

Operations Management in Services

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Agenda

Difference between Service and Manufacturing

Applications of

- *Forecasting*
- *scheduling,*
- *quality control,*
- *capacity planning,*
- *lean practices,*
- *supply chain management*

In Hospitals, Hotels, Airlines and Education

Introduction

Operations management:

The business function responsible for planning, coordinating, and controlling the resources needed to produce a company's products and services

Service Vs Manufacturing

Services:

- *Intangible product*
- *No inventories*
- *High customer contact*
- *Short response time*
- *Labor intensive*

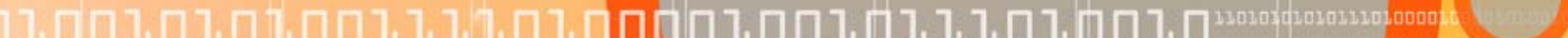
Manufacturing:

- *Tangible product*
- *Can be inventoried*
- *Low customer contact*
- *Capital intensive*
- *Long response time*

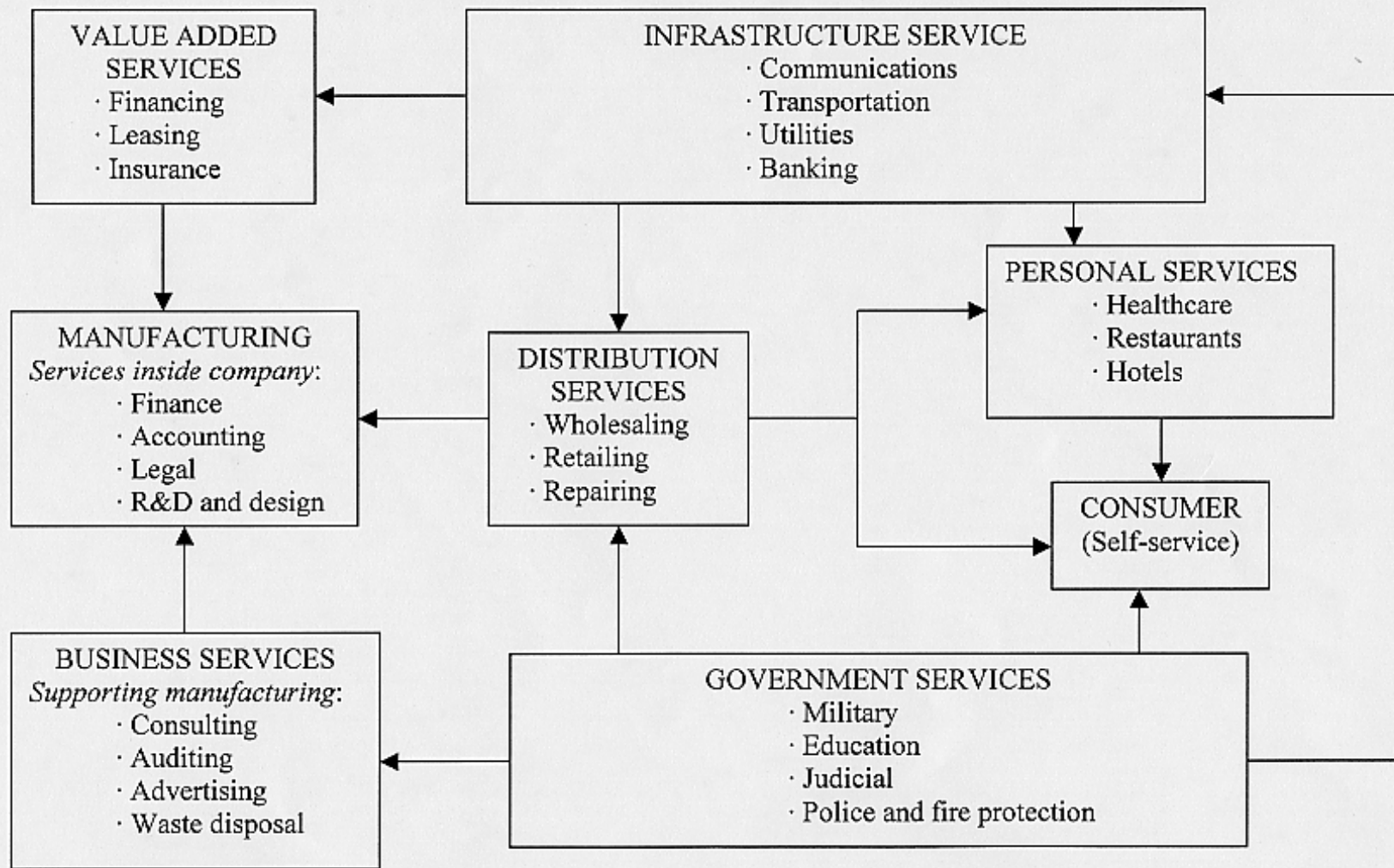
Definition of Service Firms

Service enterprises are organizations that facilitate the production and distribution of goods, support other firms in meeting their goals, and add value to our personal lives.

(James Fitzsimmons)



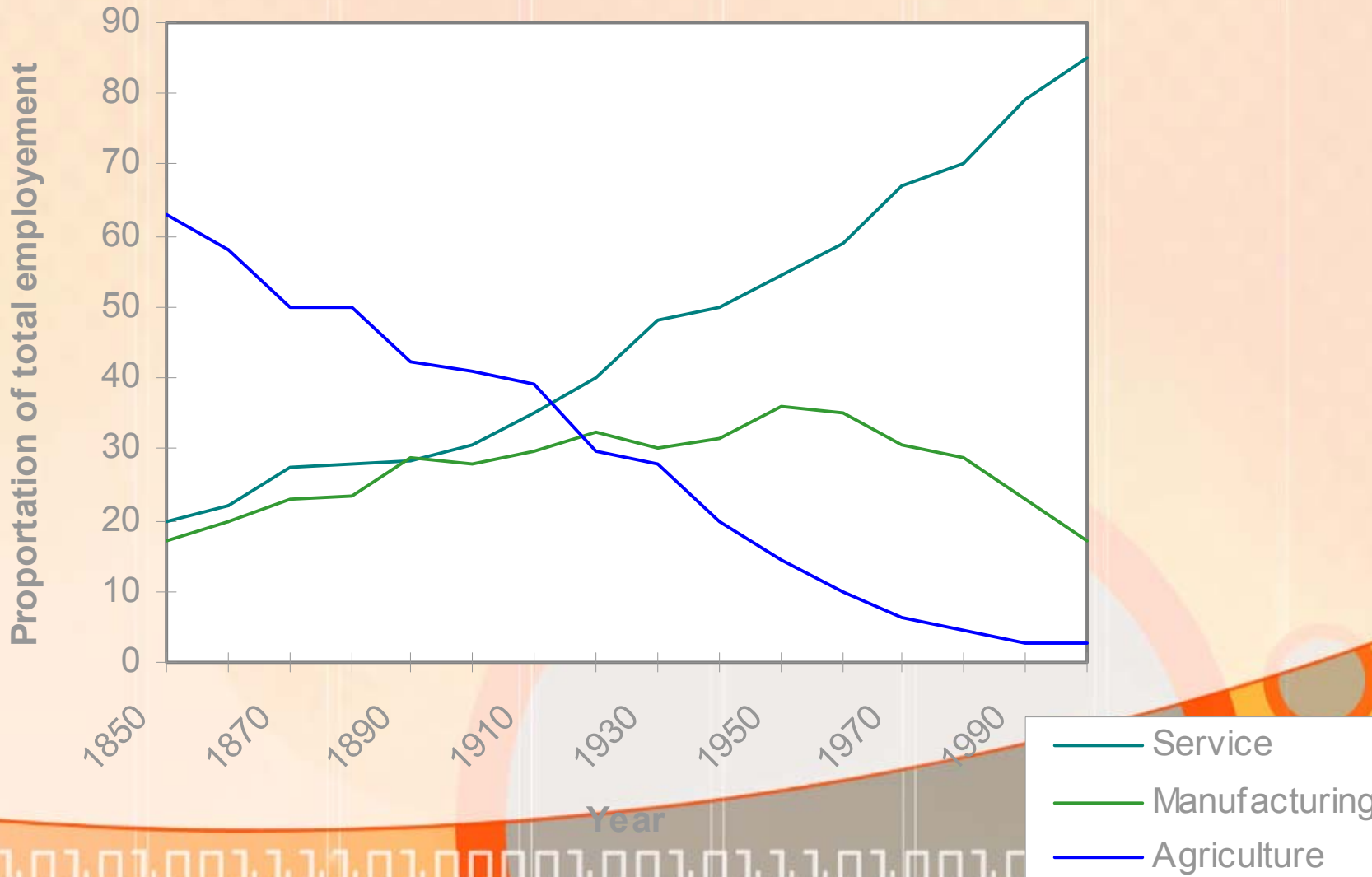
Role of Services In an Economy



Percent Service Employment for Selected Nations

<i>Country</i>	<i>1980</i>	<i>1987</i>	<i>1999</i>	<i>2000</i>
<i>United States</i>	<i>67.1</i>	<i>71.0</i>	<i>74.3</i>	<i>74.2</i>
<i>Canada</i>	<i>67.2</i>	<i>70.8</i>	<i>74.8</i>	<i>74.1</i>
<i>Israel</i>	<i>63.3</i>	<i>66.0</i>	<i>68.0</i>	<i>73.9</i>
<i>Japan</i>	<i>54.5</i>	<i>58.8</i>	<i>59.9</i>	<i>72.7</i>
<i>France</i>	<i>56.9</i>	<i>63.6</i>	<i>66.4</i>	<i>70.8</i>
<i>Italy</i>	<i>48.7</i>	<i>57.7</i>	<i>60.2</i>	<i>62.8</i>
<i>Brazil</i>	<i>46.2</i>	<i>50.0</i>	<i>51.9</i>	<i>56.5</i>
<i>China</i>	<i>13.1</i>	<i>17.8</i>	<i>21.2</i>	<i>40.6</i>

Trends in U.S. Employment by Sector



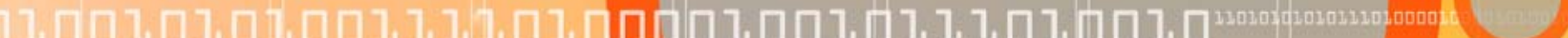
Areas of Discussion

Hospitals

Hotels

Airlines

Education



-forecasting

“Estimation for future trends. Several industries

Hospitals – ER beds, HR, resources. Variation?

- *Forecaster*

Hotels–Rooms, length of stay, facilities (parking)

- *Exponential Smoothing + judgement*

Airlines – Ticket sales, terminal usage, staff

- *Neural networks*

Education – Students, rooms, faculty

- *Expo smoothing and multiple linear regression – popn, enrollment*

Scheduling

“Allocating time to labor, materials, equipment to complete production process”. Service concerned with labor and time.

Hospitals – Operating Room procedures, allied services – Simulation, packages

Hotels – Room servicers, allocation

Airline Scheduling – Flight, Crew, Maintenance

- Factors of size of aircraft, capacity, salary, crew availability, hours for pilot, maintenance, delay losses.*

Education – Faculty and classes

- Block system, variables do not change much*

Quality Control

“Systems in place that verify whether a product or service is up to customer’s expectations and does what the company promises”

Hospital – waiting time, experience and medical errors

Hotel – availability, comfort, service

Airlines – number of flights and on-time arrivals

Education – teaching, retaining skills, parents response

Capacity Planning

“The maximum amount of work needed that will meet the demands of the consumers.”

Hospital – Space and resources

Hotel – Rooms and facilities

Airlines – Seats, staff, flights

Education – Room sizes and faculty

Lean Thinking

“Eliminating the waste off a process ”

Hospital – Discharge time and reports

Hotel – Customer complaints, turnaround time

Airlines – Turnaround time, maintenance, pilots

*Education – ratio of students to teachers,
input vs output*

Supply Chain Management

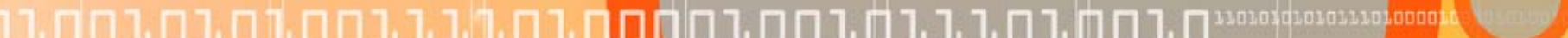
“All the inputs and activities that flow into a service to produce a deliverable to a customer

Hospital – material, unused inventory,

Hotel - Supplies

Airlines – Fuel supplies, outsource maintenance, baggage and ticket sales

Education – Material and hiring



The Four Realms of an Experience

Customer Participation

Passive

Active

Environmental

Absorption

Entertainment
(Movie)

Education
(Language)

Relationship

Immersion

Esthetic
(Tourist)

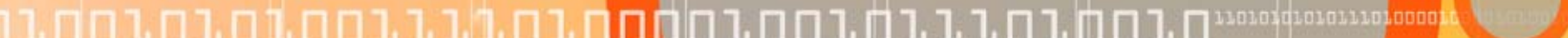
Escapist
(ScubaDiving)

Experience Design Principles

- *Theme the Experience (Forum shops, steep seating)*
- *Harmonize Impressions with Positive Cues (O'Hare airport parking garage)*
- *Eliminate Negative Cues (Cinemark talking trash containers, pilots)*
- *Mix in Memorabilia (Hard Rock T-shirts)*
- *Engage all Five Senses (Mist in Rainforest)*
- **DISNEY**

*Agrarian Make
Industrial Purchase
Service Premade
Experience Now!*

Industries now need to move in that direction!



Conclusion

Success is not measured by a profits but ability to change and respond to demands. Services respond similar to manufacturing, but follow the same theories.

