MANAGEMENT OF TECHNOLOGY

TECHNOLOGY STRATEGY

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Chapter Outline

- Introduction
- Definition of Strategy
- Linking Technology & Business Strategies
- Significance of Strategy
- Formulating Technology Strategy
- Technology Innovation Leader

Lesson Outcome

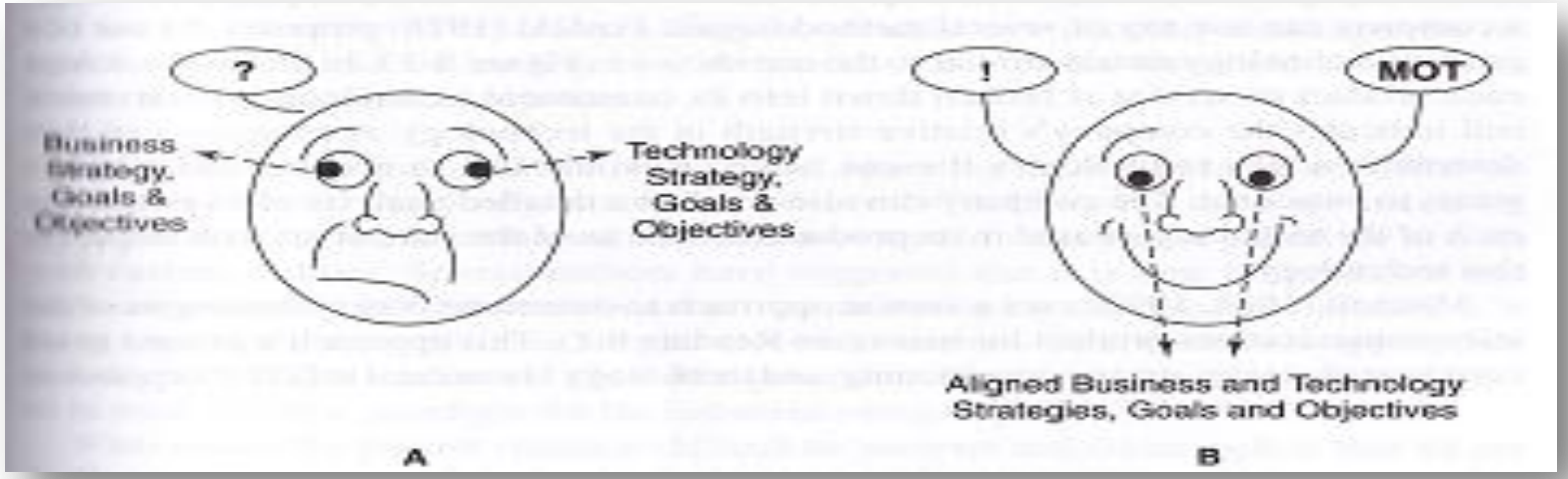
- Appreciate technology as a strategy component of organizations
- Know how to develop a technology strategy
- Identify advantages and disadvantages being a leader in technology innovation

Introduction

- Technology – to meet the needs of the society
- To spin out the tech, companies need to have a mechanism
- The mission statement and vision of a company shows the value and the reason of existence
- From the mission statement, a strategy is developed which brings various course of action

Introduction

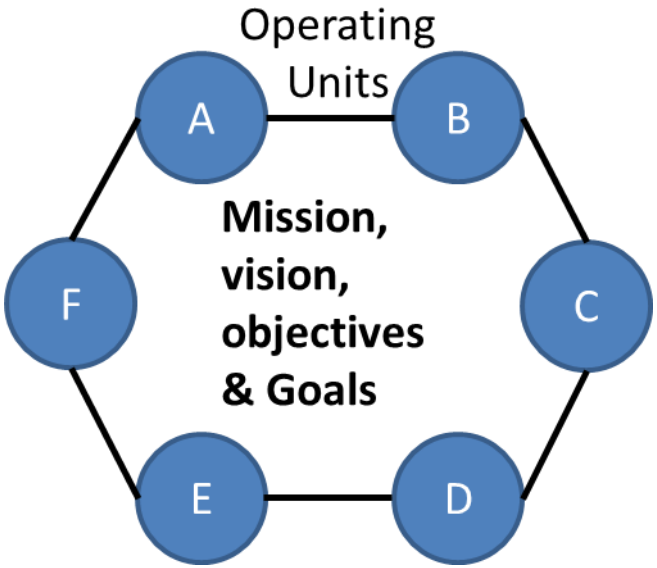
- Tech – consistent competitive edge
- Business – consistent advantage for its economy



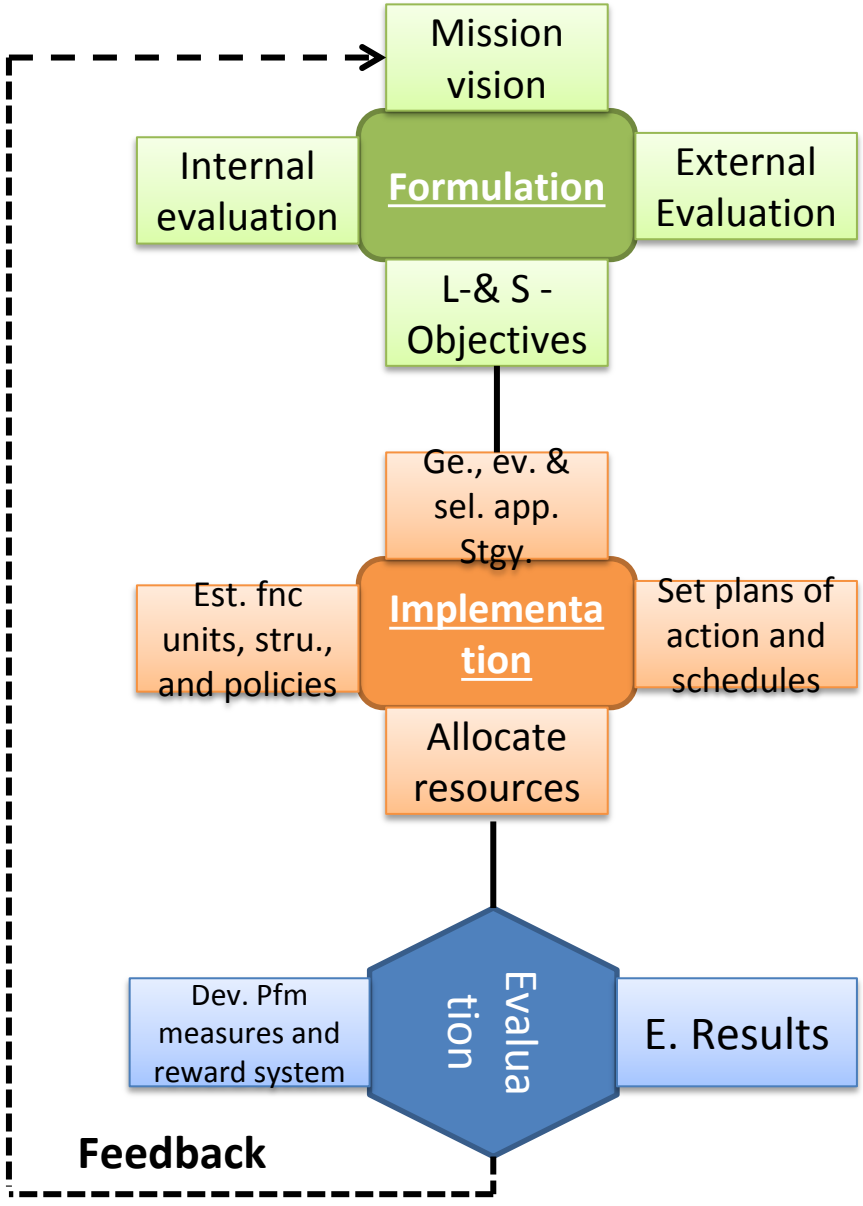
Definition of Strategy

A plan with long term objectives in order to compete and succeed

A comprehensive formula for a company to win



The Wheel of Competitive Strategy
[Porter, 1980]



MODEL OF STRATEGIC DEVELOPMENT

Strategic Management – consisting of 3 important and interrelated components

- Strategic planning
- Strategic implementations
- Strategic evaluation

Strategy

Simply, strategy in any business is to answer three fundamental questions:

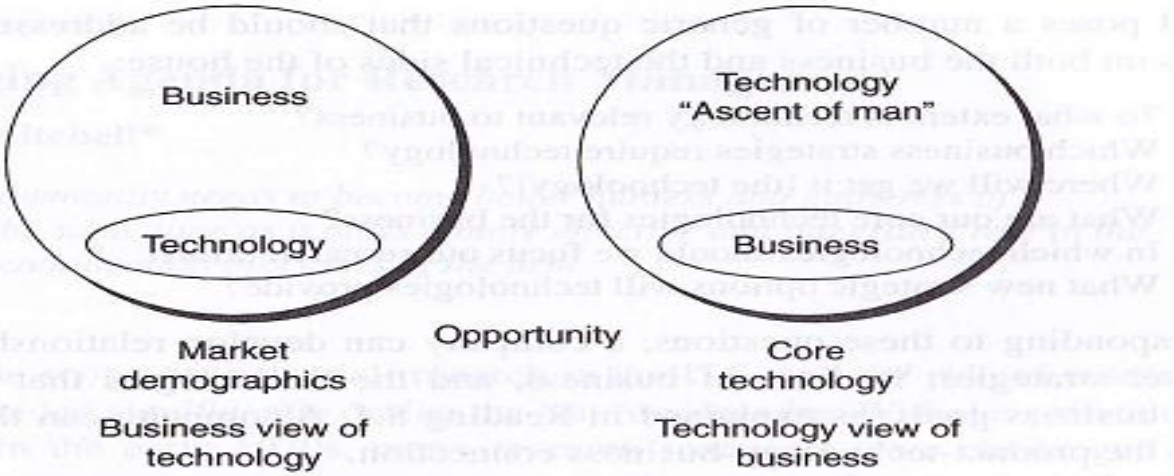
What business should the firm engage in?

How should the firm be positioned in the business?

What technology, production, and marketing will be necessary to attain the desired position?

Linking Technology & Business Strategies

Step 1 : Agree from both sides (Business & Technical side) on a set of priorities



Framework for Formulation of Business and Technology Strategies

Linking Technology & Business Strategies

	Product A	Product B	...	Product N
Required Tech1	Relative Strength			Relative Strength
Required Tech 2		Relative Strength		
Required Tech 3		Relative Strength		Relative Strength

Product Technology Matrix

To identify the relationship between products/services and the underlying technology

Formulating Technology Strategy

No	Key Area
1	Identify the mission, vision and goals
2	Know the firm's posture
3	Make aggregate project plan
4	Decide an acquisitions and organization
5	Make resource allocation
6	Lead the innovative effort
7	Set-up evaluation methods
8	Choose market entry strategy

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- Organization without a strategy is like a body with a dead brain while an organization with poor strategy is like a sick patient
- Core strategy depends on vision, mission and the objectives and goals.
- Survive in competitive markets – efficient, competent and offer uniqueness → innovation

Profitability	Innovation	Manager Performance and Development	Physical and Financial Resources
Productivity	Market Standing	Worker Performance and Attitude	Public Responsibility

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What is your company interested in?

Conservative technology :

- Defensive strategy – not interested in innovation- emphasized extreme offerings- imitation strategy
- Aggressive technology :
  Proactive firms – continuous innovations – sense the market and tech developments

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Know the Firm's Posture

Examine the opportunities – within the firm, external to the firm, trajectories of technology

Action	Posture	Risk
Continue with Existing	Inactive	High
Imitation	Reactive	Low
Incremental	Active	Medium
Radical	Proactive	High

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Basic steps in constructing such a plan:

- Mapping the varying kind of development projects
- Making capacity decisions
- Make provision for gaining critical skills and capabilities

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Where will we get the REQUIRED technology?

- Within the business operation
- From the corporate or other company laboratories
- From outside the corporation

	Method	**Organization**
S a	Continuous Improvement	Quality circles, and task force
S b	R&D Creativity	Product development team, Process development team, JV, outsourcing
S c	Buy-out Licensing-in	Chief technology officer and his team

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How much to budget for a new product development?

Size of resources allocation and approaches vary from firm to firm (budget for a new product development, NPD)

- Some company may encourage more number of projects with a hope to hit one or two (open end budget)
- Some companies may decide the frequency of new product introductions and work back (objective – task method)
- Some companies may relate the investment to their sales (percentage of sales method)

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Consideration in leading for innovation are:

- Innovation climate
- Innovation culture
- Right people
- Research as a team effort
- Product champions
- Performance appraisals

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(7)

Measurable criteria are essential to assure benefits from innovation effort:

Time – product or process introduction

(8)

Divided into 3 categories:

- First movers (pioneer / leader)
- Early followers
- Late entrants (laggard)

To be first entrant:

- Firm must posses the core capabilities required to produce the technology when needed
- Intends to beat the earlier entrant to market with new version of this technology, it must have fast-cycle development processes

To be a First Mover

Advantages	Disadvantages
Brand loyalty and technological leadership	Research and development expenses
Pre-emption of scarce assets	Undeveloped supply and distribution channels
Exploiting buyer switching costs	Immature enabling technologies and complements
Reaping increasing returns advantages	Uncertainty of customer requirements

Credit to:

Tarek M.Khalil

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