

MANAGEMENT OF TECHNOLOGY

TECHNOLOGY PLANNING & STRATEGY TOOLS

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Chapter Outline

- Planning of technology
- Appropriate Technology
- Analysis of technology on company & industry
- Trajectories of Technology



Lesson Outcome

- Explain the importance of planning for choosing appropriate technology
- Describe the tools useful to analyse technology changes and relevance at firm and industry level



Introduction

- In planning the business, the most central element is tech
- The duration of time in planning depends on the objectives of the company
- Strategy – full of creativity and revolutionary
- Plan – systematic procedures

The Plan Process:

- All opinions are evaluated
- Objectives are set
- Plan what path to take
- Give commitment to execute
- Plan follow up



Technology Planning Framework

1. Make a tech forecast: A beginning to tech planning

2. Analyze and forecast:

(a) **The environment**

SWOT analysis – potential, key uncertainties, threats

(b) **The customer**

What do they want?

(c) **The organization**

State clearly the issues and assets, the human resources and performance against the objectives



Technology Planning Framework

3. Mission needs to be developed

Identify overall organizational objectives, specific objectives and the approaches to measure the objectives

4. Design organizational actions

Identify actions for each person

5. Put the plan into operation

Sub-objectives are developed within a time frame, with budgets, and develop a system to keep track on each progress



Appropriate Technology

A technology is considered 'appropriate' when:

- It is in accordance with the development objectives
- It is suitable to the surroundings for which it has been developed
- Ensure the resources fit the required technology
- Regardless of high, medium and low
- Labor must be used effectively to bring efficient production



Strategy Tools for Company



Strategy Tools for Company: Analysis of Products & Technologies

Technology in a company (or in a product) consists of 3 layers:

- Distinctive technologies

Gives an organization its unique competitive advantage in the marketplace

- Basic technologies (facilitate operations)

Technologies widely available to many organizations, essential for the development of a product but do not give it a distinctive advantage

- External technologies (products can be outsourced)

Provide a third level of technological need. Have lower impact on the company's competitive standing. More economically supplied by an outside vendor



Strategy Tools for Company: Value Chain Analysis

A company's strategy to integrate is made according to the direction of integration desired.

- Backward integration – the supplier is controlled by the owner of the company to ensure sustainable supply
- Forward integration – occurs when a company seeks to control distribution, retailing and post manufacturing activities
- Horizontal integration – involves increased control over production competitors
- Vertical integration - may combine backward, forward and horizontal integration where it involves ownership / control of activities over the entire value chain – achieve through mergers, acquisitions and takeovers

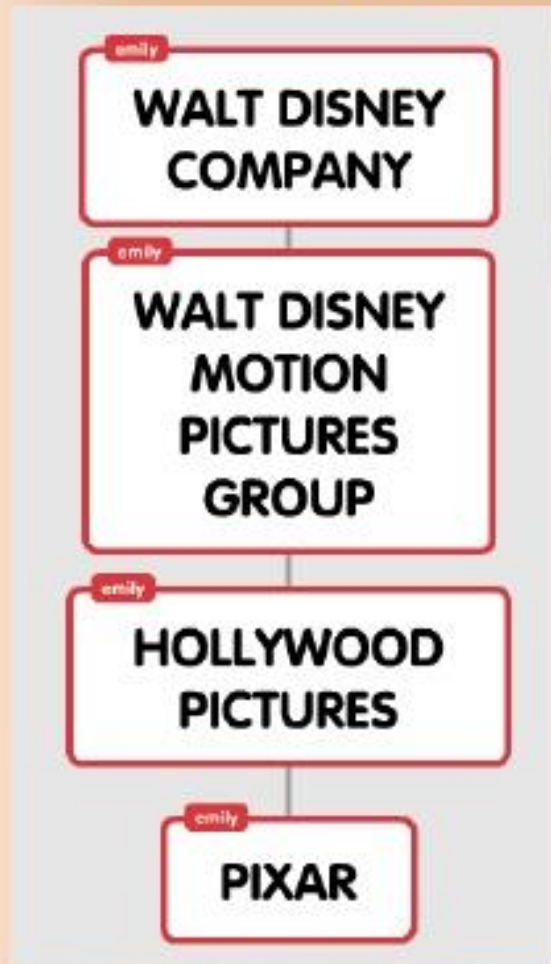


Examples of Forward Integration

- Disney has pursued forward vertical integration by operating more than three hundred retail stores that sell merchandise based on Disney's characters and movies. This allows Disney to capture profits that would otherwise be enjoyed by another store.



Vertical Integration



Vertical Integration is the process in which several steps in the production and/or distribution of a product or service are controlled by a single company, in order to increase that company's power in the marketplace.

There is three types of vertical integration, backwards, forwards and balanced integration.

Disney created value mainly through "vertical integration" of its business lines, especially through the concept of forward integration. For example Disney production of movies and the final distribution in cinema's or on television, especially through its acquisition of ABC in 1995. Through this acquisition, Disney was able to extent its boundaries quickly and gain access to a wider level of distribution for Its products.

Vertical Integration : Example

Vertical Integration: Starbucks

- Largest coffee house company worldwide
- 5 countries → 17k stores
- Mission? To supply the customer with “...the finest coffee in the world...”

Old Strategy:

- Suppliers must give quality coffee
- Supply chain is developed for bean roasting to produce top quality coffee

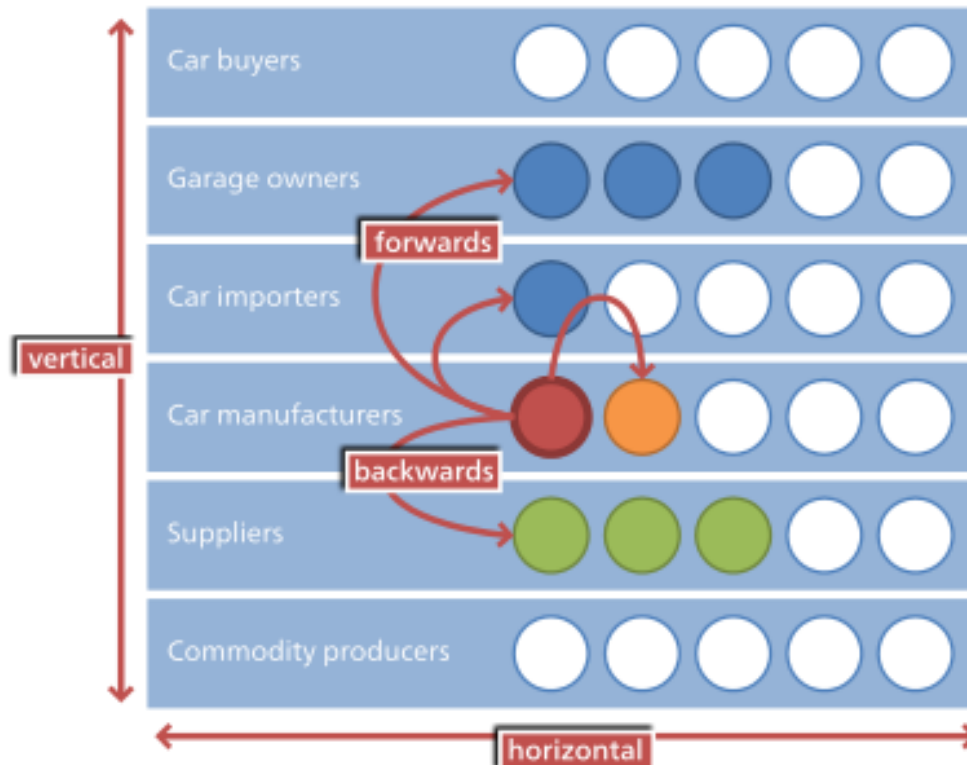
New Strategy:

- Using backward integration
- China supplies a coffee bean farm purchased by Starbucks
- Employees are trained and educated
- Quality of own farms are ensured



Horizontal Integration

Marvel Comics and Lucas Film are owned by Walt Disney Impact → Films like The Avengers, Star Wars, are produced



Strategy Tools for Company: Core Competencies Analysis

- Need to determine which internal skills and disciplines are essential to the growth and survival of the business
- Emphasis should be given to those areas where strengthened technical capability leads to improved business performance

Types of capabilities:

- Market-interface – advertising, selling, consulting, customer relationship
- Infrastructure – MIS, training systems, reward systems, appraisal systems
- Technological – design, manufacturing, development



Strategy Tools for Company: Technology Audit

- Technology Audit is to recognize the weaknesses and strength of a company's technological assets
- Continuous process of assessment
- The objective of technology audit is to evaluate the position of a firm in tech as compared to its competitors, and develop a strategy and plans of tech
- Objectives of Technology Audit Model (TAM) are:
 - To identify the current status in their tech
 - to determine their areas of opportunity
 - to grab advantage of their strong abilities



Strategy Tools for Company: Market-Technology (M-T) Matrix

Analyse the technical and marketing competence necessary for strategic decision-making in product innovation



Strategy Tools for Company: Buyer Utility Map

- Buyer Utility Map is to indicate the likelihood that customers will be attracted to a new idea or product.
- It helps innovators to think about 2 things:
 - i. The levers they can pull in delivering utility to customers
 - ii. The various levels in the 'buyer experience cycle'



Buyer Experience Cycle

A buyer's experience can usually be broken into a cycle of six stages, running more or less sequentially from purchase to disposal. Each stage encompasses a wide variety of specific experiences. At each stage, managers can ask a set of questions to gauge the quality of buyer's experience.



Buyer Utility Map

The buyer utility map helps managers look at this issue from the right perspective.

It outlines all the levers companies can pull to deliver exceptional utility to buyers as well as the various experiences buyers can have with a product or service.

The Six Stages of the Buyer Experience Cycle

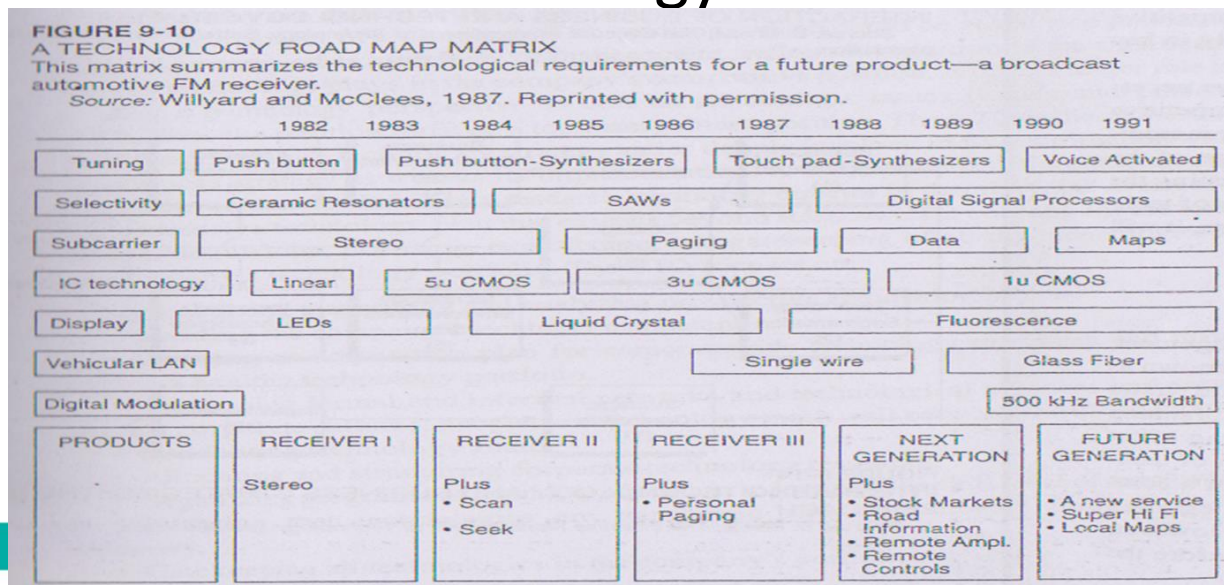
	1. Purchase	2. Delivery	3. Use	4. Supplements	5. Maintenance	6. Disposal
Customer Productivity						
Simplicity						
Convenience						
Risk						
Fun and Image						
Environmental friendliness						



Strategy Tools for Company: Technology Road Map

It provides:

- Identification of their technological capability
- Comparing their capability with their competitors (current and future)
- Giving a forecast of technology



Summary

Analysing the organization's environment to find appropriate technology in the context of dynamic technological changes is a challenging task.

A variety of tools are available for analysing technology needs of an organization, from both company and industry levels.



Credit to:
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