

# Operations Management – Introductory Session

# OM-Related Professional Societies

- APICS - The Association for Operations Management and Supply Chain Management
- American Society for Quality (ASQ)
- Society of Operations Management India
- Institute for Supply Management (ISM)
- Institute for Operations Research and Management Science (INFORMS)
- The Production and Operations Management Society (POMS)
- The Project Management Institute (PMI)
- Council of Supply Chain Management Professionals (CSCMP)

OM Blogs  
OM Materials  
OM in News  
OM Opportunities  
OM Webinar  
OM Conference  
OM Research Seminars  
OM Professional  
OM Certifications

# In India

- Department of Heavy Industry
- CII Smart Manufacturing
- SAMARTH Udyog Bharat 4.0
- Additive Manufacturing Society of India
- Center for Industry 4.0 (C4i4) Lab Pune
- IIT Delhi AIA Foundation – Industry 4.0 Lab

LAB Facility  
Recent Developments  
Startup Opportunities  
Prototype Testing  
Funding Agencies  
Indian Schemes  
Practitioners Meet  
Idea Competition  
Business Scaling



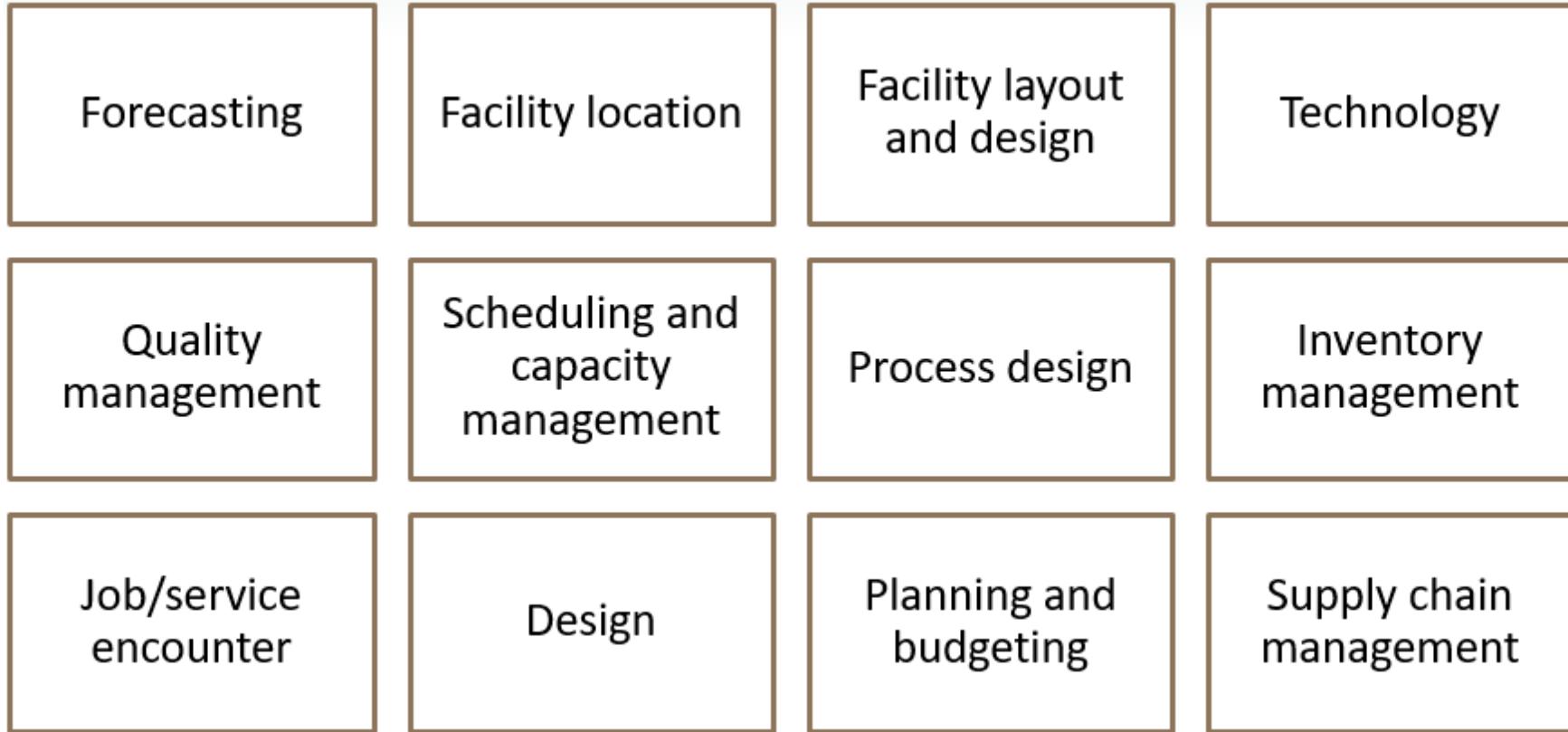
**Operations** is the set of activities that create value in the form of goods and services by transforming inputs into outputs.



### Example: Operations System

Operations System	Inputs	Processing or Conversion	Outputs
Automobile Factory	Raw Material, Fasteners, Paints, Tools, Personnel, Buildings, Utilities etc.	Transforms raw materials into finished automobiles through fabrication and Assembly Operations	Automobiles
	Bread, Vegetables Spices, Meat, Utilities, Machines, Buildings, hungry customers	Transforms raw materials into fast-food products and packages	Satisfied Customers and Take-away products
	Trucks, Personnel, Buildings, Fuel, Goods to be shipped, Packaging Supplies, Utilities	Packages and transport goods from sources to destinations	Goods Delivery
	Travel-related information that travel agents access from outside sources, such as airlines, Railways, Bus, Cab Service Etc	The travel agent inputs the generic seat availability into their own systems and the algorithms process and provide dynamic price and seat availability information to the customer	Final Information of seats price and availability is provided to the customers

# Key Activities of an Operations Manager



# A Typical Operations Managers Question in day-to-day activity

**What:** What resources are needed, and in what amounts?

**When:** When will each resource be needed? When should the work be scheduled? When should materials and other supplies be ordered?

**Where:** Where will the work be done?

**How:** How will the product or service be designed? How will the work be done? How will resources be allocated?

**Who:** Who will do the work?

## OM Metrics

### ***Performance metrics***

All managers use metrics to manage and control operations

- Profits
- Costs
- Quality
- Productivity
- Flexibility
- Inventories
- Forecast accuracy



## *Introductory Case - Narayana Health Care*



# Case Description - *Narayana Health Case*

*Indians are three times prone to heart diseases than Europeans. By 2013, while there is a need for 2.5 million heart surgeries per year in India, we are doing only 90,000. Moreover, India produces 80 cardiologists a year compared to 800 in the US. There is a huge shortage of doctors and paramedical staff in the country. To complicate the matter even more, 70% doctors are in urban areas, whereas 70% people live in rural areas. This appears to be a serious problem of lack of adequate health-care for the citizens. However, a closer look at the story of Narayana Health (NH) suggest the mass healthcare cover is not about money but about planning, passion and compassion. Operations Management can work at its best address such Problem.*

How to address this problem?

# Narayana Health Care (NHC)

## Business Opportunity Identified by Narayana Health Group

Market Opportunity in India -----→ 2.5 million heart surgeries are required in a year 2013 and it will increase in future. (**Current stat. says 3.4 million apprx in a year 2021**)

India produces only 90,000 surgeries per year (**Currently Increased to 1,10,000 approx**)

## Challenges for the Narayana Health Group

1. Huge Shortage of Doctors and Paramedical Staff (*Capacity Constraints*)
2. More than 70% of the customers are in rural (*Location Constraints*)
3. Cost-effective treatment (*Cost Minimization*)

# Available and Planned Capacity - NHC

2001 – 300 bed hospital

Extended up to 14 Hospital with 5700 beds

Implemented 30,000 beds in 2020

Work Force growth = 12,000 to 40,000

## Strategic Thinking

Creating new facility with cost effective manner

Planning and Scheduling

Cost Minimization

# Business Strategy

Process Innovation and Leveraging economies of scale

Using assembly line concepts for surgery

Reducing the average length of patient stay

Pay-per-use model

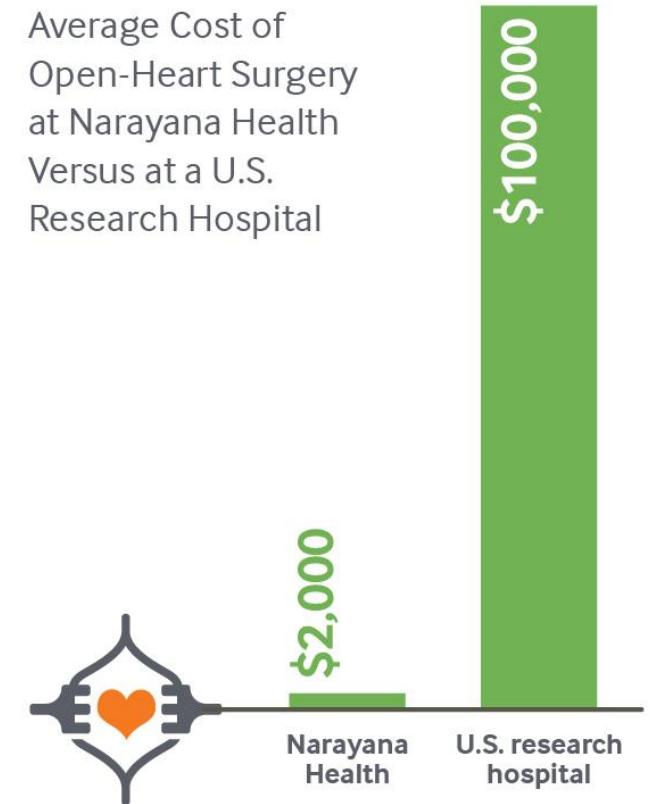
Increase volumes and Supplier efficiency

Location of the Hospital (Outskirts of the Cities)

Deploying disruptive technologies and smart use of data through cloud environment

Reengineering the design, materials, and use of medical equipment to reduce the cost of ownership.

Average Cost of  
Open-Heart Surgery  
at Narayana Health  
Versus at a U.S.  
Research Hospital



# Currently

The screenshot shows the homepage of Narayana Health. At the top is a dark blue header bar with the NH logo and the tagline "Health for all. All for health.". Below the header are several navigation links: "Find a Doctor" (with a doctor icon), "Medical Services" (with a stethoscope icon), "Hospitals & Directions" (with a globe icon), "Make an Enquiry" (with a speech bubble icon), "Book an Appointment" (with a calendar icon), and "International Patients" (with a globe icon). A search bar with the placeholder "Search by Doctor, Speciality, Hospital" and a magnifying glass icon is positioned below the header. To the right of the search bar is a large orange button with the text "186 0208 0208 for Appointments".

**Key Statistics:**

- 2.5 Million+** Patients Treated Every Year
- 24** State-of-the-art Hospitals
- 16,000+** Associates

**Quick Links:**

- MEDICAL SERVICES** (button)
- FIND HOSPITALS & LOCATIONS** (button)
- CLINICAL RESEARCH** (button)

**Social Media Icons:**

- f (Facebook)
- o (YouTube)
- in (LinkedIn)
- s (Instagram)
- t (Twitter)
- w (WordPress)

**Footer Navigation:**

- Find a Doctor | Book an Appointment
- Feedback | Pay Online
- Medical Services
- Hospitals and Directions | Make an Enquiry
- Contact Us
- Academics | Clinical Research
- Careers | NH Colleges

# 82 - Services



Operations Concept			
Economies of Scale	Material Requirement Planning	Aggregate Planning	Quality Management
Assembly Line Concepts for Surgery	Process Analysis	Resource Planning	Inventory Planning
Average Length of Patient Stay	Scheduling		
Disruptive Technology / Data Analytics	Forecasting		
Reengineering / Reuse	Quality Control	Maintenance	
Volumes and Supplier efficiency	Sourcing	Vendor Management	Supply Chain Management
Location of the Hospital (Outskirts of the Cities)	Facility Location		



## 24 - Location



### Operations Concept

#### Facility Location

#### Network Design

#### Supply Chain

#### Logistics and Transportation

# Facilities

Narayana Health • Clinical Research • Facilities



State-of-the-art Infrastructure



Data Management



Central Lab



NABH Approved Facility



Data Storage



Power Backup



Ethics Committee



Networked Facilities

Operations Concept	
Facilities	Facility Layout Problem
	Optimum Utilization of Resources and Planning



Expert Clinicians



ICU & MICU Facilities



# So the Operations Management is....

*Managing an organization's production of goods or services; managing the process of taking inputs and creating outputs.*

