

An Insight Into Operations Management

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Agenda

- Introduction to Operations Management
 - What is Operations Management
 - Definitions of Operations Management
- So what do you think it means?
- Brief history of Operations Management
- Operations Management Examples – Rich Pictures
- What do Operations Managers do?
- What Skills do Operations Managers Need?
- What are the issues facing Operations Managers?
- Another Language
- Summary

What is Operations Management?

- Understanding Operations Management
 - Consider the ingredients of your breakfast this morning. Unless you live on a farm and produced them yourself, they passed through a number of different processing steps between the farmer and your table...
- Operations, Operations Management and Operations Managers
 - Every organisation has an operations function, whether or not it is called 'operations'. The goal or purpose of most organisations involves the production of goods and/or services.
 - Operations in some form has been around as long as human endeavour itself but, in manufacturing at least, it has changed dramatically over time.
 - To some (especially those professionally involved in operations management!) operations management involves everything an organisation does. In this sense, every manager is an operations manager.

Operations Management Definitions

- The efficient and effective implementation of the policies and tasks necessary to satisfy a firm's customers, employees, and management (and stockholders, if a publicly owned company)
- The management of systems or processes that create goods and/or provide services.
- "The ongoing activities of designing, reviewing and using the operating system, to achieve service outputs as determined by the organization for customers" (Wright, 1999)
- Management of main business activity: the organizing and controlling of the fundamental business activity of providing goods and services to customers

Exercise

- Generate a list of statements that could be included under the term Operations Management.
- You have 10 minutes to complete this task

Operation Management – Exercise Output

- Forecast Demand

- Market Product
- Adapt to comply with customer demand
- Understand what the customer wants
- Understand how much the customer wants
- Set targets (timescales) [?]
- Know product demand
- Measuring standards [?]
- Produce sales invoices solve customer disputes [?]
- Measure outputs [?]
- Plan production and Time Scales [?]

- Sourcing and Procurement

- Order Stationery
- Negotiate price
- Check delivery with order
- Reconcile invoice with correct supplier statement
- Pay on time
- Buy supplies
- Order materials
- Stock control [?]
- Buying resources and allocating
- Inventory / stock control [?]
- Schedule suppliers
- Managing stock (getting it in the right place at the right time)
- Locating and procuring supplies
- Pay suppliers [?]

Operation Management – Exercise Output

- Creation of Output

- Collect payment [?]
- Managing budgets [?]
- Cost implications [?]
- Buy cost effective materials [?]
- Replenish inventories [?]
- Arrange for necessary equipment
- Schedule material / staff / equipment to produce goods and services
- Plan 'work order'
- Produce product
- Produce goods
- Converting supplied materials (adding value)
- Quality control
- Measure conformance / quality

- Delivery

- Customer satisfaction
- Deliver finished products
- Consider logistics / delivery
- Arrange delivery to customer
- Dispatching the goods or service to the customer
- Arrange packaging / presentation

Operation Management – Exercise Output

- Manage People
 - Employ people
 - Train people
 - Implementing and timescales [?]
 - Outsource
 - Delegation
 - Managing people
 - Recruit and train staff
 - Schedule labour
- Post Sales

A Brief History Of Operations Management

- **Pre 18th century**

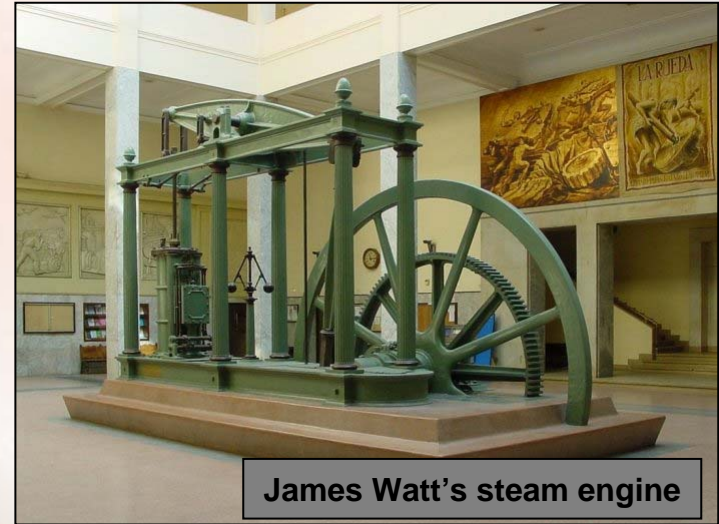
- Agriculture was the predominant industry in every country.

- **Industrial Revolution 1770 – 1830**

- Economy based on manual labour was replaced by one dominated by industry and the manufacture of machinery.
- The development of all-metal machine tools in the first two decades of the 19th century facilitated the manufacture of more production machines powered by steam or water (James Watt 1785)

- **Second Industrial Revolution (around 1850)**

- Development of steam-powered ships, railways, and later in the nineteenth century with the internal combustion engine and electrical power generation.
- Introduction of Frederick W. Taylor's systematic approach to scientific management at the beginning of the twentieth century (1911)
- 1920, Henry Ford, father of the moving assembly line, brought the world into an age centred around the mass production of goods



James Watt's steam engine



Manchester in 1840

A Brief History Of Operations Management

- **Post WWII**

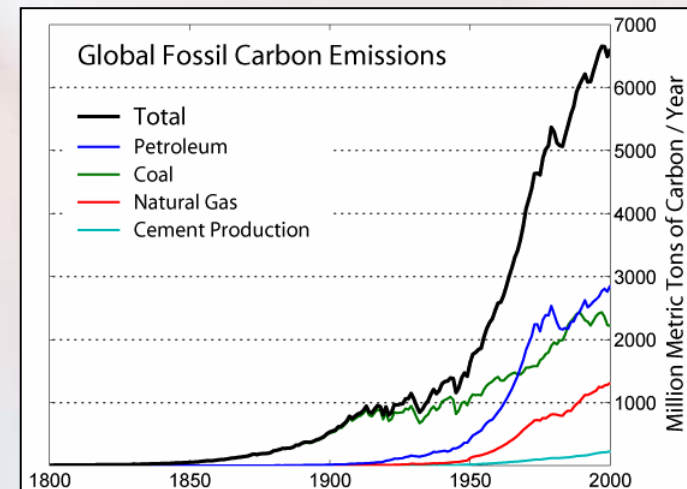
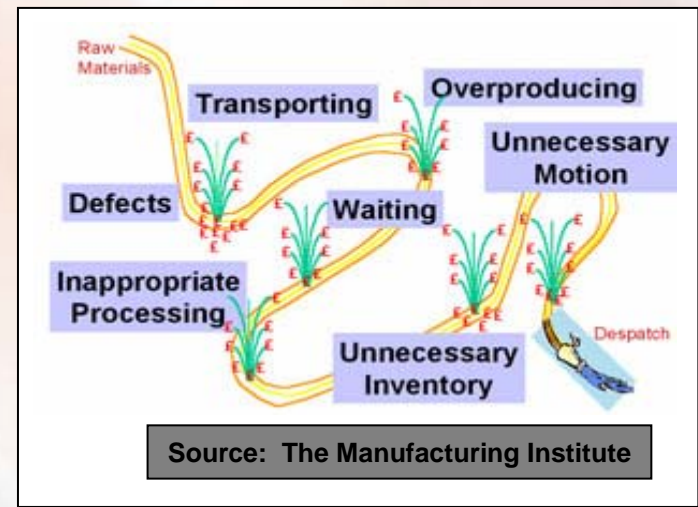
- Leverage of management science techniques that were developed in the war
- Growth in power of computers
- Japanese Production System (e.g. TPS) based on three principles:
 1. Quality
 2. Continual Improvement
 3. Elimination of waste

- **Late 1950s and early 1960s**

- Move from industrial engineering and operations research into production management
- Production management becomes a professional field as well as an academic discipline.
- Major world economies evolving into the service arena:
 - service jobs outnumber manufacturing jobs
 - productivity increases much more difficult to achieve
- Operations techniques begin to be incorporated into services - the term production/operations management comes into use

- **Now**

- Environmental and social awareness



Operations Management - Examples

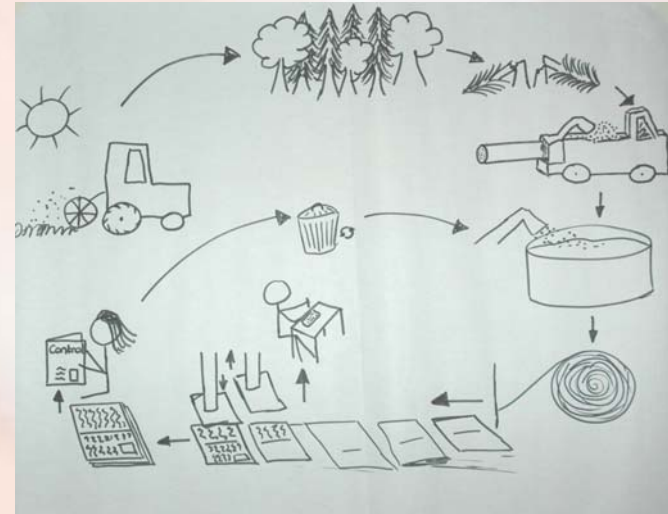
- Manufacturing Products
- Providing Insurance Cover
- Providing Healthcare
- Government
- Armed Forces – Peace Keeping
- OXFAM – bringing relief

Exercise:

You will be assigned one of the areas listed above. Draw a picture (no words) which represents the role of operations management in each of the above. You have 15 minutes to complete the task.

Manufacturing Products

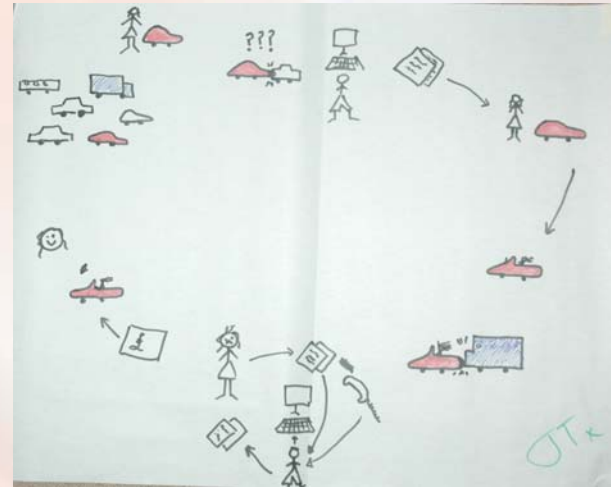
- Managing Operations
 - Receiving requirements
 - Procuring raw materials
 - Recruiting and retaining staff
 - Budgeting and cash management
 - Meeting Health, Safety and Legal requirements
 - Planning resources
 - Improving quality, cost and delivery
 - Procuring / Managing assets
 - Defining policies and procedures
 - Making products
 - Storing and distributing products
 - Negotiations
 - Provide training



- Plan raw materials
- Process raw materials
- Make intermediates
- Process copy (for Control)
- Printing
- Quality control
- Recycling / rework

Providing Insurance Cover

- Managing Operations
 - Receiving requests for cover
 - Assessing / reassess risk
 - Answering customer enquiries
 - Undertaking competitor reviews
 - Processing claims
 - Making payments
 - Recruiting and retaining staff
 - Budgeting and cash-flow management
 - Meeting Health, Safety and Legal requirements
 - Planning resources
 - Improving quality, cost and delivery
 - Customer care process
 - Accredit repairers



- Forecast demand
- Process applications
- Process renewals
- Calculate no claims bonuses
- Arrange repairs
- Send out certificates / reminders
- Send out claims forms

Providing Health Care

- Managing Operations

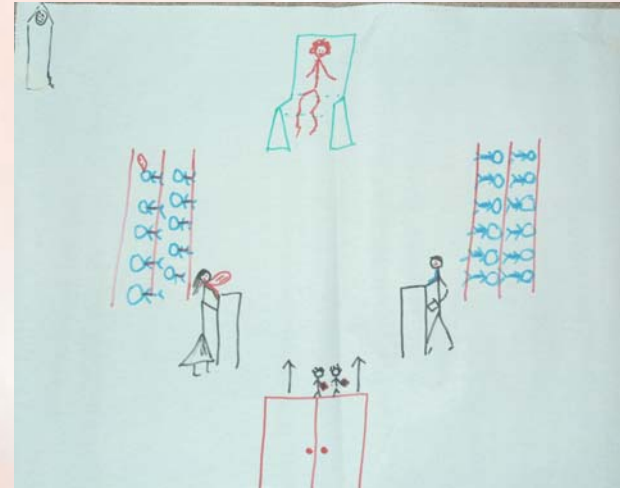
- Obtaining finance
- Project / Programme Management
- Recruiting and retaining staff
- Sourcing and procuring supplies
- Responding to emergencies
- Scheduling patient operations
- Controlling infection
- Providing post operative care
- Capacity planning (bed / theatre management)
- Quality control / track and trace
- Dispatch ambulance
- Inform hospital of arrival
- Inform stakeholders
- Contact theatre team



- Provide interim care – stabilise patient
- Prepare resource (theatre)
- Kitting for operations
- Resource planning (ITU / Ward)
- Plan diagnostics resources
- Liaise with other department
- Deploy ambulance

Government

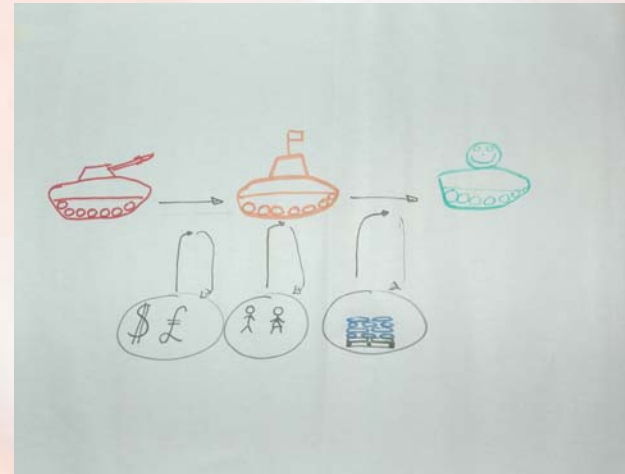
- Managing Operations
 - HMRC
 - Process tax forms
 - Investigate errors
 - Prosecute offenders
 - Labour planning
 - Social Services
 - Assessing risk
 - Providing support services
 - Emergency Services
 - Capacity planning
 - Resource deployment



- Central Government
 - Generate new laws
 - Influence people
 - Process claimants
 - Allocate resources according to need
 - Return people
 - Educate and train people

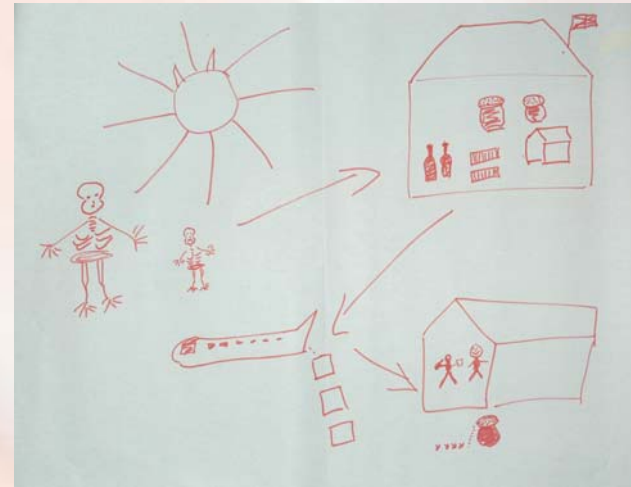
Armed Forces

- Managing Operations
 - Training and development
 - Contingency planning
 - Capital investment and programme management
 - Logistics (soldiers and materials)
 - Supply Chain Management
 - Returns management
 - Deployment
 - Measurement and control
 - Manage budgets and costs
 - Stakeholder management
 - Manage people
 - Manage resources (equipment and materials)
 - Management of maintenance



- Managing Operations

- Generate funds
- Contingency planning
- Material and labour planning
- Forecast demand
- Source and procure non-perishables
- Response time management
- What-if and scenario planning
- Deploying aid (people and materials)
- Transport to site of disaster
- Enabling sustainability
- Distribute to people in need
- Plan for short term and longer term sustainability



- Conduct risk assessment
- Skills assessment / training
- Manage shops
- Run collections / donations
- Receive goods and price in shops

What Do Operations Managers Do?

- **Strategic (long term) Level**

- Responsible for, and decisions about:

- What to make (product development)
- How to make it (process and layout decisions) – or should we buy it
- Where to make it (site location)
- How much is needed (high level capacity decisions)

- **Tactical Level (intermediate term)**

- Address material and labour resourcing within strategy constraints, for example:

- How many workers are needed and when (labour planning)
- What level of stock is required and when should it be delivered (inventory and replenishment planning)
- How many shifts to work. Whether overtime or subcontractors are required (detailed capacity planning)

- **Operational Level**

- Detailed lower-level (daily/weekly/monthly) planning, execution and control decisions, for example:

- What to process and when (scheduling),
- The order to process requirements (sequencing)
- How work is put on resources (loading)
- Who does the work (assignments)

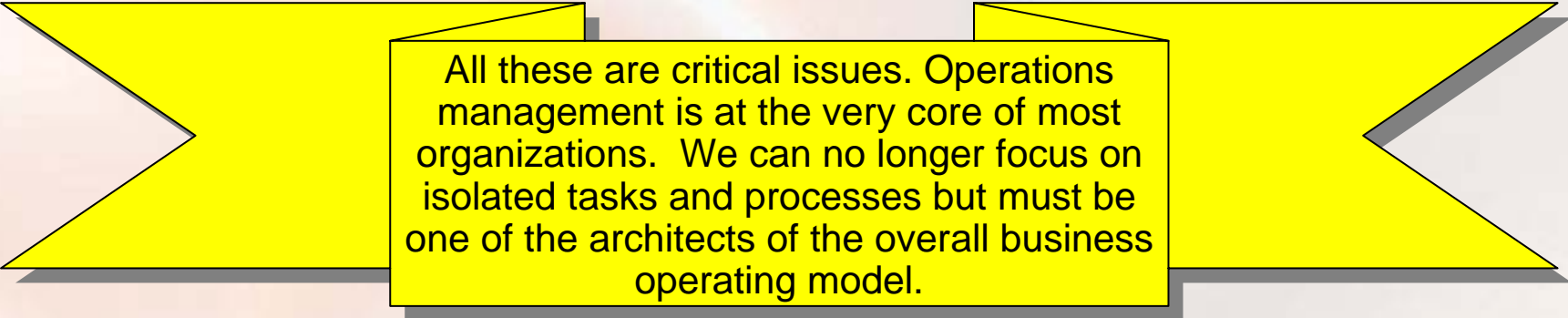
What Skills Do Operations Managers Need

- Must have knowledge of:
 - advanced operations technology and technical knowledge relevant to his/her industry
 - interpersonal skills and knowledge of other functional areas
 - The ability to communicate effectively, motivate other people, manage projects, and work on multidisciplinary teams
- Multi-disciplinary working, for example:
 - Supply Chains - management of all aspects of providing goods to a consumer from extraction of raw materials to end-of-life disposal
 - The interface with Marketing - determining what customers' value prior to product/service development
 - Operations Management/Finance Interface - Capital equipment and inventories comprise a sizable portion of many firms' assets in addition to normal operating costs
 - Service Operations - Coping with inherent service characteristics such as simultaneous delivery/consumption, performance measurements, etc.
 - Operations Strategy - Consistent and aligned with other strategies and legal requirements.
 - Process Design and Improvements - Managing the innovation process.

Issues Facing Operations Managers

- **Major Issues are:**

- Environmental sustainability, recycling , reuse
- Counter terrorism / risk management
- Globalisation of supply and demand
- Reducing time to market
- Achieving and sustaining high quality while controlling cost
- Integrating new technologies and control systems into existing processes
- Obtaining, training, and keeping qualified workers and managers
- Working effectively with other functions to accomplish the goals
- Integrating production and service activities at multiple sites in decentralized organizations
- Working effectively with suppliers and customers
- Strategic alliances



All these are critical issues. Operations management is at the very core of most organizations. We can no longer focus on isolated tasks and processes but must be one of the architects of the overall business operating model.

Another Language??

Re-engineering

World Class

Six Sigma

S&OP

Lean vs Agile

Balanced Scorecard

TPM

KPIs

Master Scheduling

drp

Toyota Production System

mrp

Processes

Planning & Scheduling

Kaizen

Change Management

Theory of Constraints

ERP Systems

Operations Management - Summary

- Management of...:
 - People
 - Process
 - Systems
- to delivery a useful product or service



- Recognition / realisation of improvement opportunities in the areas of:
 - Increasing Customer Value
 - Reducing Operational Cost
 - Increasing Return on Assets
 - Sustainability