



Management of Information Systems

DTSL EEP, S-2

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Information Systems Design & Strategy

- MIS Design
 - What kind of data should be captured? How should the IT be designed?
 - Critical Success Factor Framework
 - Information Intensity Framework
 - Subserving to Corporate Strategy

Critical Success Factors (CSF) Framework

- Focus on individual managers and their current information needs
- Need for data is different for different managers; Need changes with time
- Firm's Information System must be discriminating and selective – focus on 'success factors'
- Critical Success Factors: that determine success in a specific industry - “things must go right”
- CSFs support the attainment of organizational goals

Sources of CSFs

- Industry Structure
 - Automobile
 - Food processing
 - Banking
- Competitive strategy, Industry position, and geographic location
- Environmental factors
- Temporal factors

CSF Role in MIS Design

- Helps managers to determine factors for management focus. Factors to receive careful and continuous management scrutiny
- Forces managers to develop good measures for these factors
- Clearer definition of the amount of information that must be collected; limits the costly collection of more data than necessary
- Moves firm away from the trap of building IS from whatever data is available
- Acknowledges specific managerial requirement and temporal factors. Hence, supports flexible design of the IS – both managerial level and temporal
- Remember: It's a tool helpful for organizational control not for organizational strategy!
 - To monitor and improve existing areas of business and not for strategic planning

An Example

- Design an MIS for your own industry
 - Identify CSFs and corresponding information needed

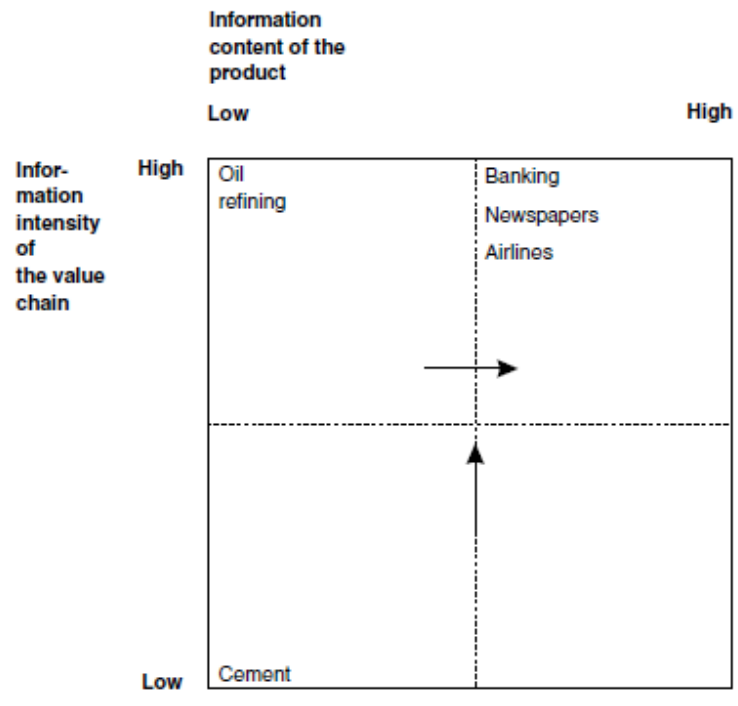
Information Systems Strategy: Information Intensity Matrix

- Transforming Value Chain using information
 - Every activity has a physical and an information-processing component
 - Percentage of both components is different in different activities
 - Impact of Industrial Revolution then and Digital Revolution now
 - Better, robust linkages, formation of new linkages using IT – e.g., IoT, Social media
- Transforming products using information
 - Products also have a physical and an information component
 - Slowly accompanying information is becoming more valuable – also the information which will be generated when the product is in use
 - Can be used to understand product performance
 - Many products and services these days require no physical component

Information Intensity Matrix

EXHIBIT IV

Information intensity matrix



IS Strategies to Deal with Competitive Forces

➤ Low-Cost Leadership

- Using IT to achieve lower operational costs and lower prices. E.g., Walmart's inventory replenishment system – leads to low inventory
- Efficient customer response system – directly links customer behaviour to distribution and production and supply chains

➤ Product Differentiation

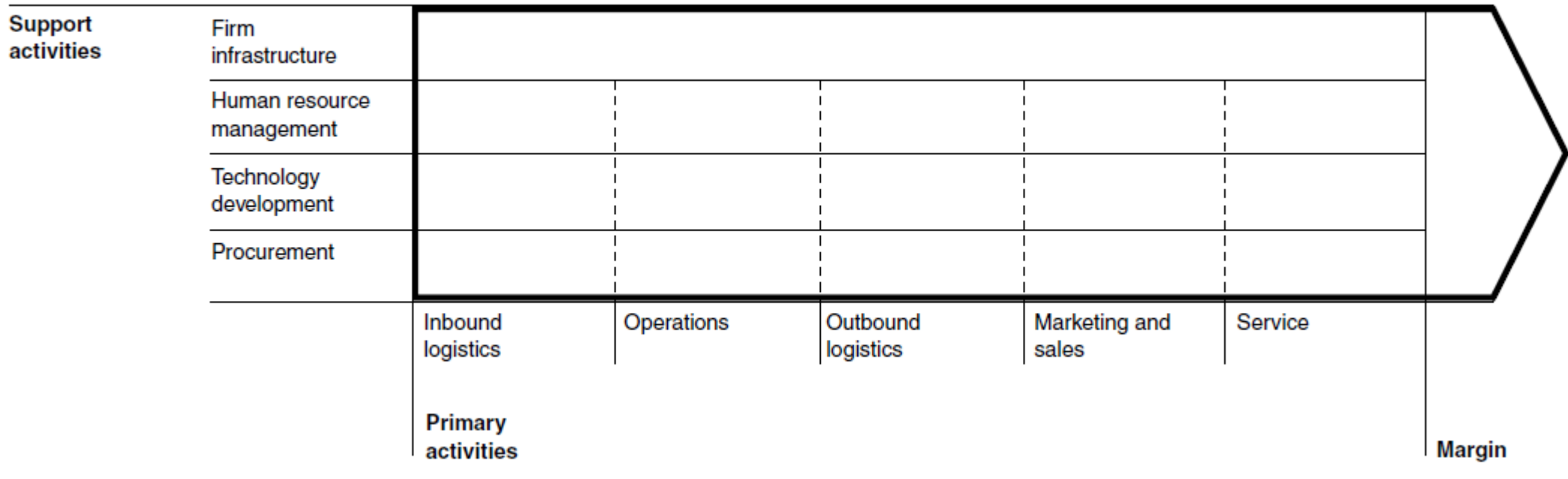
- Google Maps, Google Assistant, iPhone
- Mass customization: Nike's customized sneakers (NIKE BY YOU)
- Customer experience management

➤ Market Niche

- Decisions/Offerings based on Customer's LTV

The Value Chain

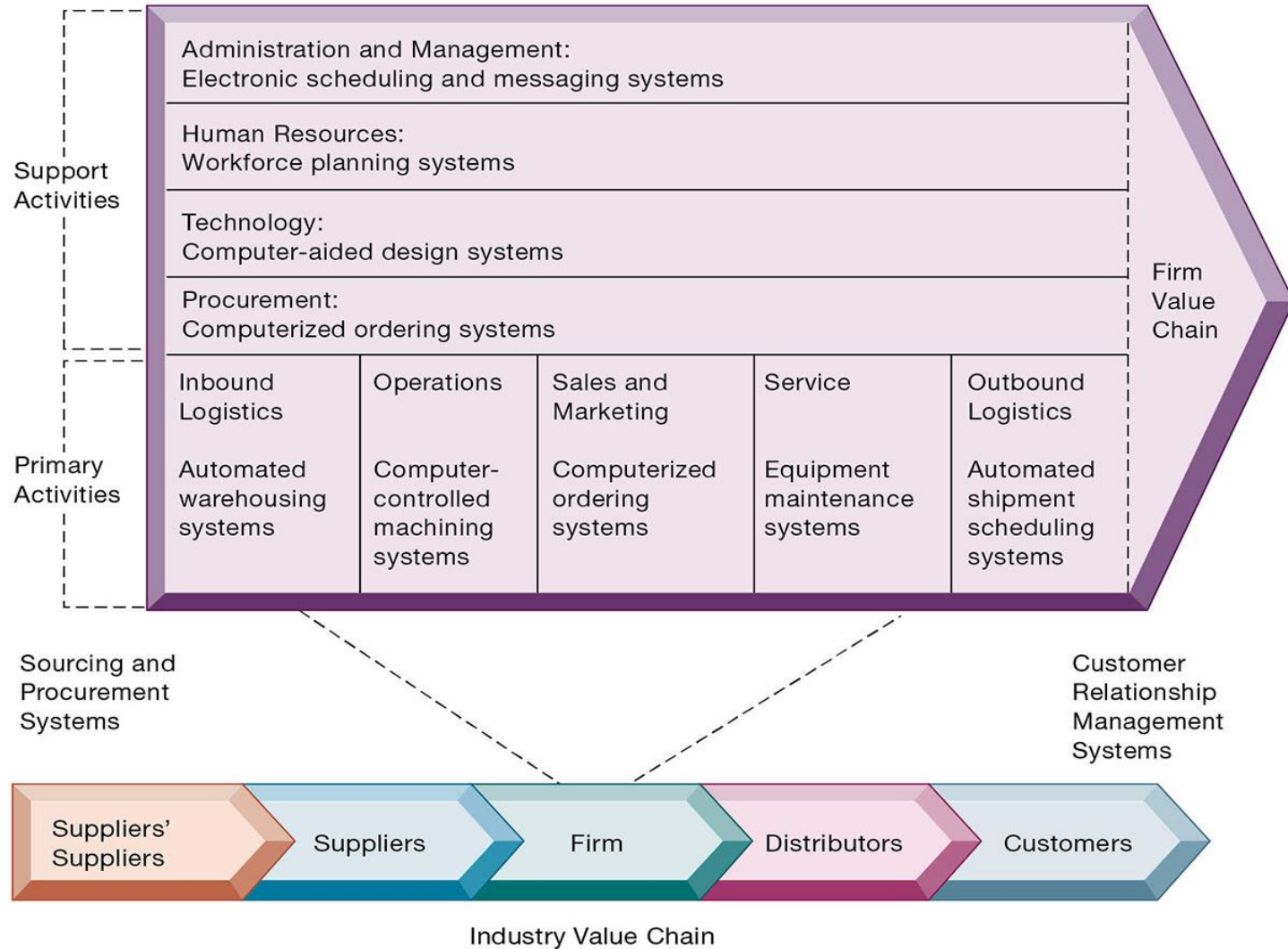
The value chain



The Value Chain Model: Activities & Linkages

- Firm is a series of activities that add value to products/services
- Highlights activities where competitive strategies can best be applied
 - Primary activities vs. Support activities
- Identify how IS can support the firm's competitive strategies
 - Improve operational efficiency AND/OR improve customer and supplier intimacy

IT Use at Each Stage of the Value Chain Model



Steps for Managers to take!

- Assess existing and potential information intensity of products and processes
- Identify and rank the ways in which IT can bring in competitive advantage
 - **Identify value activities and linkages most affected by IT; Identify new possible linkages;**
 - How can IT change competitive scope – can IT allow serving to new segments? New geographies?
- Investigate how IT spawns new businesses
 - Which information generated (potentially generated) can the company sell? - Weather Channel
 - What information processing capacity exists internally to start a new business? – PayTm
- Develop an action plan to take advantage of information technology
 - Rank the strategic investments in h/w and s/w and NPD activities

References

- Laudon & Laudon, Management Information Systems
- [Chief Executives Define Their Own Data Needs - HBR article](#)
- <https://palfreymanventures.net/porter-and-millar-1985.pdf>