Enrolment No. _____

AHMEDABAD UNIVERSITY

AMRUT MODY SCHOOL OF MANAGEMENT

UNDERGRADUATE PROGRAMMES

2023-2024 WINTER SEMESTER

END TERM EXAMINATION

TOD 323: OPERATIONS STRATEGY

Total Marks: 100

Duration: 3 hrs.

Date: 21.04.24(11AM to 2 PM)

No. of printed pages: 01

SECTION -A (5x 14 Questions= 70 Marks)

1. Discuss 4Vs of Operation?
2. Discuss the Top Down and Bottom-Up approach to Operations Strategy?
3. In the context of improvement strategy, describe the Importance- Performance Matrix?
4. What is the role of the Central Operations function in strategy implementation?
5. What are the monitoring and control types propounded by Hofstede?
6. Write a short note on the Balanced Score Card approach?
7. Give an example of Type-I and Type-II Error in strategy implementation?
8. What role does alignment play in strategy formulation?
9. Discuss the Product Process Matrix with examples?
10. Discuss the Henderson Clark Model of product development?
11. Describe the five generic stages of Product Development
12. What is the role of ERP in improving process operations?
13. With respect to process technology write briefly on the concepts of Scalability, Automation and Coupling?
14. What is 3PL in Logistics?

SECTION – B (10x 3 Questions = 30 Marks)

Case let : Innovation in Indian MSME(Medium, Small and Micro Enterprises) Sector

Jugaad Innovation

The term Jugaad Innovation was popularized by Radjou et al through their book.(Radjou, Navi; Jaideep Prabhu and Simone Ahuja (2012). Jugaad Innovation. Jossey – Bass Wiley Publication) They have listed 6 principles of Jugaad Innovation: seek opportunity in adversity, do more with less, think and act flexibly, keep it simple, include the margin, and follow your heart. Even Western or US large corporations have adopted Jugaad innovation strategies not by increasing their R & D budget, rather shifting from a structured, top-down approach to innovation to an open, adaptable culture that leverages stakeholder and employee creativity. These Jugaad Innovation principles are similar to the 10 core competencies of Frugal Innovation developed by the Frugal Innovation Lab at Santa Clara University: ruggedization, lightweight, mobile enabled solution, human centered design, simple in features and functional requirements, new distribution models through non-conventional channels, adaptation to local conditions and constraints, high use of local resources, ecologically friendly, and affordability. Radjou, Prabhu, and Ahuja believe that the structured approach to innovation favored by mature large companies cannot deliver agility and differentiation needed in this globalized world. Their research point to the fact that top-down R&D systems are unable to open up and integrate bottom-up input from employees and customers. However, in this globalized world, integrating knowledge from across spectrum is essential; and a new approach to innovation – like frugal, flexible, and participative Jugaad – is needed. Birtchnell equates Jugaad as a practice accompanied by indigence and corruption in traditional interpretations but avers that the notion of Jugaad had brought India 's emergence into the global economy. He thinks that this term has seen unprecedented popularity and is now proffered as a development tool and a robust solution to global recession. Jugaad is part of method for working within resource constraints as _Innovation '. He has suggested that far from being disruptive innovation ', Jugaad in practice is part of India's systemic risk. Greenhalgh surveyed economic studies to understand relationships between IPR, innovation and diffusion in India. Through this survey, he suggested that innovation should be employed to meet the demands of large number of unskilled workers. He laid more emphasis on inclusive innovation as suggested by the World Bank through its recommendations of speeding innovation and technology diffusion in India. Innovation under local conditions is crucial for the Indian MSMEs. Innovation should consider concept of scale in the Indian context, customer size, reach, price points, and leveraging local resources through cultural and regional insensitivities. This will be possible through indigenous pervasive models, rather than emulating established global models. Indian MSMEs should re-assess applicability of these models within the Indian context. India has always plenty localized creativity, or Jugaad – literally meaning working around lack of resources by making best use of available resources and coming up with quick-fix solution. The challenge for the Indian MSMEs is the institutionalization of this Jugaad innovation. Indian MSMEs innovate and offer new products that address local problems, though this innovation does not sustain. There are MSMEs that offer more than one innovative product or service. Hence, they should adopt incremental innovation to ensure competitiveness. All Indian MSMEs have distinct challenges – stiff competition from bigger and established players in the market and imports. This necessitates that MSMEs innovate a product to fill the void created by bigger players (product innovation) or streamline processes to enable more level playing field against bigger players (process innovation). Moreover, MSMEs'ability to innovate is restricted by two challenges – strategic and operational. Hence the need for creating an enabling environment for the promotion of innovation in India, particularly for the MSME sector.

The following case lets or examples of product and process innovation in Indian MSME are evident of the success strategies employed by these examples.

Embrace Global: Keeping Newborns Warm: 15 million premature babies are born each year, with

three million dying within the first month of their lives because of infection, low birth rate, asphyxia, and birth trauma. Many people put premature infants near light bulbs, coals or hot water bottles, but these —solutionsl are ineffective and often hazardous to the babies 'health. As per WHO, two thirds of newborn deaths are preventable and that half of babies in developing countries do not receive skilled care at the time of birth. India has a high mortality rate for newborns following hospital discharge. Embrace is a social enterprise specializing in infant healthcare, founded by Jane Chen, Linus Liang, Rahul Panicker, and Naganand Murty. Embrace is a thermal cocoon-like wrapper for the newborn.

Aravind Eyecare: **The Gift of Sight** 39 million people worldwide and 12 million in India suffer from blindness, a condition that restricts their autonomy and ability to work. 80% of blindness is treatable. According to Aravind, —a 10-minute cataract surgery will restore sight to 7.5 million and a pair of spectacles will help another 2.4 million see. Unfortunately, less than 10% of this population has been healed. As per 1993 HBR case study, United States had twice India 's number of ophthalmologists (16,000) for a quarter of India 's population size. India 's infrastructure was disproportionately skewed to urban areas containing less than 1/3rd of country's population. Aravind Eyecare was founded in 1976 by Dr. Govindappa Venkataswamy to eradicate needless blindness first in his home state Tamil Nadu and then in the rest of India.

Narayana Health: Fixing Broken Hearts Globally, only 8% of the population has access to affordable heart surgery. There is a need to perform two million heart operations in India and all the heart hospitals put together perform less than 120,000. Tertiary care only reaches 10-15% of the population. According to Dr. Devi Shetty, founder of Narayana Health, India needs two million hospital beds, one million doctors, and at least two million nurses to meet demand. Building the required 500 medical schools is expensive at a cost of $40 million per building, and the government is unable to make significant capital investments. The vision of this organization is to provide —high quality healthcare, with care and compassion, at an affordable cost, on a large scale, Narayana Health is a hospital chain in India with 7500 beds spread across 29 hospitals in 17 cities that focuses on affordable quality tertiary care, including cardiac care, neurosciences, oncology/cancer care, and organ transplant. There was no intention of frugal innovation – with lack of money, the emphasis was on breakthrough innovations as there was no model in tertiary healthcare to follow.

The Jaipur Foot: **Making People Walk** In the early 1970s, Professor P.K. Sethi, an orthopedics professor in Jaipur, India, realized that the prevalent prosthesis design for lower-limb amputees was poorly suited to India's sitting culture. He developed a waterproof, lightweight rubber-based prosthetic leg for less than 1% of the manufacturing cost in the US. The nonprofit Bhagwan Mahaveer Viklang Sahayata Samiti (BMVSS) began distributing the Jaipur Foot internationally, selling not only to amputees, but also fitting war victims and polio patients. To date, the Jaipur Foot has reached over 1.3 million people and BMVSS has held artificial limb fitment camps in 26 countries across Africa, Latin America, and Asia.

Mitticool: **Earthen Refrigerator** In 1988, Mansukhbhai Prajapati, a rural innovator from Rajkot, Gujarat who failed his Class X exam, quit his job at Jagdamba Potteries. He borrowed Rs 30,000, began producing earthen pans with a modified hand press, and soon started his own earthen plate manufacturing factory. After an earthquake in 2001, Prajapati was inspired to create Mitticool, a Rs 2500-3000 clay-based fridge run without electricity that can keep fruit and vegetables cool for up to five days. Customers and home appliance companies from over 40 countries have ordered from Prajapati 's product catalogue, which has expanded to include a clay tawa and low-cost water filter.

Vortex: **Banking Services for All**: In 2001, Vortex Engineering, a Chennai-based startup, sought to make banking services accessible in remote and rural locations across India by designing affordable ATMs powered by solar energy. These ATMs are over 50% cheaper than traditional ATMs, consume 95% less electricity, and offer a fingerprint scanning system for illiterate users. Vortex has influenced competitors, forcing market leader NCR to launch a solar powered ATM model, and forged export partnerships in Africa, neighboring Asian countries, and the Middle East.

GE Healthcare: Reimagining and Redesigning for India GE Healthcare is an $18 billion unit of the multinational General Electric Company. In 2009, GE Healthcare launched —Healthy imagination, a $6 billion dollar effort to provide high-quality affordable healthcare products in developing countries. GE is investing in India to increase the accessibility of consumer healthcare, with the anticipation that Indian revenues will reach $1 billion by 2016-17. GE Healthcare currently has 25 products, developed out of the GE John F. Welch Technology Centre in Bangalore.

Questions:

1. Explain the concept of Jugaad innovation mentioned in the case? Mention briefly the views of different researchers in this context.
2. Describe any **two** MSME innovations mentioned in the case and how they have had an impact on the society?
3. What according to you are the challenges facing MSME Sector in India as regards innovation?