecturer of Entrepreneurship (BM019-3-3-ENTRE), Mrs. Sajani Dhakal mam for her guidance throughout the module including this assignment and for providing us with instant feedbacks through any means possible.

I would like to show a sense of respect to the coordinator of BSc.IT, Mr. Jyotir Moy Chatterjee for his supervision. I am equally grateful to the Dean of Lord Buddha Education Foundation (LBEF), Dr. Sandeep Kautish for his instructions. I would also like to acknowledge all the teaching and non-teaching staffs of LBEF, classmates, friends, seniors and entire LBEF management team for providing capable help, in the tough time of pandemic as well.

I am thankful toward our entire BSc. (Hons.) IT faculty members, LBEF Campus and Asia Pacific University (APU) for developing and implementing such a practical module and giving us an opportunity to asses this real-case project.

**Bishwo Nath Sapkota**

**NP000304**

**6th Semester (Level – 3)**

**BSc. (Hons.) in Information Technology (IT)**

**Lord Buddha Education Foundation (LBEF)**

# Table of Contents

# 1. Introduction

The business which is just starting, that is still in the early phases of development can be known as a startups company. A new company is formed by individual entrepreneurs or more than one individual entrepreneurs who want to produce a product of their choice or it can be any services that they feel will be in greatly in needed. Since these enterprises often start with large costs and little income, they turn to a range of investors, including venture capitalists, for funding. In simple understanding that businesses or organizations that focus on a single product or service that the founders want to market can also get success in the market however, these businesses usually lack a well-developed plan to run the business and more importantly the necessary funding to progress to the next level of growth. The bulk of these companies were started using money from their founders. Many setup look for funding from outside sources such as family and friends which is bad for long term. Silicon Valley is known for its venture capitalist society and is a popular startup location, but it is also considered the most difficult arena. Start-ups might utilize seed money to invest in research and development of their business concept. Analysis of market assists in establishing a company's or service's desire. A detailed business plan, on the other hand, covers the overall goals of the company, objective, and goals, as well as sales and development strategies. robot Corporation is a developer and manufacturer of Burlington, Massachusetts behaviour-based artificial intelligence machines for the user and military. The company's proprietary expertise, aware robot intelligence systems, permits the robot to move around obstacles. This has resulted in the growth of mopping units, Roomba robot vacuums, and Scooba wet mopping robots.

Robot corporation is a developer and manufacturer of behaviour-based artificial intelligence robots for the consumer and military industries situated in Burlington, Massachusetts. robot intelligence systems, the company's unique technology, enables the robot to maneuver around obstacles. As a result, the number of mopping units, Roomba robot vacuums, and Scooba wet mopping robots has increased.

This report shows the details information about iRobot company, from the start to till now. All the achievements of the company is also shown with the timeline from 1990 to till now as well as detail background of the company. Company business model is also shown and the challenges faced by the iRobot company is also written with the suggesting solution to it.

## 2. Background of the company

iRobot was established as IS Robotics, Inc. In 1990, the director of the MIT Artificial Intelligence Lab. It was done by Rodney Brooks and his two pupils, iRobot CEO Colin Angle and Board Chairman Helen Greiner. Brooks eventually left for higher study an one of the famous university for the further study of computer science subject at *Stanford University,* where he earned a *Ph.D.* In this subject, he began teaching at Stanford in 1981 and toured the country to find a place at MIT in 1984.

Australia was the birth place of brooks in 1954 he was born and, Despite the fact that he has restricted access to technology, was fascinated with computers. He persisted in constructing a small computer using old phone switches and *light bulbs* and programming it to play the game called tic-tac-toe. He studied mathematics at *Flinders Universit*y in Southern part of the australia because the institution did not offer computer science programs.

Two of the most talented protege "brooks" were a corner and Kim (Greiner) and friends since the new student drawn with a concern about the robot. Long Island, Mother's Mathematics and Science Peace was raised in Long Island, and her father is qualified to study chemistry at university. She began to play chess games daily with her father of 5 years old, and at first he tends to mathematics and dynamics. All of this was a movie trick, and I found that the actor replied to R2D2. She ultimately decided that it would ultimately visit MIT to prepare for the first day of R2D2. At that time she was eleven years old when she remember the film S*tar Wars* and was captivated with *R2D2* Droids. She later attended Massachusetts Institute of Technology, where she obtained a master's degree in computer science.

She also had worked in big and famous company as an intern which is at NASA's laboratory in Pasadena, California, on space repair robots.

iRobot, the world's biggest consumer robot maker, creates and builds robots that can do more, both indoors and outdoors. With the introduction of the Roomba robot vacuum cleaner in 2002, iRobot established the category of domestic cleaning robots. iRobot is now a multinational corporation that has sold over 31 million robots globally. The iRobot product range comprises unique technologies and innovative cleaning, mapping, and navigation principles, as well as the Roomba robotic vacuum cleaner and the braava family of vacuum cleaner robots. Engineers at iRobot are developing a robotics and smart home ecosystem.

## 2.1 Vision and mission of the company:

**Vision:**

Vision should be vital part while opening the company it determine the long term goal of the company and motivated the company member and CEO to make their company vision come true. The iRobot Corporation Vision Report is a paper that defines the aims for iRobot Corporation's strategy, management, and overall decision-making process.

**Mission:**

The iRobot mission statement is a public document that outlines the company's core values and strategic objectives. The iRobot Corporation mission statement also highlights the organization's services and products, which helps to define the organization's purpose. iRobot Corporation's operational goals, the processes used to achieve them, target customer groups, and operating regions are all defined in the mission statement.

**iRobot company timeline and their past achievements :**


Figure 1: Timeline of achievement of iRobot company

iRobot has sold over 30 million robotics globally since its founding an *1990* by roboticists at the *Massachusetts Institute of Technology* with the goal of making real-life robots a reality rather than fantasy. The firm has a lengthy history of invention and has created a few of the world's most notable robots. Its robots have solved the riddles of Giza's Great Pyramid, discovered dangerous undersea oil in the *Gulf of Mexico*, and saved hundreds of lives in conflict and disaster zones throughout the world. With the Roomba, iRobot exposes the first convenient home robot, paving the way for a whole new class of cleaners. The *first* FDA-approved videoconferencing robot arrives in big *hospitals*, and brought the *first* FDA-approved videoconferencing *robot* arrives in hospitals. Including over decades of experience at the forefront of the robotics business, iRobot is devoted to developing robots that help people clean smarter and accomplish more in their everyday lives.

It all began in 1990. Colin Angle, Helen Greiner, and Rodney Brooks, all of MIT, co-founded iRobo in 1991, and the business produced the first robot suited for space travel in 1991. Another robot that identifies and removes explosives in surf zones was created by the business in 1992.

In 1998, the business participates in and wins a DARPA contract to design a tactical mobile robot. This was the company's first contract, and it was a successful move that led to the creation of PackBot.

After another major event occurred at the corporation in 2002, a few things changed, such as the introduction of Roomba, a vacuuming robot. PackBot was successfully deployed with our troops for the first time. In collaboration with the National Geographic Society, the business also took part in exploring Egypt with a robot.

Another important event occurred in the firm; it launched the Create, Verro, and Looj robots at the same time for public purchase. The launch is a mobile robot that cleans the pool and gutters.

Similarly, in 2008, the company expanded into maritime robots and the lunch roomba pet series, which is a cleaning robot that will help you clean your house, and the company's biggest win this year was winning a contract to develop the LANdroid communication robot, which will be very useful and one of the company's most appealing products.

Between 2010 and 2011, the firm made the following changes: it introduced a new series of robots with a different name and distinct features. It also produces FirstLook, a tiny light. The firm also obtained a co-sponsorship during National Robotics Week.

In 2013, the firm introduced a new kind of robot, and it was pleased to sell more than ten million household robots throughout the world.

From 2017 to 2019, the firm introduced new products and made them available worldwide. A new office in Japan was established with the headquarter of the Japanese product, which will enable the company to manufacture in Japan and sell more than two million home ronots throughout the world.

From 2020 until the present, a new model is introduced, with a new function that allows the robot's color to be changed. It celebrates the company's success by commemorating the 30.30 day when the sales hit $30 million and the company's 30 years of empowerment.

## 3. Business strategy

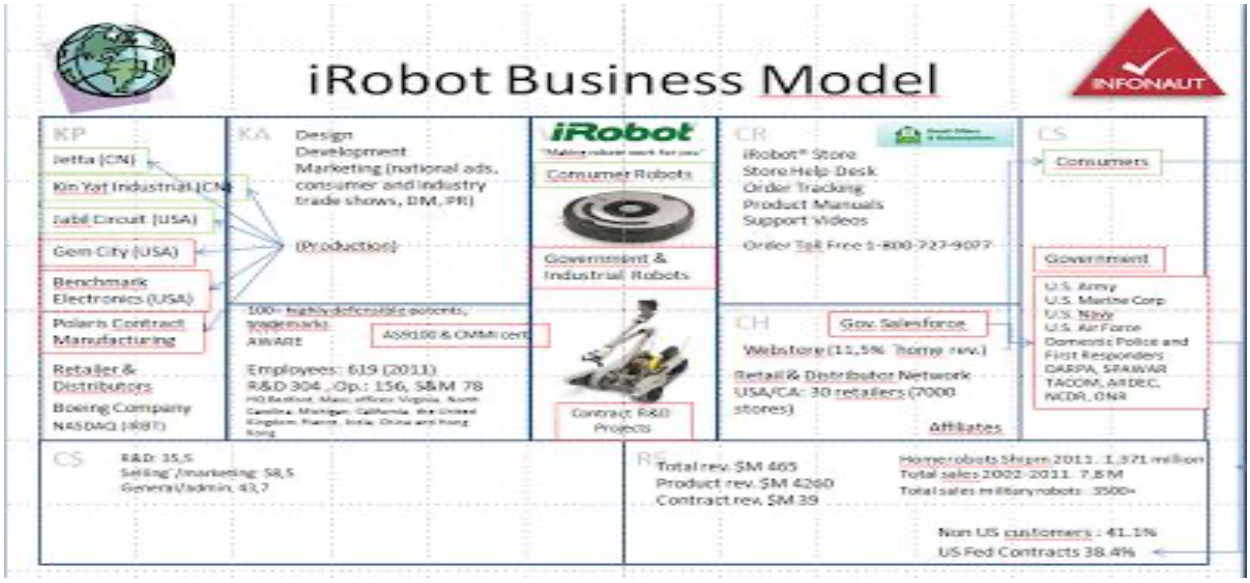


Figure 2: Business model of iRobot company

According to Porter's Generic competitive strategies, iRobot should pursue this strategy in order to become the most valuable start-up company: Whether a business profitability is high or lower than the business average is calculated by its relative position in the business. When *the two basic types* of *competitive advantage* are combined with the kind of activities a company wants to pursue, three key strategies for outperforming the competition emerge: cost leadership, differentiation, and concentration. keeping a top competitive is the fundamental underpinning for outperforming the market in the long run. The competitive advantage of a corporation can be classed as low-cost or distinctive. Budget and differentiation-focused focus methods are the two types of focus strategies.

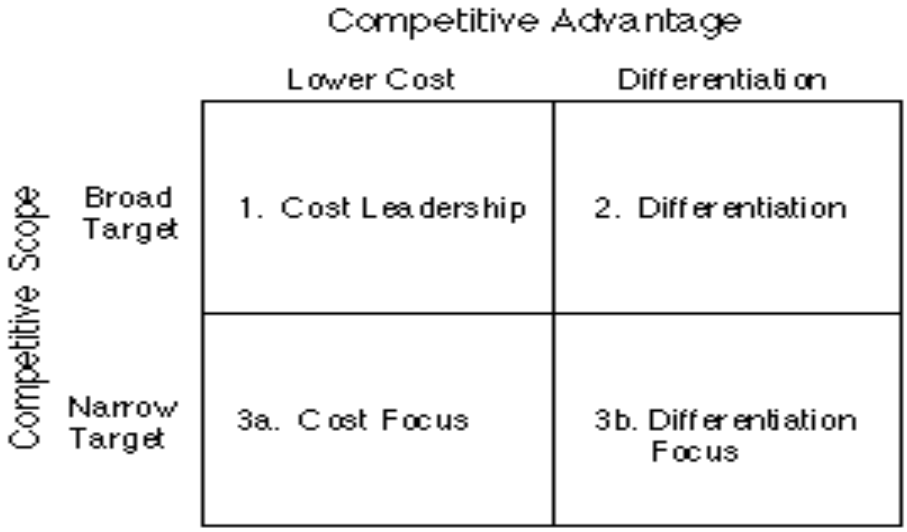


Figure 3: Porter's Generic Competitive Strategies

## 3.1. Focus:

The focus technique is available in two varieties. The generic focus strategy focuses on a narrow competitive scope within a certain sector. iRobot should use this strategy to keep track of competitive and focus on improving the product of the company. By using the advance focus technique the company can grow their business and fgain good amount of profit.

## 3.2. Cost Leadership:

Basically a cost leadership indeacate in caomany that all the cost management to make a company cost effective. It aims to be able to manufacturer the goods in lowest-cost in business. As long as it can charge prices that are close to or equal to the industry average, it will be successful. a company that *achieves* and maintains total cost *leadership* will be *above average* in its *industry*. Depending on the industrial structure, many sources of cost advantage exist. *proprietary* technology, *privileged* access to raw resources, and other *considerations* are examples of this.

iRobot should use this strategy to manage the overall cost so that the company all transection will be effective and overall company will gain profit and can further invest into other resources.

## 3.3. Differentiation

To make any product the product must be unique and should give great and different vibe than other product or any existing product in the market. This strategy describe to make your product unique so that customer want to buy it.

iRobot should use this strategy to make their product unique and one of a kind in a market so customer will be egger to by the product.

# 4. Challenges

Any two challenges that the company had faced recently are:

## 4.1. Global chip shortage

The company had a great quarter, but it was hampered by a global chip shortage and problems with the system supply chain. Not only have company executives been affected, but they also see potential here. iRobot is aware of their concerns and has announced a company-wide effort to address them in order to prepare for the second wave of economic recovery following COVID-19. This second wave will be driven by the recovery of global supply chains and the resumption of business normalization across broad sectors of the S&P 500. iRobot is well positioned to benefit from this resurgence.

## 4.2. Tariff

In 2019, when most of its production was based in China, the company was shaken by a 25% tariff imposed by the Trump administration. This fee has been temporarily suspended, and iRobot has received a $57 million refund in 2020. However, the waiver ended last year, and the company expects to pay $43 million in 2021 fees. Engle said that burden will be reduced to "1.5 million" this year as the company moves production to Malaysia. He said ultimately iRobot products for North America will not be made in China, but products sold in other markets will still be made in China.

In 2020, offline retail stores, which account for approximately 55% of iRobot sales, were closed due to the COVID-19 lockdown. However, it seems that consumers are more concerned about safety as they are confined at home due to concerns about infectious diseases. As a result, online sales of iRobot products increased by 28% in the fourth quarter of 2020.

Suggestion for above challenge are:

Product expansion and new operating environments.

Increasing in production of chip as per demands.

# 5. Conclusion

iRobot's approach of expanding the scope and capabilities of its existing military product line while releasing new licensed commercial software created for its own use is a wise and conservative move based on the company's demonstrated strengths. small producers should avoid the usual “do everything” strategy that can be distracting.

According to Dyer, the strength of this robot is its capacity to receive solids, healthy innovation in laboratories, and in the field as a practical, helpful robot that causes high production proportions. as the firm grows, so will its efficiency in production, design, and licensing, resulting in a cost model that is significantly less asset-intensive and a profit margin that is far over the single digits. anyone who has seen the most recent model rooms, as well as those who operate in an environment with furniture, dogs, or children, may be able to develop a voluntary system capable of recovering from tiny faults and overcoming minor hurdles. VoiceBA's most recent decoration is designed to collect clubs and other obstacles manually, manually, manually, manually, manually designing "clear modular" and repairing folders, and how to create products and services. Wednesday You can resist a non-proprietary robot on Wednesday.According to Robotics review, iRobot's favoured position in the present US military supply chain, as well as the US military's more automation-centered approach, will certainly boost the company's prospects much above the twenty five persantage rise financial analysts forecast for the next five years.

Hence, iRobot Corp. is the undisputed market leader in robotics.For the first time in the private market, this has made home robots reliable and accessible to the public. On the defensive side, he overpowered the giant contractors by supplying robots that could complete the mission today, not ten years later. Its fundamentals show just how much  the dual roles of consumers and the military can affect the company.

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## Marks Allocation

| **Introduction**<br>**(10 marks) -** Introduction to the company. Provide an objective of the report. | **1-4** | **5** | **6** | **7** | **8-10** | **Marks** |
|---|---|---|---|---|---|---|
| | An irrelevant introduction. Objective of the report is not stated. | A poor introduction. Objective of the report is stated but irrelevant to assignment requirements | An average introduction. Objective of the report is stated, and somewhat relevant to assignment requirements. | A persuasive introduction. Objective of the report is clearly stated, and fulfilled the assignment requirements | An example of excellent introduction. Objective of the report is clearly stated, and fulfilled the assignment requirements and Bloom's taxonomy | |
| **Knowledge and understanding**<br>**(30 marks) -** understanding of the company background and elaboration of the company timeline. Application of business model and key success factors | **1-13** | **14-15** | **16-19** | **20-22** | **23-30** | |
| | A totally irrelevant description of company background and unconnected elaboration of company timeline. An irrelevant description of business model and key success factors | A poor description of company background and poor elaboration of company timeline. A poor description of business model and key success factors. | An average description of company background and company timeline. An average description of business model and key success factors. | A persuasive description and effort to illustrate company timeline using a self-made diagram. A persuasive description of business model and key success factors | An example of excellent effort to illustrate and elaboration of the company timeline using an interactive self-made diagram. An example of excellent description of business model and key success factors | |
| **Analysis and discussion**<br>**(30 marks) –** analysis of the challenges faced by the company | **1-13** | **14-15** | **16-19** | **20-22** | **23-30** | |
| | A totally irrelevant analysis and discussion | A poor analysis and discussion | An average analysis and discussion | A persuasive analysis and discussion | An example of excellent analysis and discussion | |
| **Synthesis**<br>**(10 marks) –** making quality conclusion | **1-4** | **5** | **6** | **7** | **8-10** | |
| | A totally irrelevant synthesis and evaluation | A poor synthesis and evaluation | An average synthesis and evaluation | A persuasive synthesis and evaluation | An example of excellent synthesis and evaluation | |
| **Conclusion and Recommendation**<br>**(20 marks) -** suggestions on how to manage challenges faced by the company | **1-8** | **9-10** | **11-12** | **13-14** | **15-20** | |
| | A totally irrelevant prescription | A poor prescription | An average prescription | A persuasive prescription | An example of excellent prescription | |
| | | | | | **Total –** | |