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Management
and Industrial Strategy
אסטרטגיה ניהולית ותעשייתית

פרופ' רון קנת
ד"ר יוסי רענן

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Part I

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מטרת הקורס

- הבנת חשיבות אסטרטגיה ניהולית ותעשייתית בסביבה עתירת טכנולוגיה להשגת:
 - כושר תחרות
 - התאמה לסביבה משתנה
 - יציאה ממשבר
 - כניסה לשווקים חדשים

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מבנה הקורס

תנאי קדם: אין

שיטת הלימוד:

- הרצאות פרונטליות
- ביצוע פרויקט במסגרת צוות

הרכב הציון:

- עבודת גמר – 60% (40% עבודה, 20% מצגת)
- מבחן סיום – 40% (נדרש ציון עובר לשקלול)

נושאי הקורס - 1

מבואות:

התפתחות תפיסות ניהוליות ומיצוב הטכנולוגיה בתעשייה תוך ניתוח משמעויות המהפכה התעשייתית ומהפכת המידע (סולם האיכות).
מבוא לאסטרטגיות הניהוליות העיקריות המיושמות בתעשייה: ניהול איכות, שש סיגמא, מערכות ייצור גמישות. מערכות תוכנה תעשייתיות ומיכון ארגוני.

אסטרטגיה עסקית ושיווקית:

מודלים לניתוח אסטרטגי כגון: BCG, מקינזי, ארטור ד. ליטל, בוז אלן, אופציות ריאליות.

אסטרטגית שרות:

מערך השירות ותפקידו במחזור חיי המוצר. התמיכה הטכנולוגית הנדרשת במערך השירות. הצגת האסטרטגיות הניהוליות העיקריות בשירותים: שירות מבוזר / מרוכז, מוקדי שרות.

אסטרטגית משאבי אנוש:

מודלים למיפוי ארגוני, סקרי עמדות עובדים, מודלים למיפוי משאבי אנוש, הערכת עובדים ממוקדת תהליך.

נושאי הקורס - 2

אסטרטגית התפעול והאיכות:

ניהול זמין ושיטות ייצור ארגוניות יפניות. שש סיגמה.
מערכות ייצור גמישות, ייצור ברשתות ועקרונות הניהול הרב - מוצרי בתעשיות
עתירות מיכון.

אסטרטגית מו"פ וניהול סיכונים:

CMMI, ניהול סיכונים, פרויקט MUSING.

אסטרטגית מערכות מידע ותקשורת:

אסטרטגית IT. תקשורת לסוגיה והשפעותיה על ההיערכות התעשייתית והשירותית.

ניהול השינוי:

מתודולוגית EKD ו BEST

1

מבוא

Definitions

- **Mission:** What business are we in **ייעוד**
- **Vision:** Desired future state of organization **חזון**
- **Values:** Principles to be observed to meet vision **ערכים**

Examples

The Ritz-Carlton Hotel Company:

*In 1983, W.B. Johnson Properties set out to create a fist – an American hotel group with products and services designed to **appeal to** and **suit** the demands of both the **prestigious travel consumer** and the **corporate travel** and meeting planner worldwide.*

Fannie Mae:

Position Fannie Mae to excel in business, profits, and customer service by attracting, developing and retaining quality-focused employees who provide world-class transaction processing services.

General Electric:

Be number one or number two in every market we serve.

Examples

Alcoa:

Alcoa aspires to be the best company in the world.

Eastman Chemical:

Be the best international chemical company.

Texas Instruments:

To be the best defence electronics company in the world.

Aetna:

*We will achieve **sustained, superior profitability and growth** by developing and delivering commercial property/casualty insurance products and services that meet the needs of small businesses.*

לא מה שחשבת, עיתון לאנשים חושבים

הארץ

להרגיש בבית, העיתון של המדינה

ידיעות אחרונות
העיתון של המדינה

עיתון של כולם

מעריב

עובד בשבילך, עיתון העסקים של ישראל

גלובס

היינו רוצים
להתחדש תמיד, כמי המעיין
וכמותם לזרום לעד.

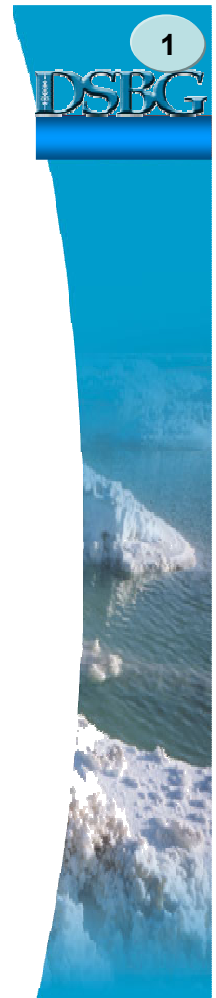
היינו רוצים
למצוא את הנתיבים האפשריים
ולזרום בהם כמי המעיין
ללא חשש לטעות ולחזור
ולזרום אל הים הגדול.

היינו רוצים
להקשיב לצורכי הבאים איתנו במגע
להחיות כל מקום שנזרום בו
להביא באשר נפנה, בענווה ובמקצועיות
את מסר המעיין שאנו שליחיו.

חזון מיטאר

Eastman Chemical Company

**Be the Best International
Chemical Company...**



No. 1 in Bromine and Bromine Compounds

No. 1 in Soil Fumigation

No. 2 in Fire Retardants

The Dead Sea Bromine Group Strategic Objectives

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Our Vision

Teva is a global Israeli based pharmaceutical company. Its vision is to become one of the world's leading pharmaceutical companies, by being the undisputed leader in the global Generics industry and by developing a global franchise in selected Innovative products originating from Israeli science.

Teva differentiates itself by balancing its portfolio with Generic and Innovative activities, by the strategic depth of its vertical integration, by combining local customer responsiveness with a "global edge" and by successfully managing increasing profitable growth and complexity.

Our success lies in the leadership of our management, the skills and devotion of our people, the quality of our offerings and our focus on customers and patients.

Core Values

Leadership

- Think globally and act locally
 - Create value by cross leveraging our global organization's strengths
 - Provide leadership in the communities we serve
- Always be better than the competition

Strategic Discipline

- See the big picture and use a long term approach
- Deliver results on strategic goals
- Think and act strategically on global and local basis

Operational Excellence

- Do more and better for less, rather than Either-Or

Creativity

- Reward and recognize the implementation of strategic innovation and creative thinking

Openness to Change

- Encourage directness and open communication channels
- Be fast and flexible
- Translate challenges into opportunities

Strategic Goals

Sustained Profitable Growth

Approximately 20% top-line annual growth through investments in Research and Development and acquisitions.

Sales double every 4 years. Profits double more rapidly.

Proactive cost containment.

Industry & Market Leadership

To become first or second in each significant market to Teva.

A leader in affordable, Generic and selected Innovative pharmaceutical products.

Strong "First to Market" and "Entire Basket" strategies to ensure competitive advantage.

The leader in the globalizing Generics industry.

Globalization

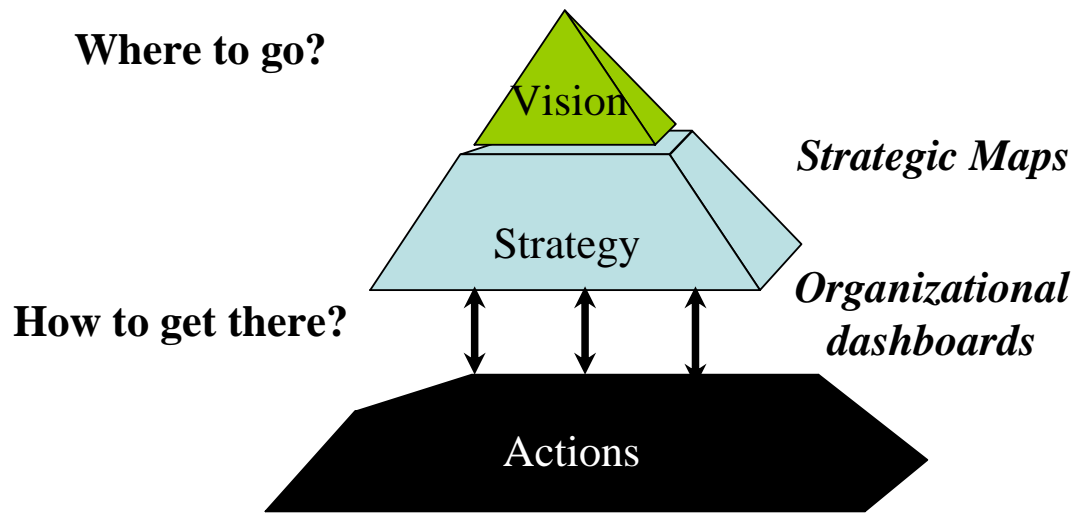
Leverage global strengths in Generic and Innovative activities.

Develop a global franchise for selected Innovative products by leveraging Israeli science.

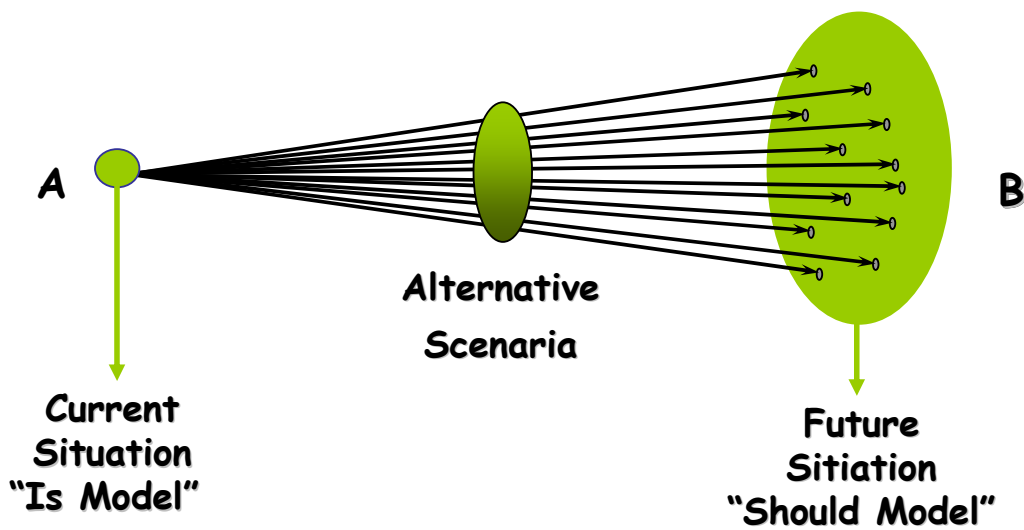
Take an active role in leading the process of globalization in the Generics industry.

Local responsiveness and accountability combined with global efficiency and effectiveness.

Strategic Planning



Strategic Planning





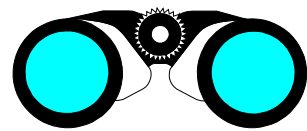
Establish a Vision



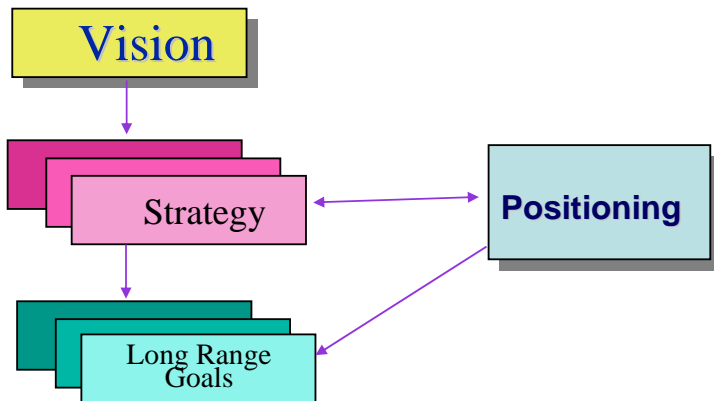
Translate it to Strategic Quality Objectives

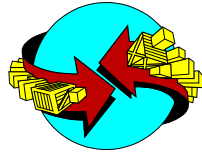


Work to Achieve these Objectives



Far & Wide

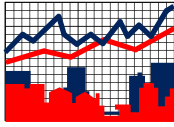




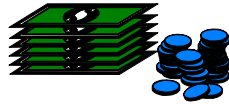
Markets



Competition



Trends



Financial Resources



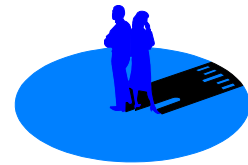
Customers



Products & Services

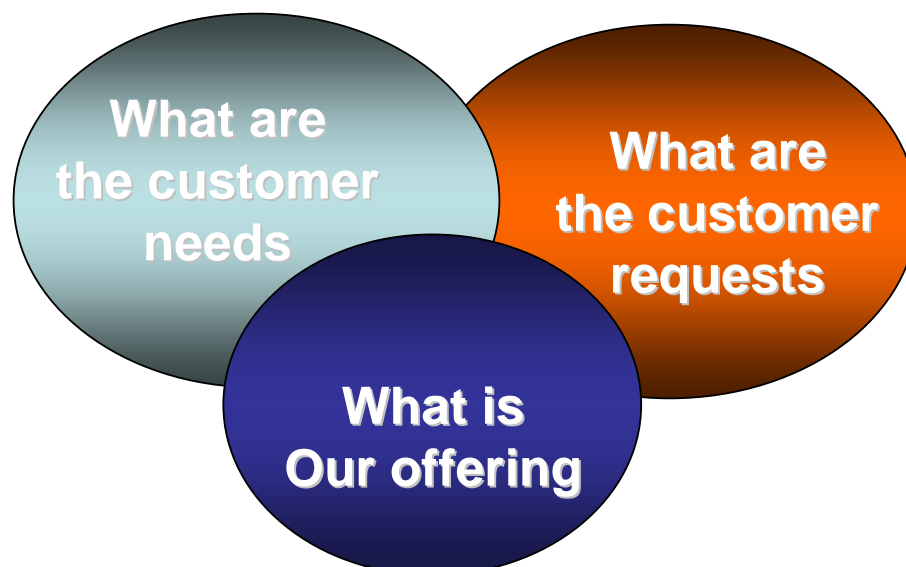


SWOT

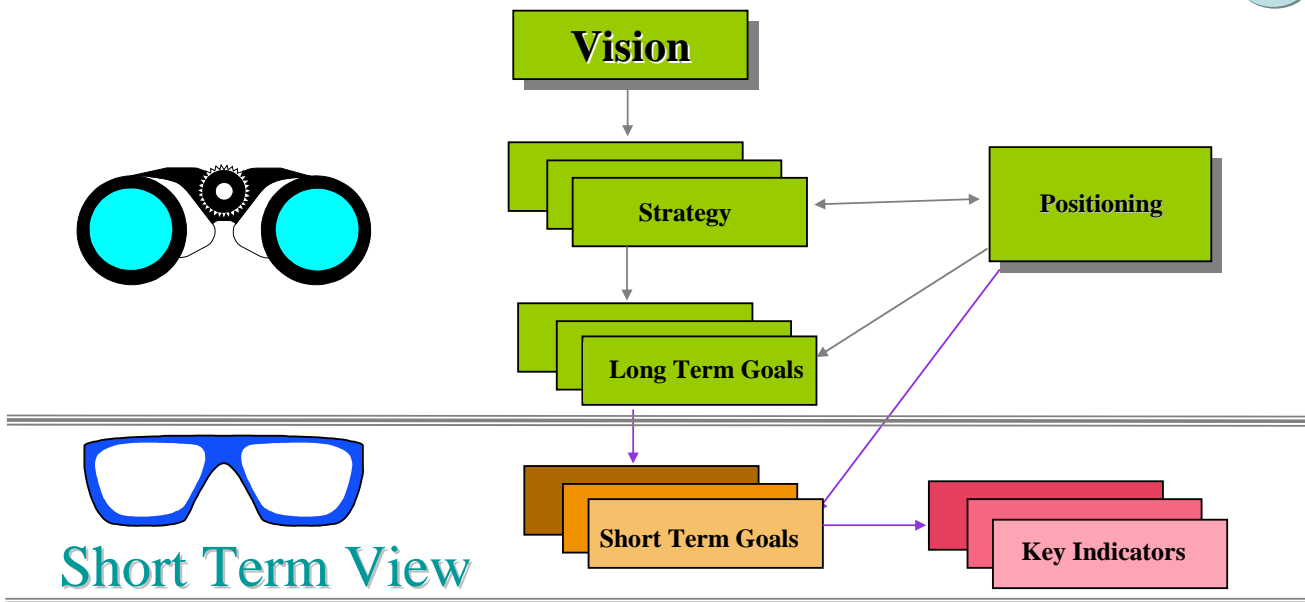
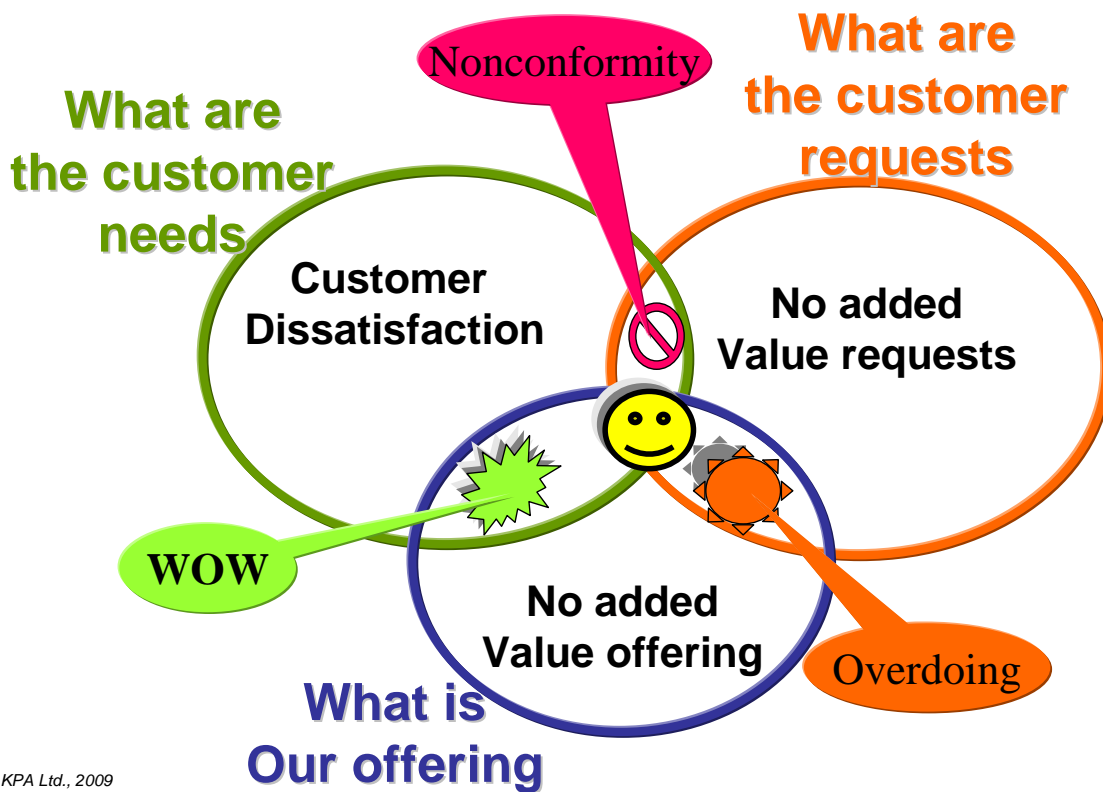


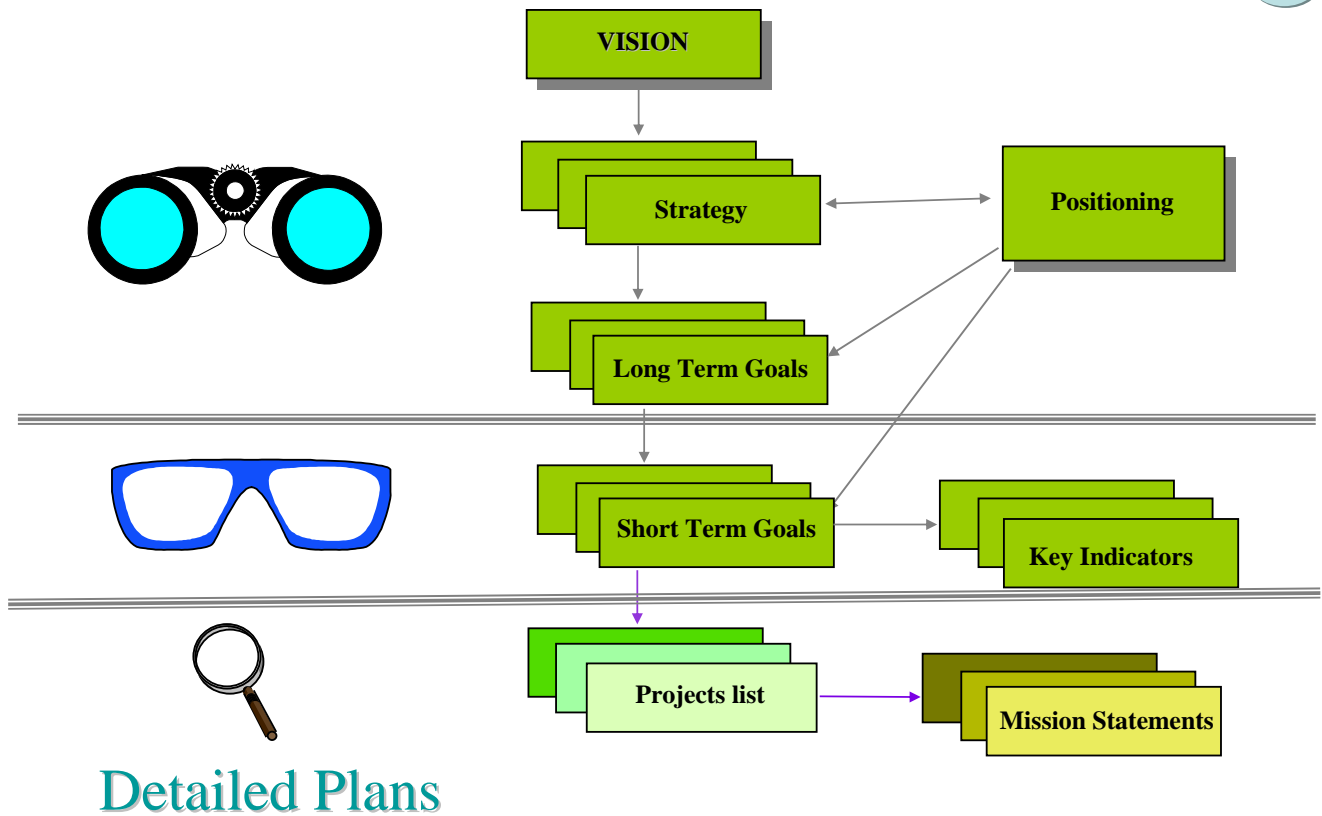
Culture

Three Questions



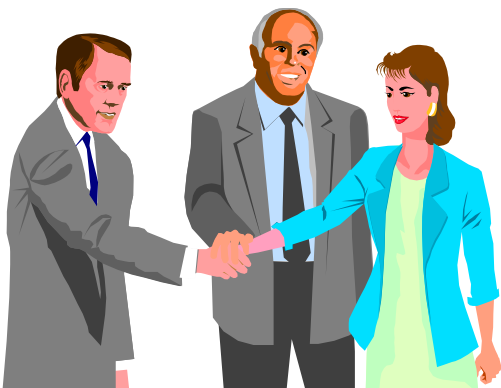
Focus areas



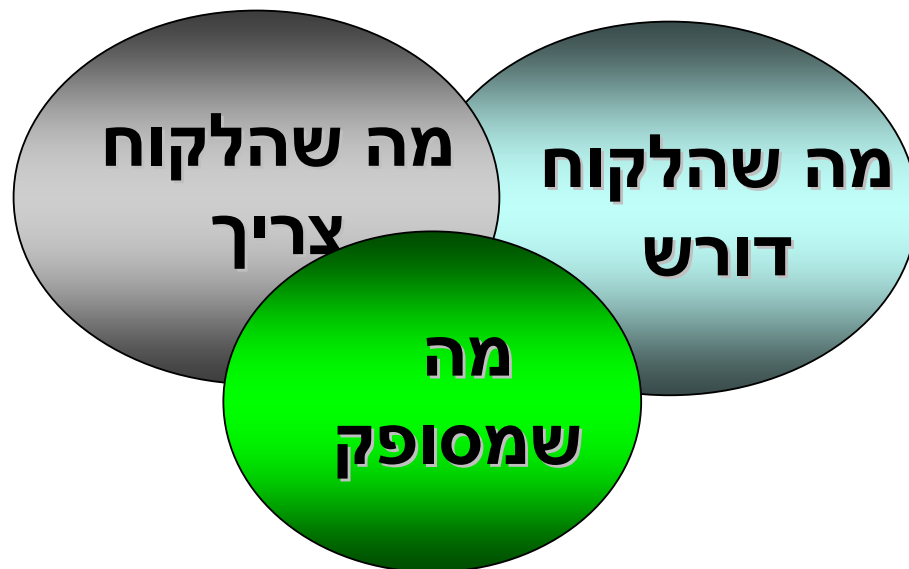


מפעל ההרכבות המוביל בישראל

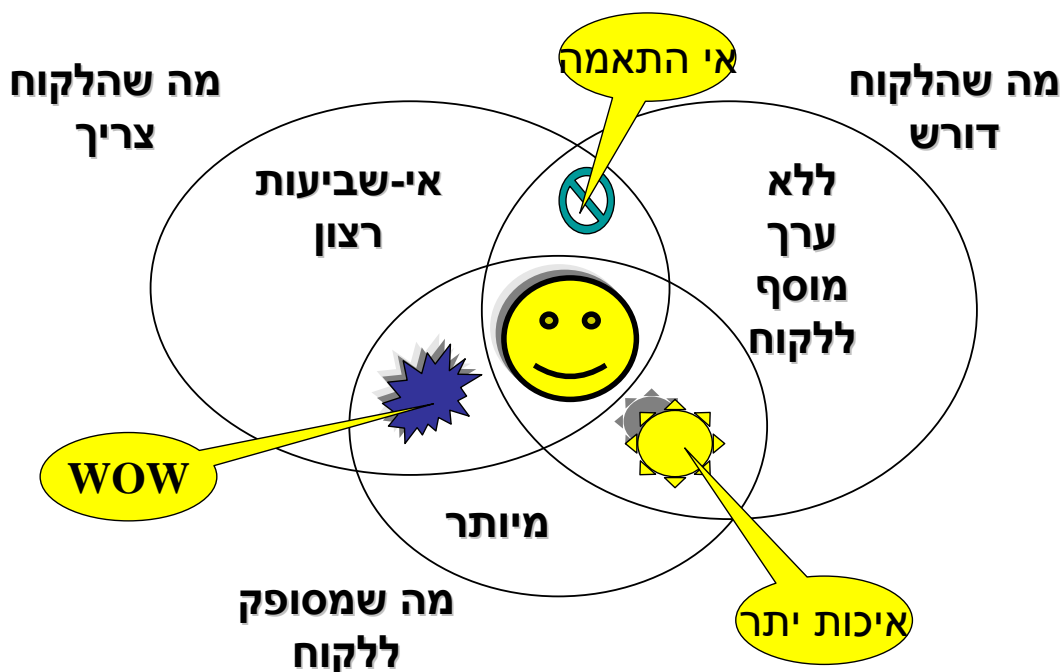
- זמני תגובה קצרים
- משרת את החטיבות בצורה הטובה ביותר
- מוקד רווח
- מצטיין באיכות
- מרכז ידע ברמת מקצועיות גבוהה
- פתרונות TURN KEY



שלוש זוויות ראייה



במה להתמקד?



היקף ומאפייני פעילות נוכחית - 1

נתוני כ"א

- 673 עובדים
- 531 עובדים קבועים
- תגמול ברמה פרטנית

נתוני תקציב

- \$M440 - מכירות
- חומרים+עבודה - \$M150
- עלות - \$M17
- מכירות - \$M13

היקף ומאפייני פעילות נוכחית - 2

הרכבות

- עלות בין 5 - \$ 40
- היקף פעילות - 11 מיליון \$
- עלויות ישירות להרכבות
- כאחוז ממכירות כולל - 3.3%

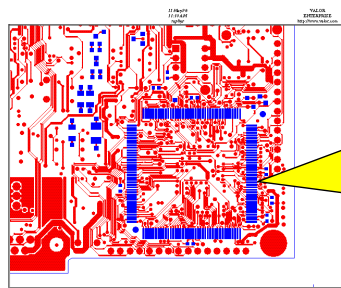
מע"מ

- מס' שכבות ממוצע - 6
- עלות ממוצעת - \$30
- היקף רכש - 10 מיליון \$
- השמות לשנה 200 מיליון

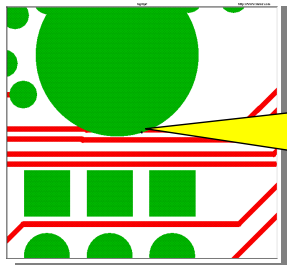
בעיות שהן הזדמנויות

עלות תיקון
ליחידה 1.5\$

תחזית יצור של
6000 יחידות לחודש



אי-התאמה
לתהליך
בקו הרכבה

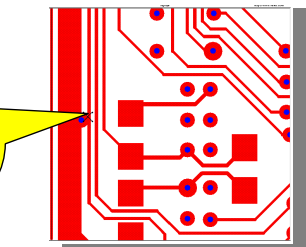


Solder Mask
Coverage

אובחן ע"י מערכת Valor

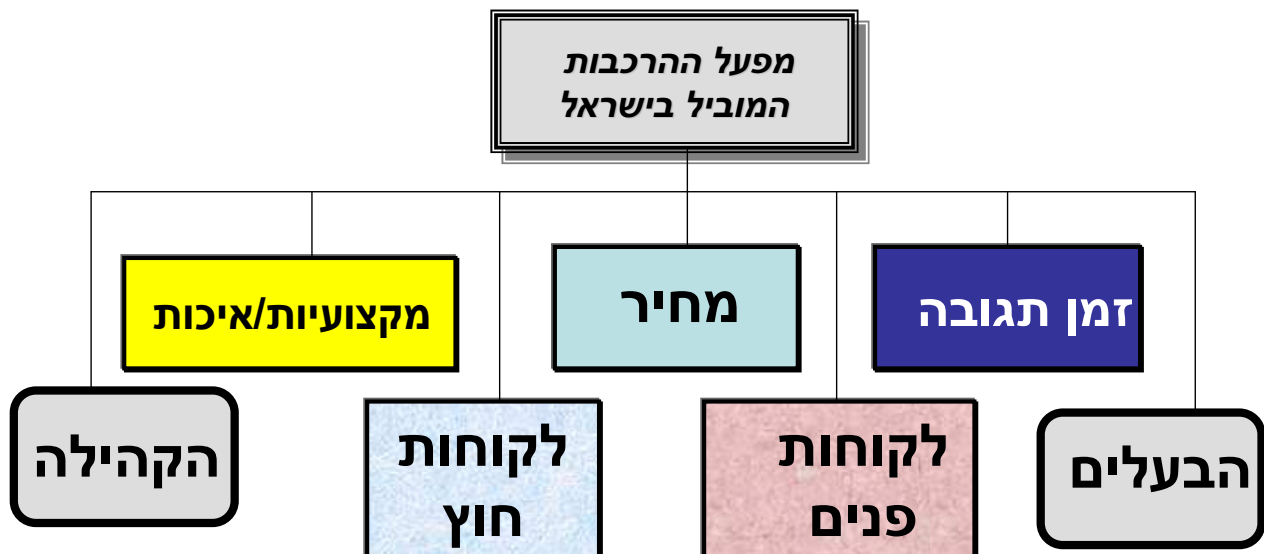


CAD
SHORT

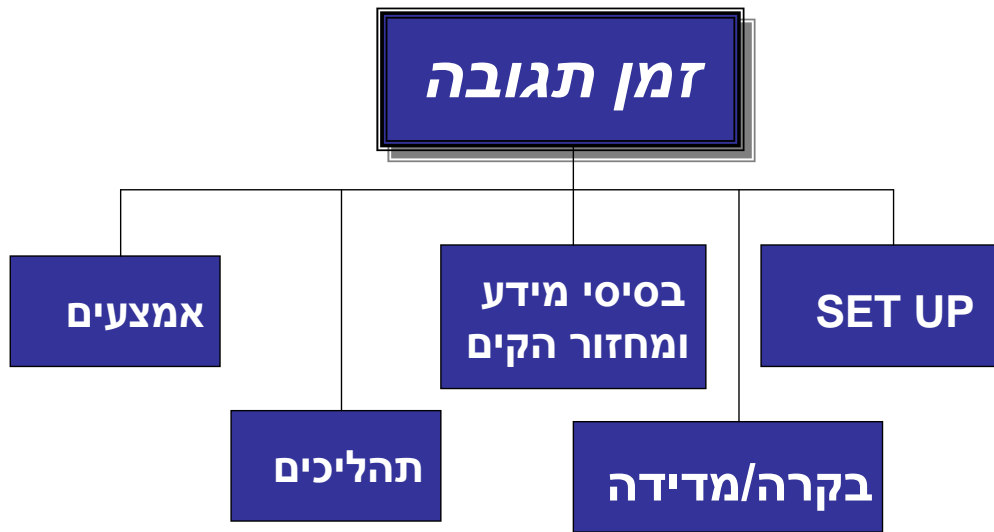


אובחן ע"י מערכת Valor

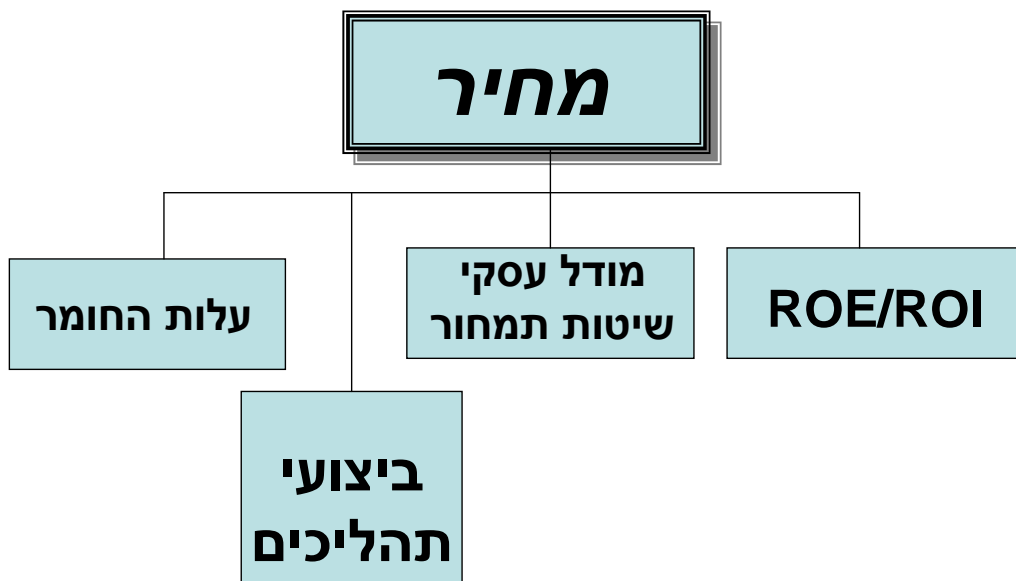
פריסת מטרות



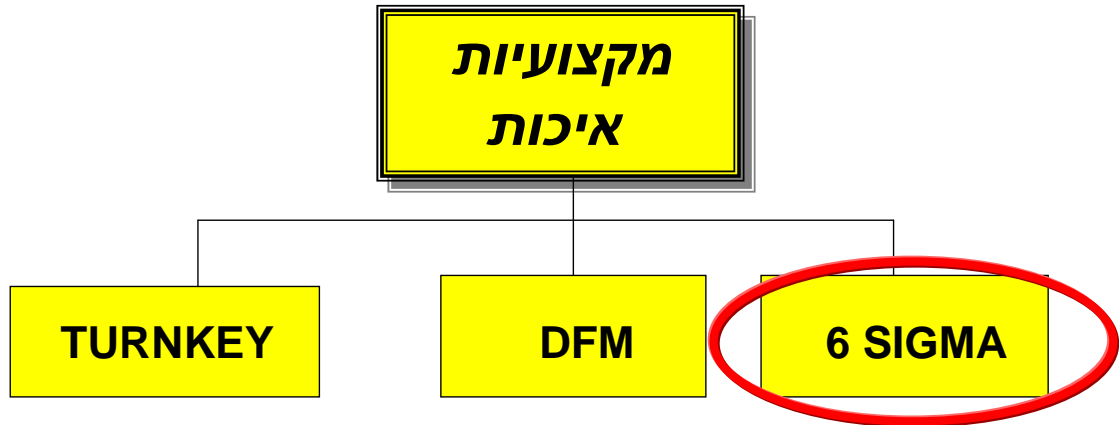
פריסת מטרות



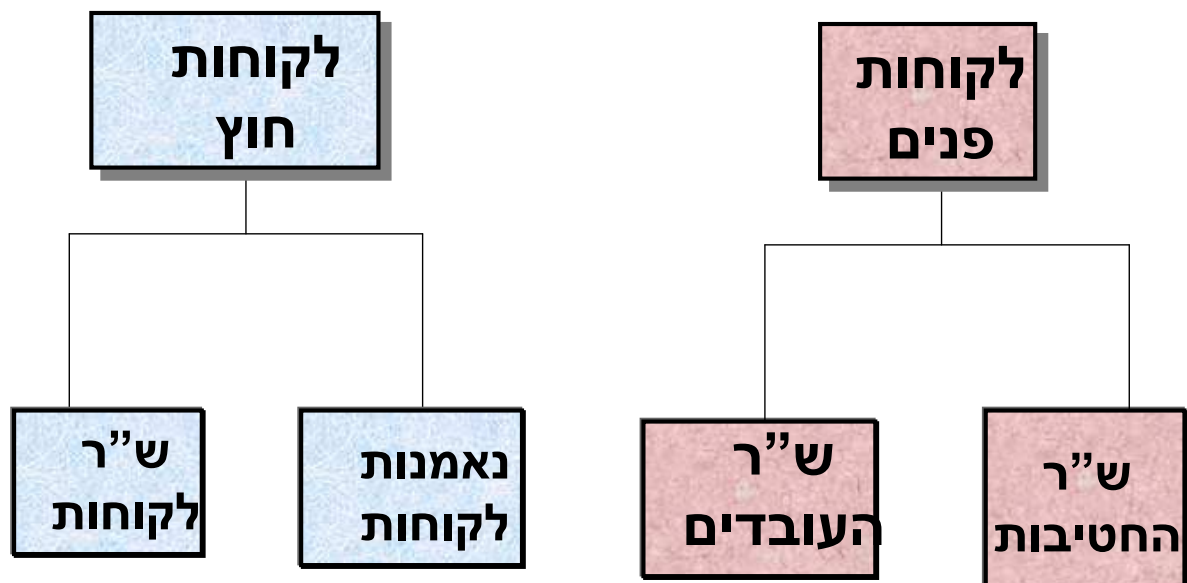
פריסת מטרות



פריסת מטרות



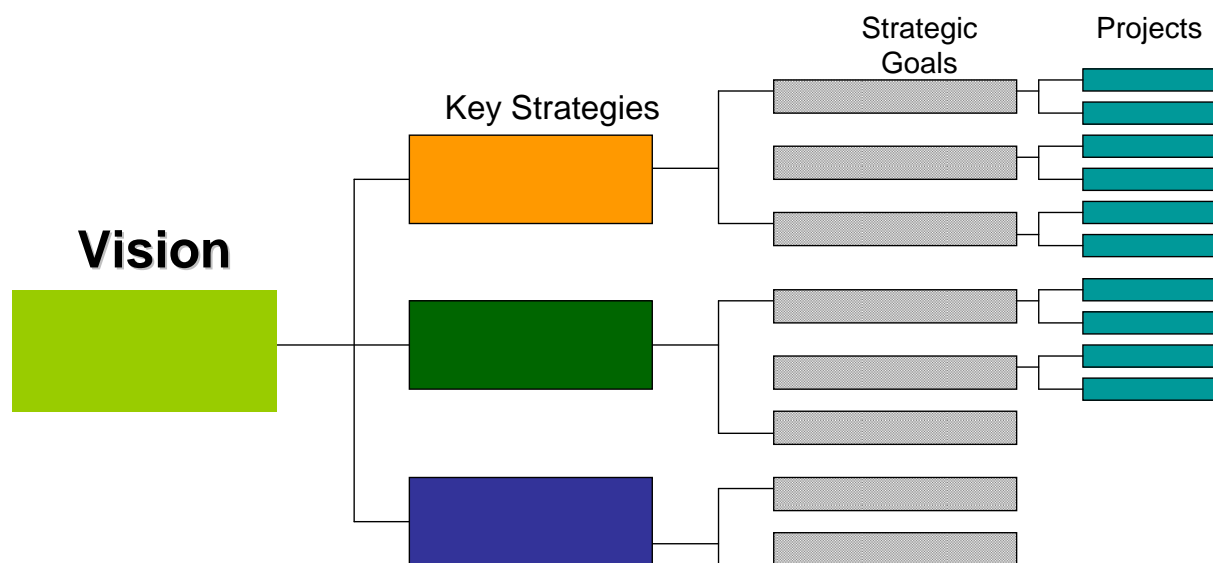
פריסת מטרות



פרקים בתכנית האסטרטגית

- מצב השוק בישראל ובחו"ל
- הטכנולוגיה הנוכחית והעתידית
- דרישות לקוח/הסכמי שותפות
- משאבי אנוש
- איכות
- רכש
- השקעות
- לוגיסטיקה
- מערכות מידע

Deploying the vision

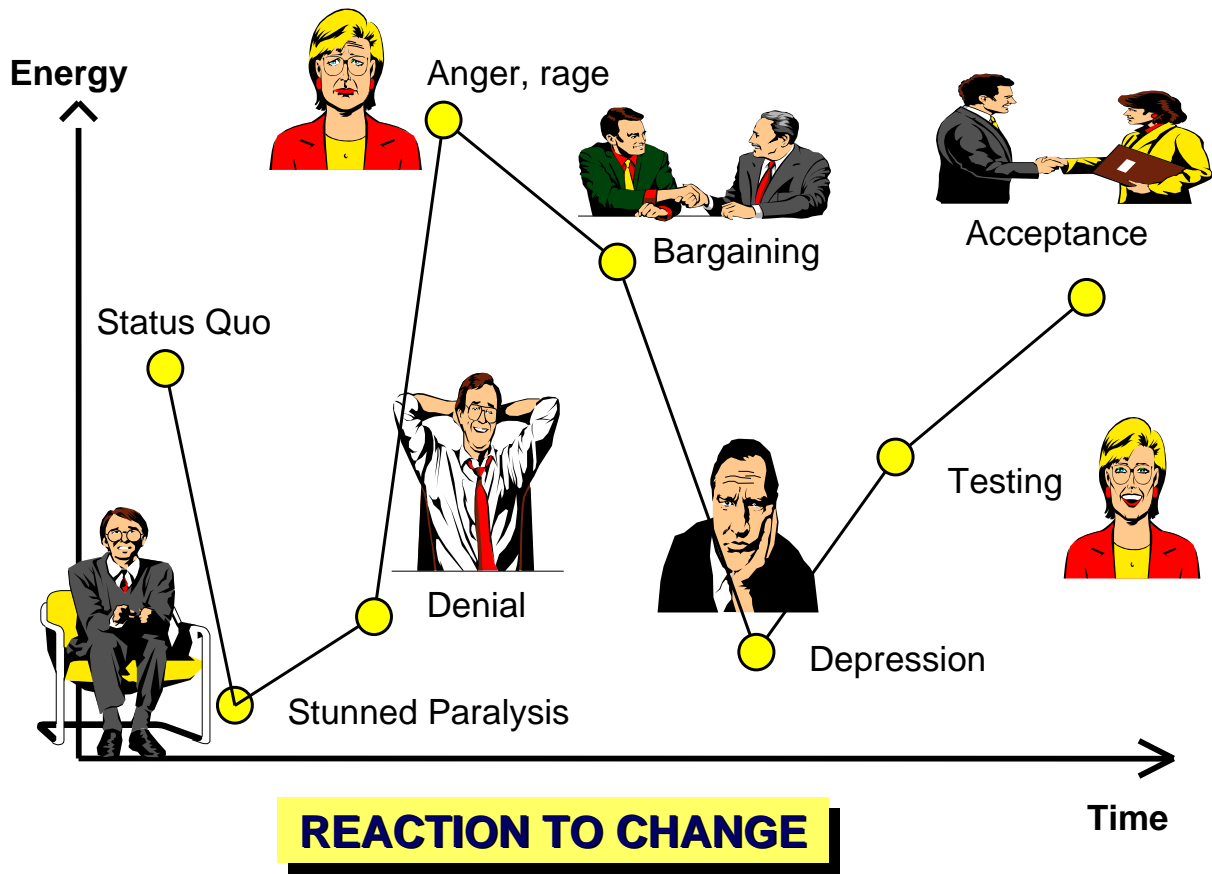


פריסת מטרות



Deploying the vision

Projects	What	When	Who	Where	Why	How
[Yellow bar]						
[Black bar]						
[Black bar]						
[Black bar]						
[Black bar]						
[Black bar]						



אסטרטגיה עסקית

Models for Strategic Planning

- (1) קנת רון, "תכנון אסטרטגי לאיכות ככוח מניע", ניהול, דצמבר 1993.
- (2) קנת רון, עתי זיו ואורי קן-דרור, " בחינת חלופות אסטרטגיות על בסיס מדדים פיננסיים , הכנס הבינלאומי של האיגוד הישראלי לאיכות, ירושלים 2000.

Background

- Portfolio management and the prioritization of new product projects has become critical management task in the past decade.
- An estimated 50 percent of a firm's sales today come from new products introduced to the market within the previous five years.

Definitions - 1

Business Strategy – Specifies the goals, direction and areas of focus for the business unit.

Business Unit (BU) – This is the smallest unit in the company for which portfolio management is undertaken. Usually a BU (or SBU – strategic business unit) has its own goals, strategy, and resources. For example, a BU is likely to have its own R&D budget. For smaller firms, the BU may be the entire company.

Definitions - 2

New Product Strategy – This is a component of or (flows from) the business strategy. It specifies goals, direction, and areas of focus (that is areas in which product development efforts will focus). It may even specify desired levels of R&D and new product spending in specific arenas of focus (for example, how much to spend on certain markets or product categories).

Definitions - 3

Portfolio management for new products - Portfolio management for new products is a dynamic decision process wherein the list of active new products and R&D projects is constantly revised. In this process, new projects are evaluated, selected, and prioritized. Existing projects may be accelerated, killed, or de-prioritized and resources are allocated and reallocated to the active projects. The portfolio decision process is characterized by uncertain and changing information, dynamic opportunities, multiple goals and strategic considerations, interdependence among projects, and multiple decision makers and locations.

Definitions - 4

Portfolio Models – These are the specific models or tools used to select projects or review the portfolio. They include scoring models, bubble diagrams and maps charts, financial models, and strategic approaches.

Portfolio Management Methods

- Financial or economic models
- Scoring models and checklists
- Probabilistic financial models
- Behavioral approaches
- Mathematical optimization procedures
- Decision Support Systems (DSS)
- Mapping Approaches

Which Dimensions to Consider?

Sample list of possible parameters to consider. Any pair can be the X and Y axes for a bubble plot:

- Fit with business or corporate strategy (low, medium, high)
- Inventive merit
- Strategic importance to the business (low, medium, high)
- Durability of the competitive advantage (short, medium, long-term)
- Reward based on financial expectations (modest to excellent)
- Competitive impact of technologies (base, key, pacing, and embryonic technologies)
- Probabilities of success (technical and commercial success as percentages)

Dimensions to Consider - 2

- R&D costs to completion (dollars)
- Time to completion (years)
- Capital and marketing investment required to exploit (dollars).
- Markets or market segments (market A, market B, etc.)
- Product categories or product lines (product line M, product line N, etc.)
- Project types (new products; product improvements; extensions and enhancements; Maintenance and fixes; cost reductions; and fundamental research
- Technology or platform types (technology X, technology Y, etc.).

Strategic Assessment variables

Market Attractiveness

- Market growth rate
- Market profitability
- Volatility of market demand
- Customer bargaining power
- Price elasticity
- Customer brand loyalty
- Product differentiation
- Stage in life cycle
- Market barriers to entry/exit
- Access to critical/special components
- Rate of technological change
- Technology/Innovation importance as perceived by customers
- Regulatory climate
- Volatility of exchange rates/inflation/political situation
- Level of competition after analyzing the characteristics of competition
- Threats by alternative solutions

Strategic Assessment variables

Relative Market position

- Relative market share
- Market share growth
- Company's image as perceived by customers
- Customer loyalty to our company
- Company's prices relative to competitors
- Company's quality relative to competitors
- Company's service relative to competitors
- Leader in technological innovation
- Marketing skills and strength
- Relationships with regulators
- Distribution network coverage
- Distribution network effectiveness
- After-sales service
- Probability of marketing plan success
- Overall competitive position

Strategic Assessment variables

Technology and Finance

- Innovation
- Technological competitive strength
- Patented technology, product or process
- Technology skills (production)
- Production efficiency
- Relative cost position
- Quality of personnel
- Company's responsiveness
- Probability of technical success
- Potential Reward

Strategic Models Categories

Market Oriented Portfolios

- The market attractiveness competitive position matrix
- The ADL Model

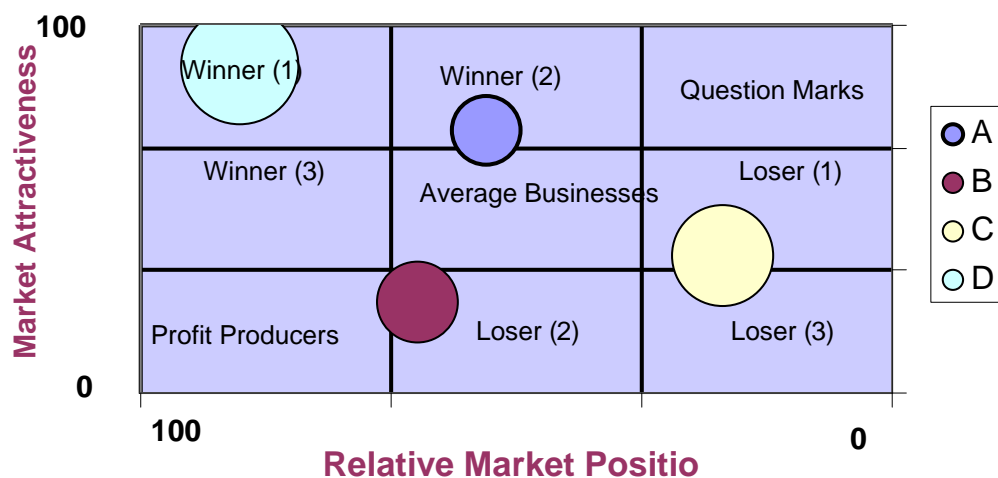
Technology Oriented Portfolios

- The Technology Portfolio
- Booz Innovation Model

Finance Oriented Portfolios

- The Risk-Reward Model
- The Real Options Model

The market attractiveness competitive position matrix



Note: The circles in the diagram indicate relative sales

The market attractiveness competitive position matrix

2

Relative market dominance variables:

- Market growth rate
- Market profitability
- Volatility of market demand
- Customer bargaining power
- Price elasticity
- Customer brand loyalty
- Product differentiation
- Market barriers to entry/exit
- Access to critical/special components
- Rate of technological change
- Regulatory climate
- Volatility of exchange rates/inflation/political situation
- Level of competition after analyzing the characteristics of competition
- Threats by alternative solutions

Market Attractiveness variables:

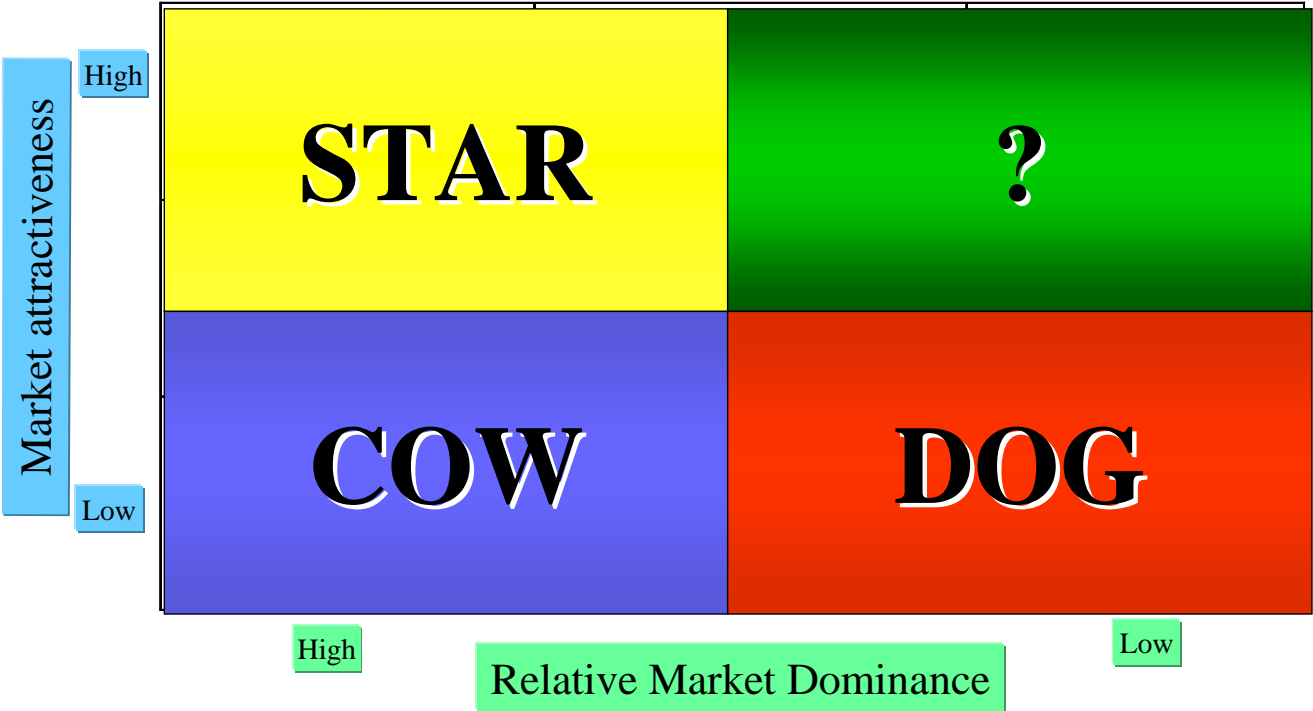
- Relative market share
- Market share growth
- Company's image as perceived by customers
- Customer loyalty to our company
- Company's prices relative to competitors
- Company's quality relative to competitors
- Company's service relative to competitors
- Leading technological innovation
- Marketing skills and strength
- Relationships with regulators
- Distribution network coverage
- Distribution network effectiveness
- After-sales service
- Technological competitive strength
- Patented technology, product or process
- Technology skills (production)
- Production efficiency
- Relative cost position
- Quality of personnel

The market attractiveness competitive position matrix

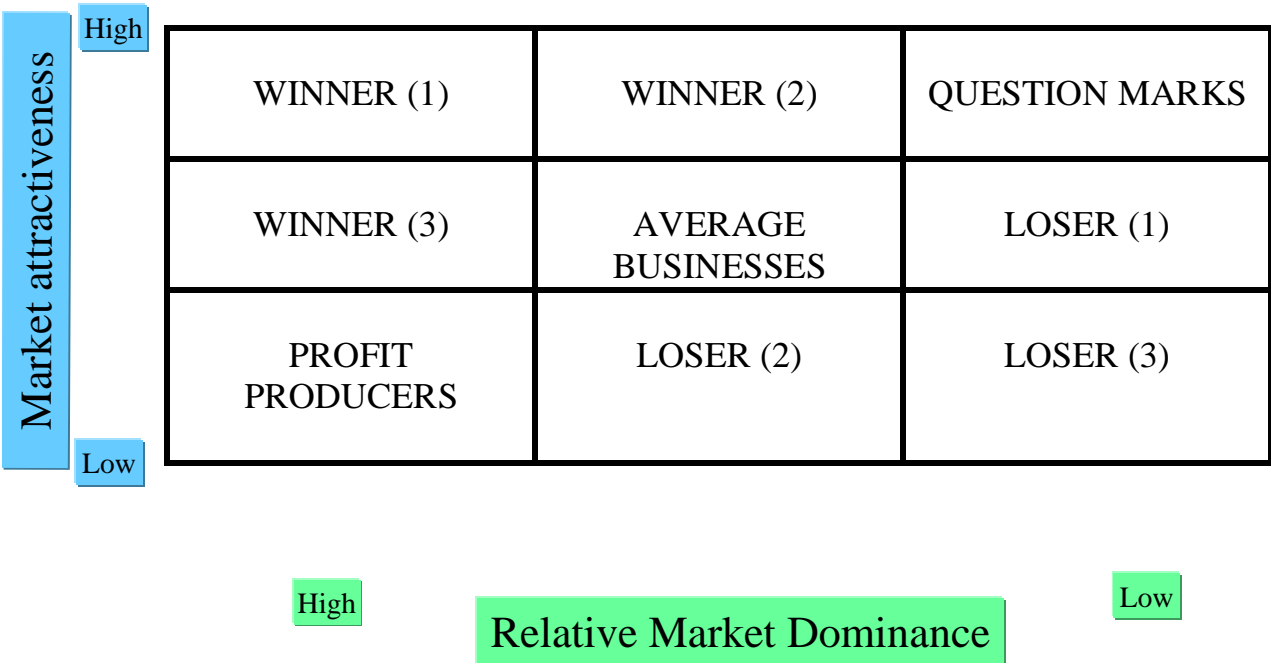
2

- The model focuses on future profits.
- The Y axis represents the industry attractiveness.
- The X axis represents the business strength- comprises of market position and competitive strength.
- The DPM and BCG models that are not presented, are very similar to this model

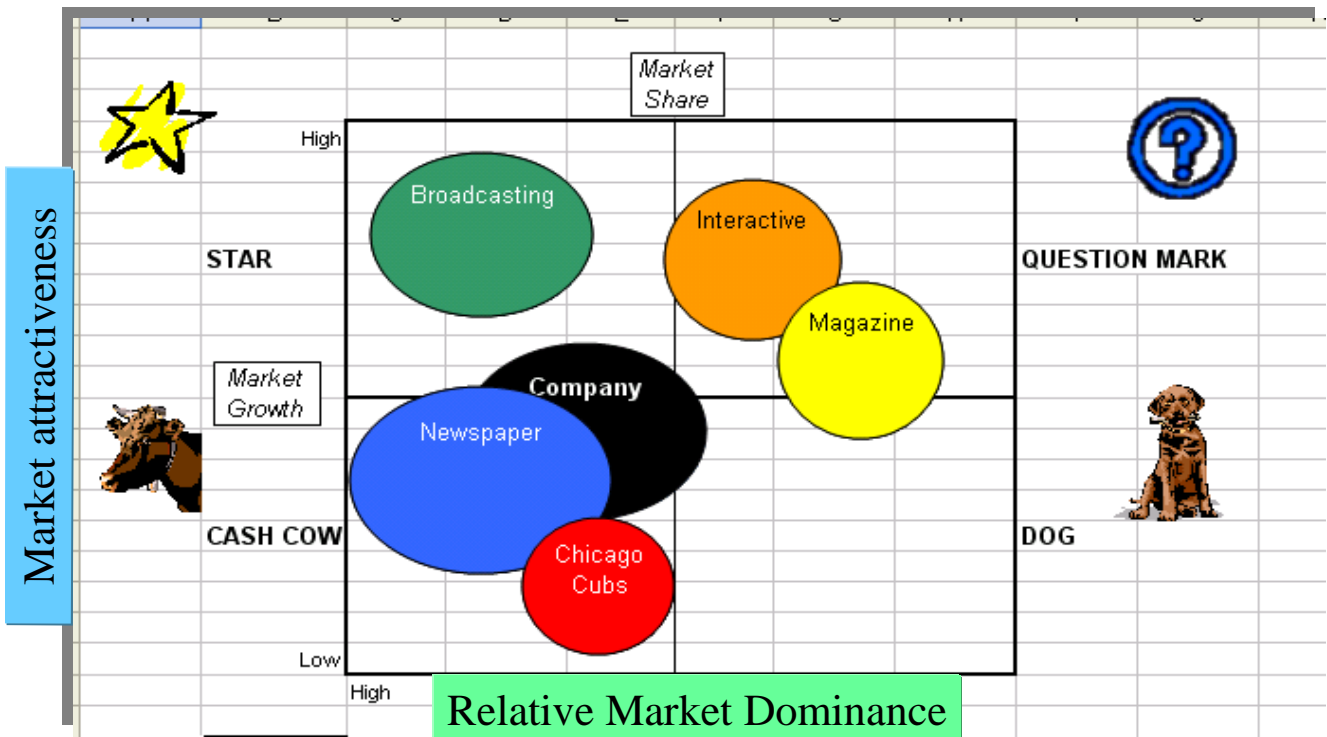
The BCG model



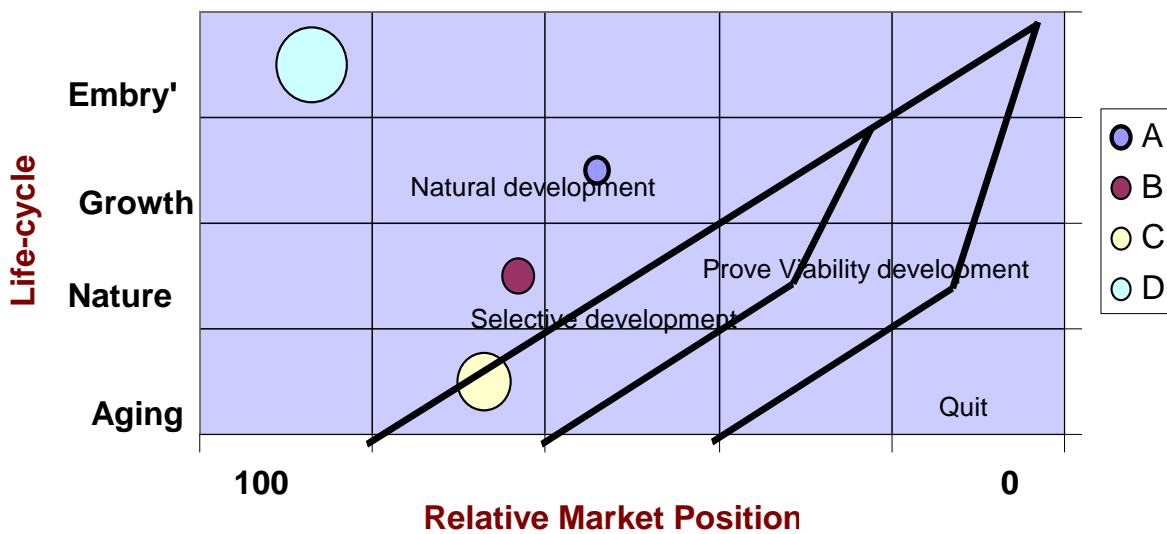
The BCG model



The BCG model



The ADL Model



Note: The circles in the diagram indicate relative sales

The ADL Model

Business-strength variables:

- Market growth rate
- Market profitability
- Volatility of market demand
- Customer bargaining power
- Price elasticity
- Customer brand loyalty
- Product differentiation
- Market barriers to entry/exit
- Access to critical/special components
- Rate of technological change
- Regulatory climate
- Volatility of exchange rates/inflation/political situation
- Level of competition after analyzing the characteristics of competition
- Threats by alternative solutions

Life-cycle stage variable:

- Life-cycle stage

The ADL Model

- The planning focus is RONA (Return On Net Assets).
- The concept is a balanced corporate portfolio: Positive cash flow, the SBUs average weighted RONA meets corporate goals.
- The X axis represents relative market dominance.
- The Y axis represents stages in life-cycle: embryonic, growth, mature and aging.
- The planning of strategies is performed in consecutive steps: SBU's area in the matrix, SBU's cell in the matrix and generic strategy – an operational planning

The ADL Model

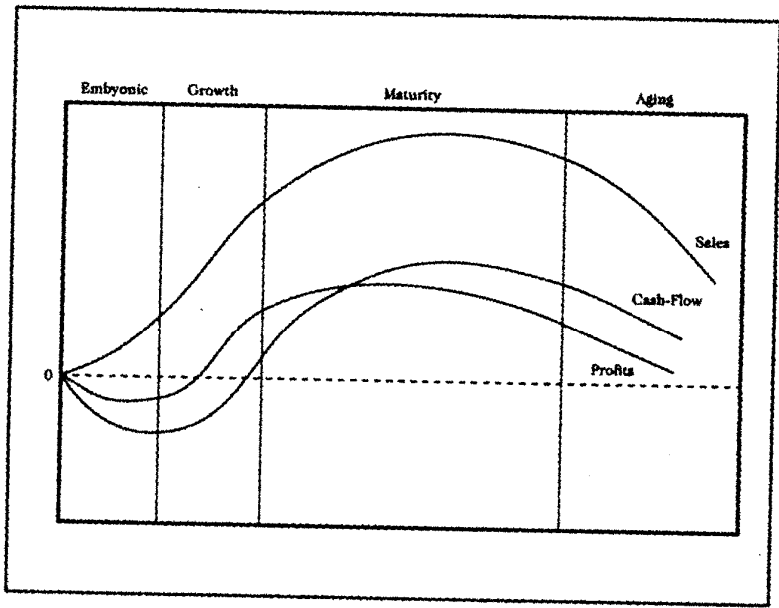
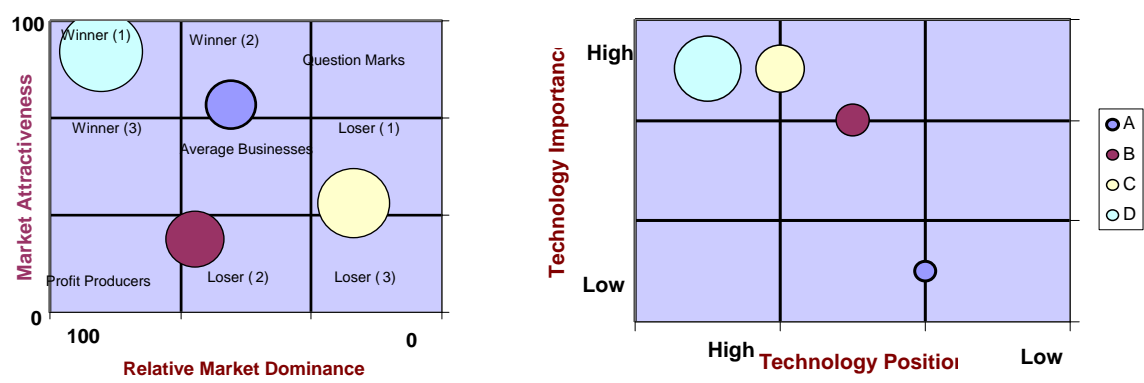


Figure 6.2 Yearly sales, cash flow, and profits through the industry life-cycle stages.

The Technology Portfolio

Compared to Market attract'-competitive model



The Technology Portfolio

Technology position variables:

- Technological competitive strength

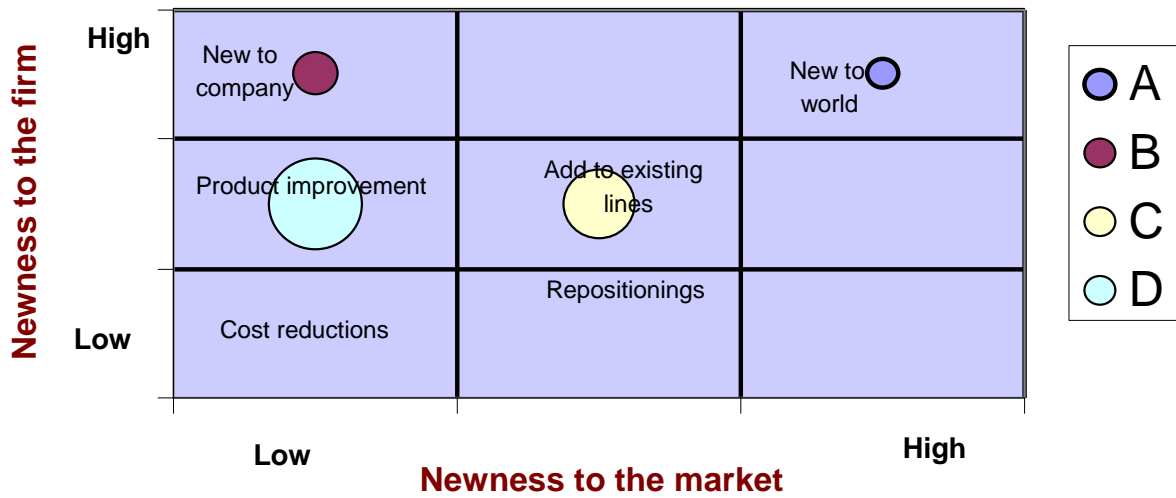
Technology importance variable:

- Technology/Innovation importance as perceived by customers

The Technology Portfolio

- This framework examines the relationship between the traditional portfolio planning matrix (represented earlier by Market attract'-competitive model) and the technology portfolio matrix.
- The two diagrams enable to investigate the match (or mismatch) of a firm's business and technology portfolios and its resulting technology investment priorities.

Booz-Innovation Model

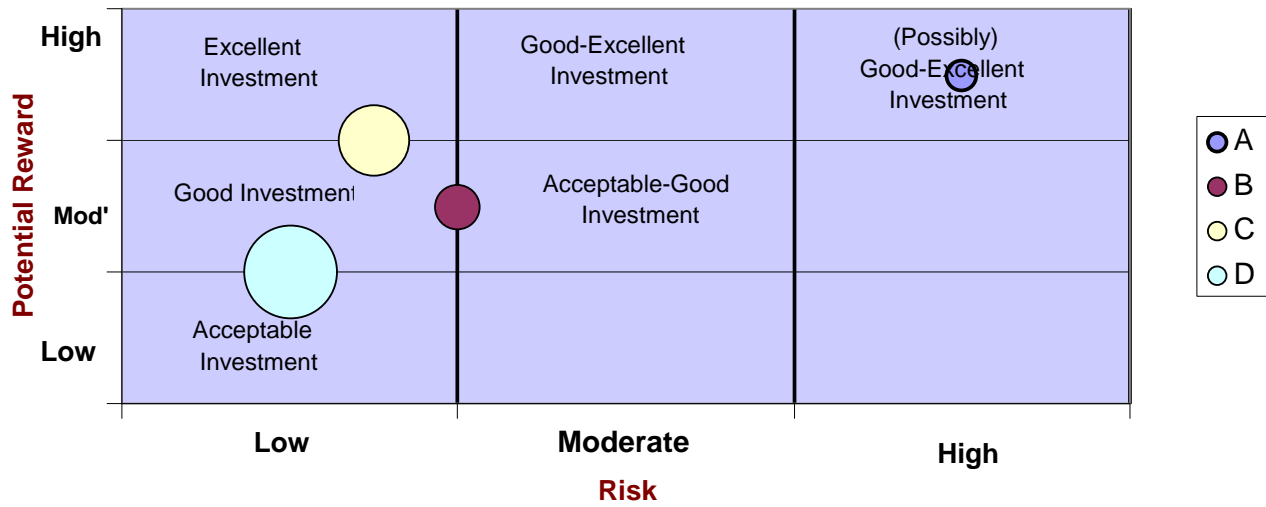


Note: The circles in the diagram indicate relative R&D budget

Booz-Innovation Model

- This framework is useful way to interlink different formats of innovation.
- There is a generic typology of strategy on the basis of the speed of response to changes in product-market environment.

The Risk-Reward Model



Note: The circles in the diagram indicate relative Investments.

The Risk-Reward Model

Risk variables:

- Probability of marketing plan success
- Probability of technical success

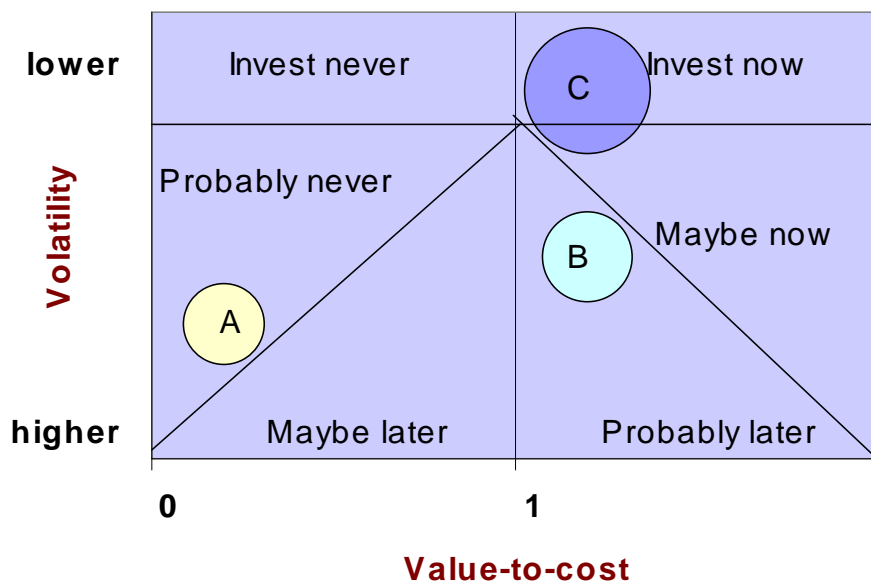
Potential Reward variable:

- Potential Reward

The Risk-Reward Model

- Focuses conclusively on profitability.
- The model aims to increase productivity of investments.
- Risk is built-in in the model in comparison to the rest of models, where we could add risk as third dimension.

The Real Options Model



The Real Options Model

- The model suggests monitoring the options and looking for ways to influence the variables that determine option value and outcomes.
- The option space helps to determine whether to invest or not, when to invest and what to do on the meantime.
- The X axis represents the net present value and time value of the ability to defer the investment.
- The Y axis represents how much things can change before an investment decision must finally be made.
- Option space gives us 6 possible actions that reflect the likelihood of the project ending successfully in the future.
- In a dynamic approach there is a possibility to nest options.

The Real Options Model

OBJECTIVES

- **Monitor options in a projects' portfolio**
- **Determine whether to invest or not, when to invest and what to do in the meantime.**
- **Option space with six possible actions**
- **Possibility to nest options.**

The Real Options Model

PARAMETERS

- **A: Underlying asset value (\$millions)**
- **X: Exercise price (\$ millions)**
- **t: Time to expiration (years)**
- **r: Risk-free rate of return (% per year)**
- **S²: Variance of return on investment**

The Real Options Model

ANALOGY

A: Present value of a project's operating assets to be acquired

>>>> **Stock price**

X: Expenditure required to acquire the project assets

>>>> **Exercise price**

t: Length of time the decision may be deferred

>>>> **Time to expiration**

r: Time value of money

>>>> **Risk-free rate of return**

S²: Risk of project assets

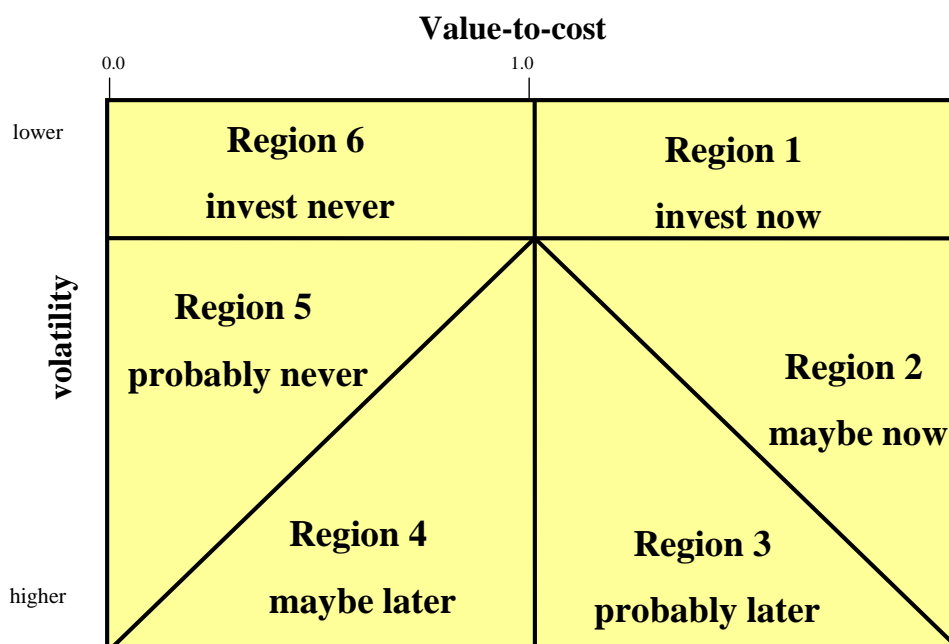
>>>> **Variance of returns on stock**

The Real Options Model

MODEL DIMENSIONS

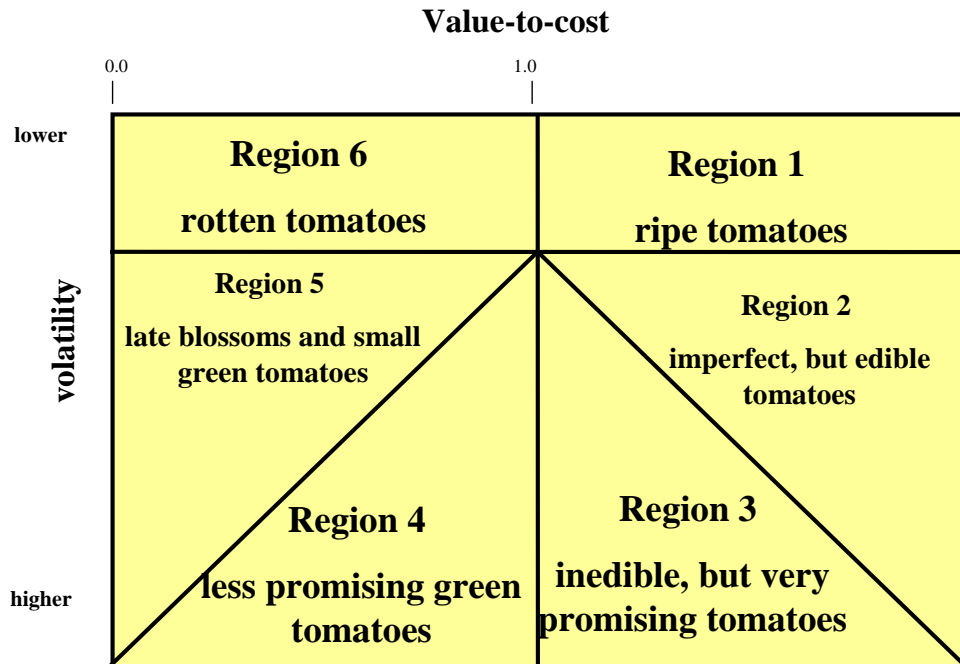
- NPV: Naïve Net Present Value = $A - X$
- PV(X): Present Value = $X / (1+r)^t$
- $A / PV(X)$: Value to Cost Ratio
- $S[t^{0.5}]$: Volatility per year

The Real Options Classification



The Real Options Classification

The tomato garden analogy



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Six Benchmark Projects

Variable	F	E	D	C	B	A	Portfolio value
A	100	100	100	100	100	100	
X	110	110	110	110	90	90	
t	2	1	0.5	0	2	0	
S	.30	.30	.30	.20	.30	.40	
r	0.06	0.06	0.06	0.06	0.06	0.06	
value to cost	1.021	0.964	0.936	0.909	1.248	1.111	
volatility	0.566	0.3	0.141	0	0.424	0	
Call value	23.24	10.42	3.06	0	27.23	10	73.95
Naïve NPV	- 10	- 10	- 10	- 10	10	10	20
Region	3	4	5	6	2	1	
Exercise Option	Probably later	Maybe later	Probably never	never	Maybe now	now	

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Six Benchmark Projects

Variable	C	A
A	100	100
X	110	90
t	0	0
S	.20	.40
r	0.06	0.06
value to cost	0.909	1.111
volatility	0	0
Call value	0	10
Naïve NPV	- 10	10
Region	6	1
Exercise Option	never	now

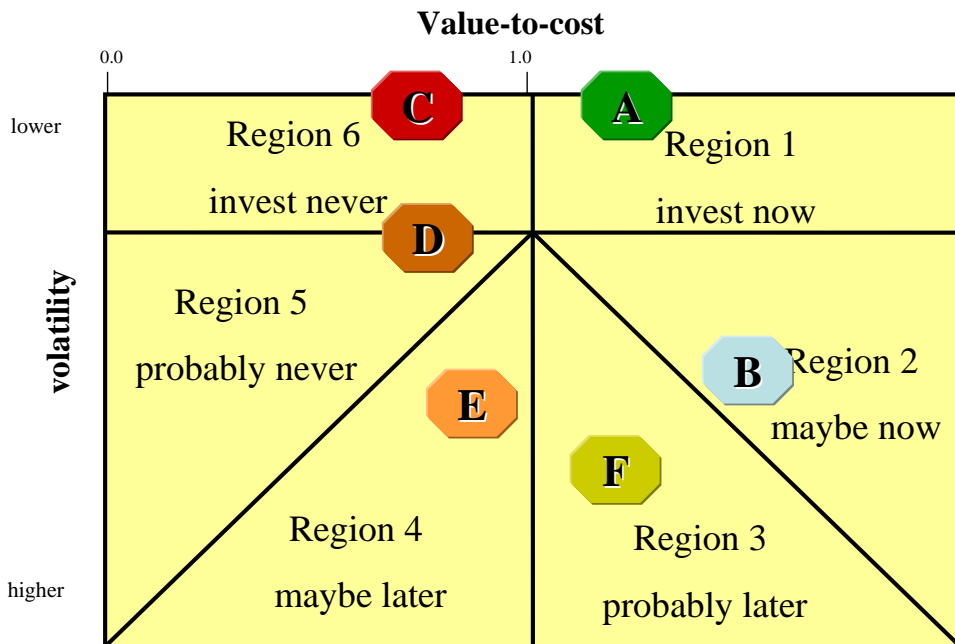
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Six Benchmark Projects

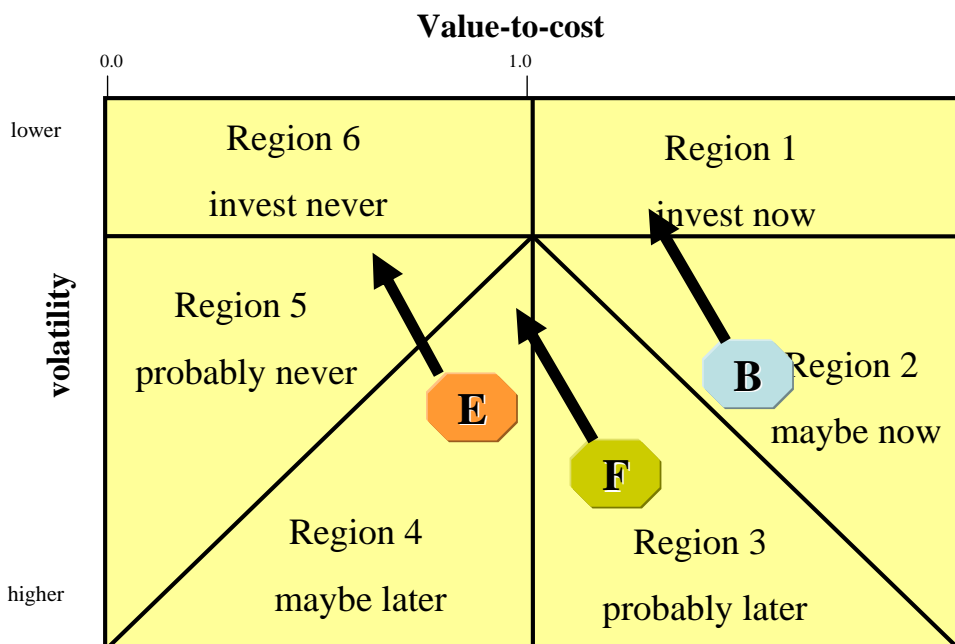
Variable	F	E	D	C	B	A	Portfolio value
A	100	100	100	100	100	100	
X	110	110	110	110	90	90	
t	2	1	0.5	0	2	0	
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Naïve NPV	- 10	- 10	- 10	- 10	10	10	20
Region	3	4	5	6	2	1	
Exercise Option	Probably F	Maybe E	Probably D	never C	Maybe B	A	

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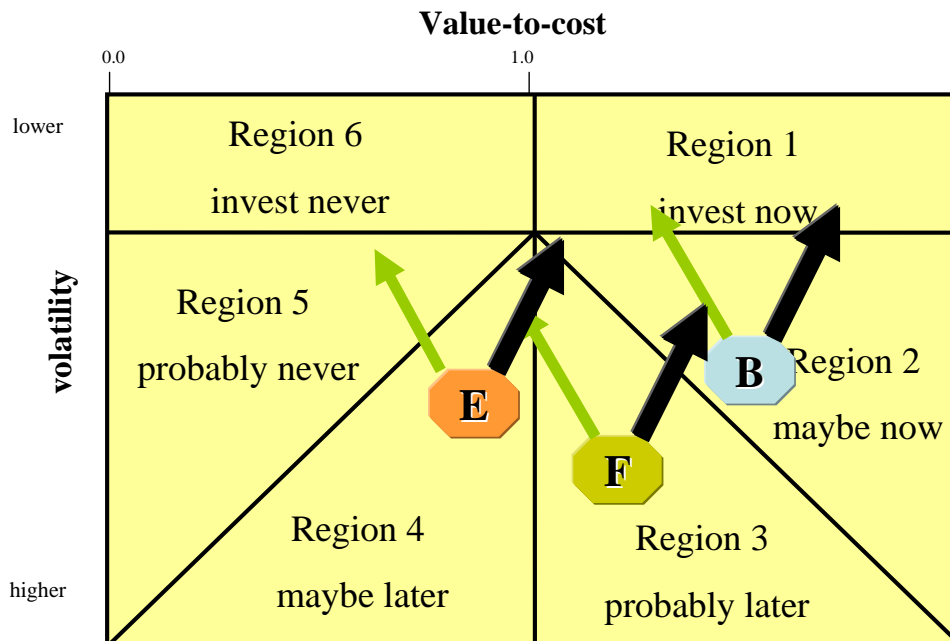
Six Benchmark Projects



The Effect of Time



The Effect of Management



Real Options Applications

- Valuing a Start-up
- Investing in a Start-up
- Managing Long Term Projects
- Investing in R&D
- Investing in Infrastructure
- Investing to Preempt Competitors

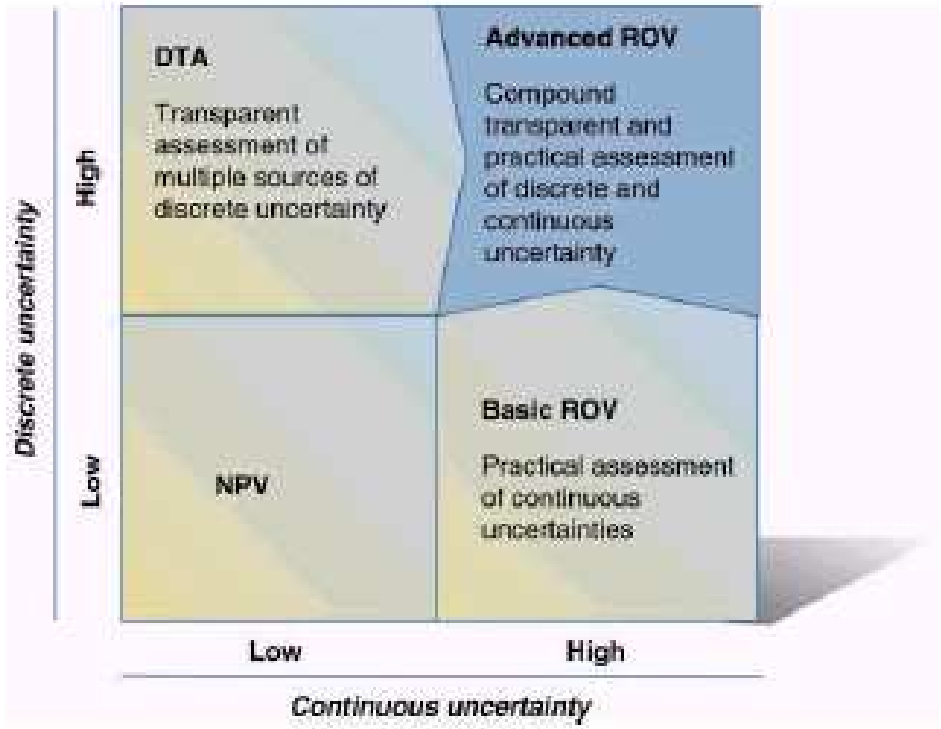
Different types of real options

- Option to defer
- Time to build option (Staged investment)
- Option to alter operating scale
- Option to abandon
- Option to switch
- Growth options
- Multiple interacting options.

Different types of real options

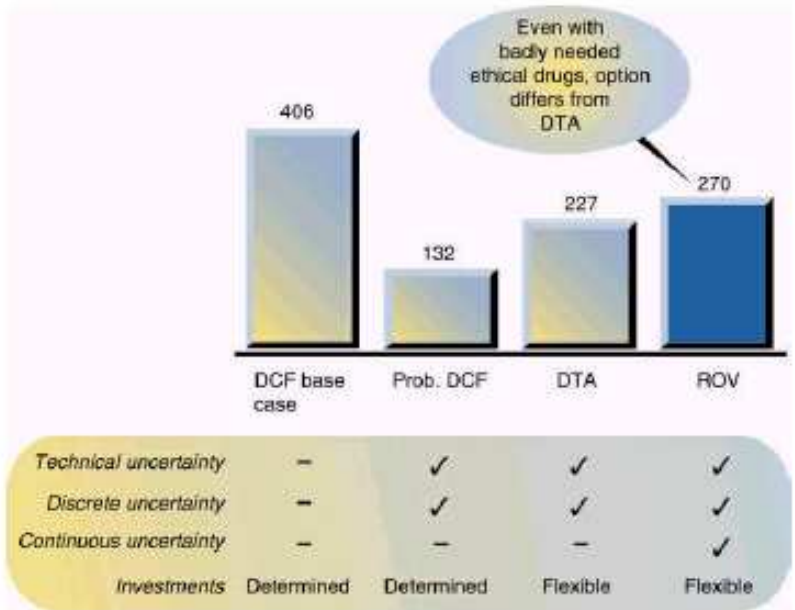


Coping with uncertainty



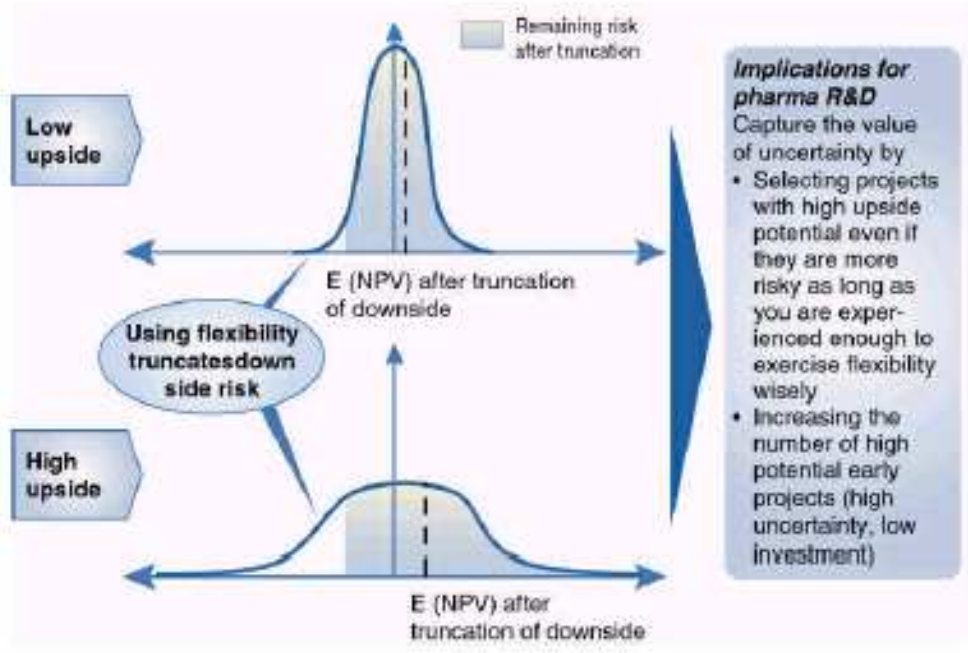
Comparison of project value

\$ Millions

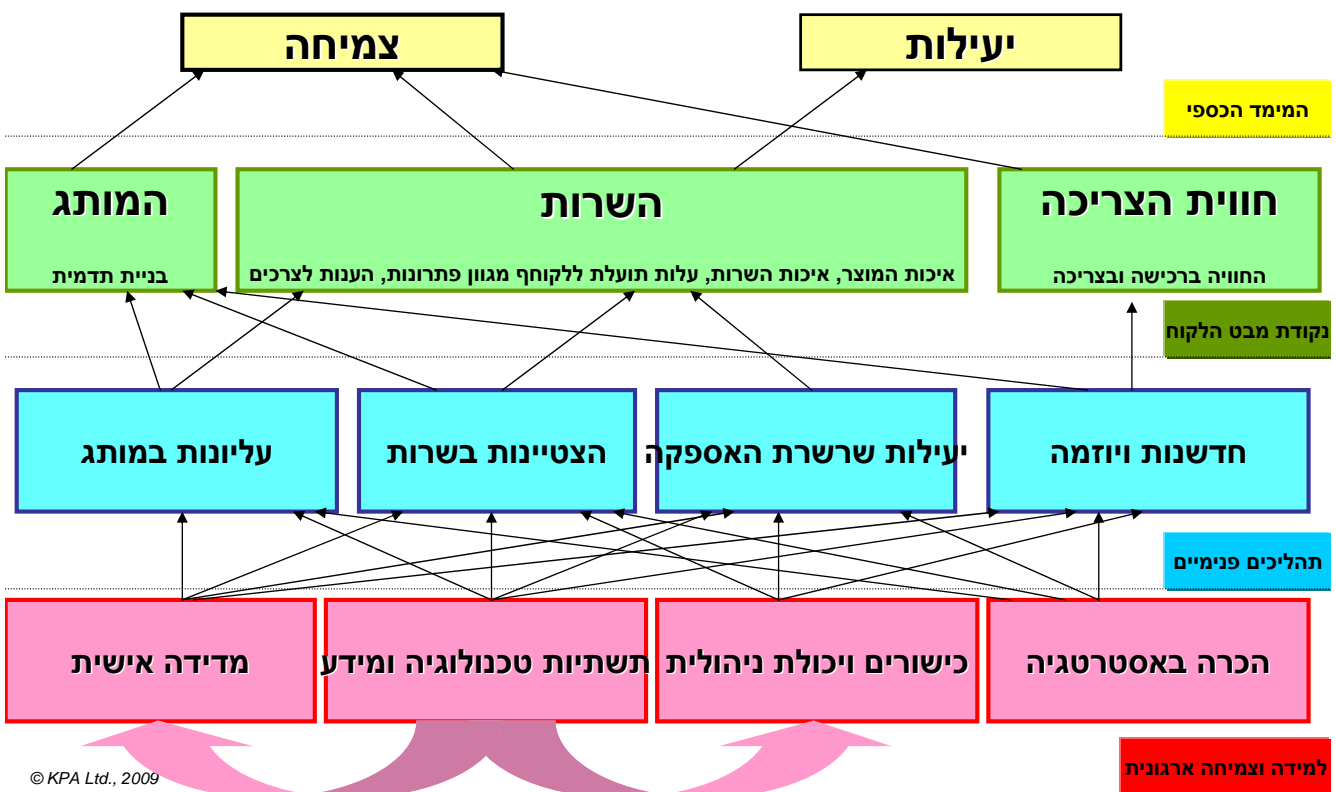


* Project value including investments at t = 0
Source: McKinsey analysis

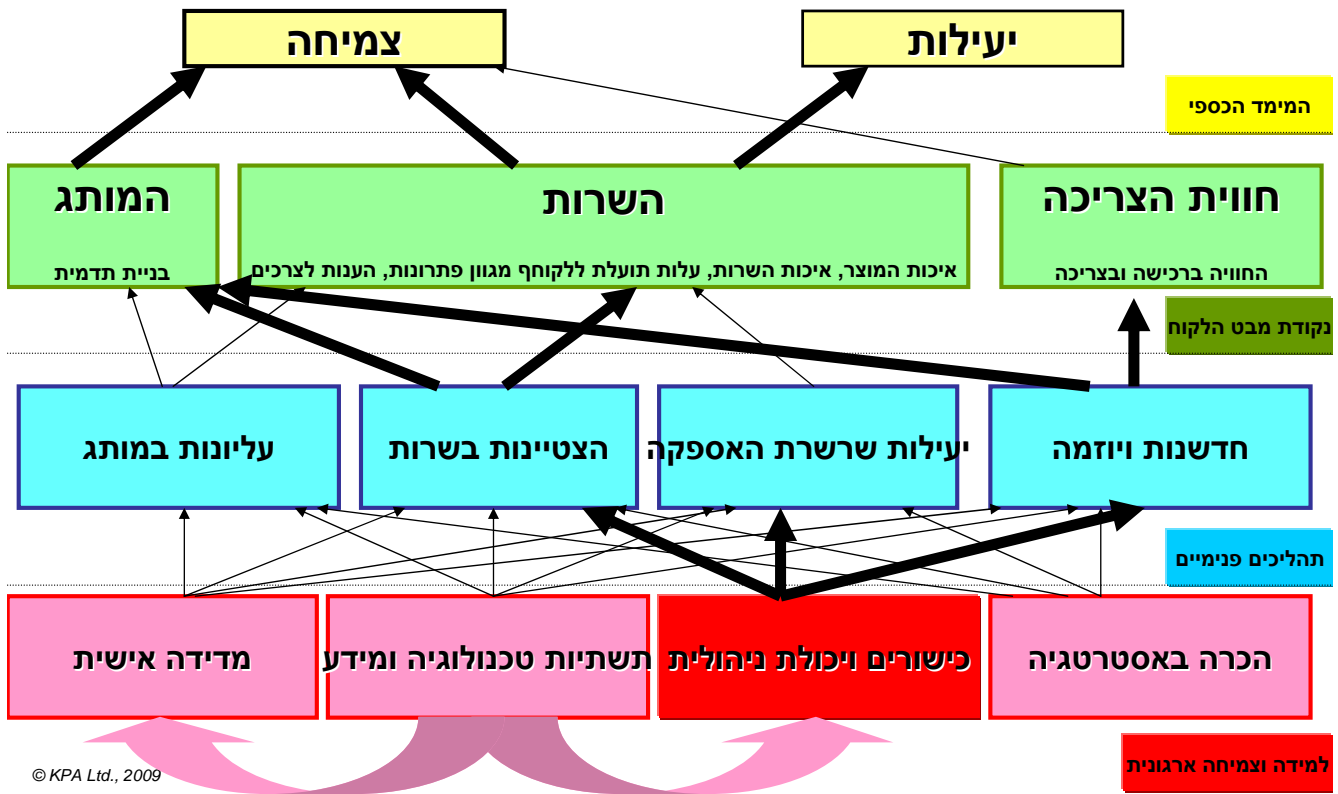
Value of uncertainty



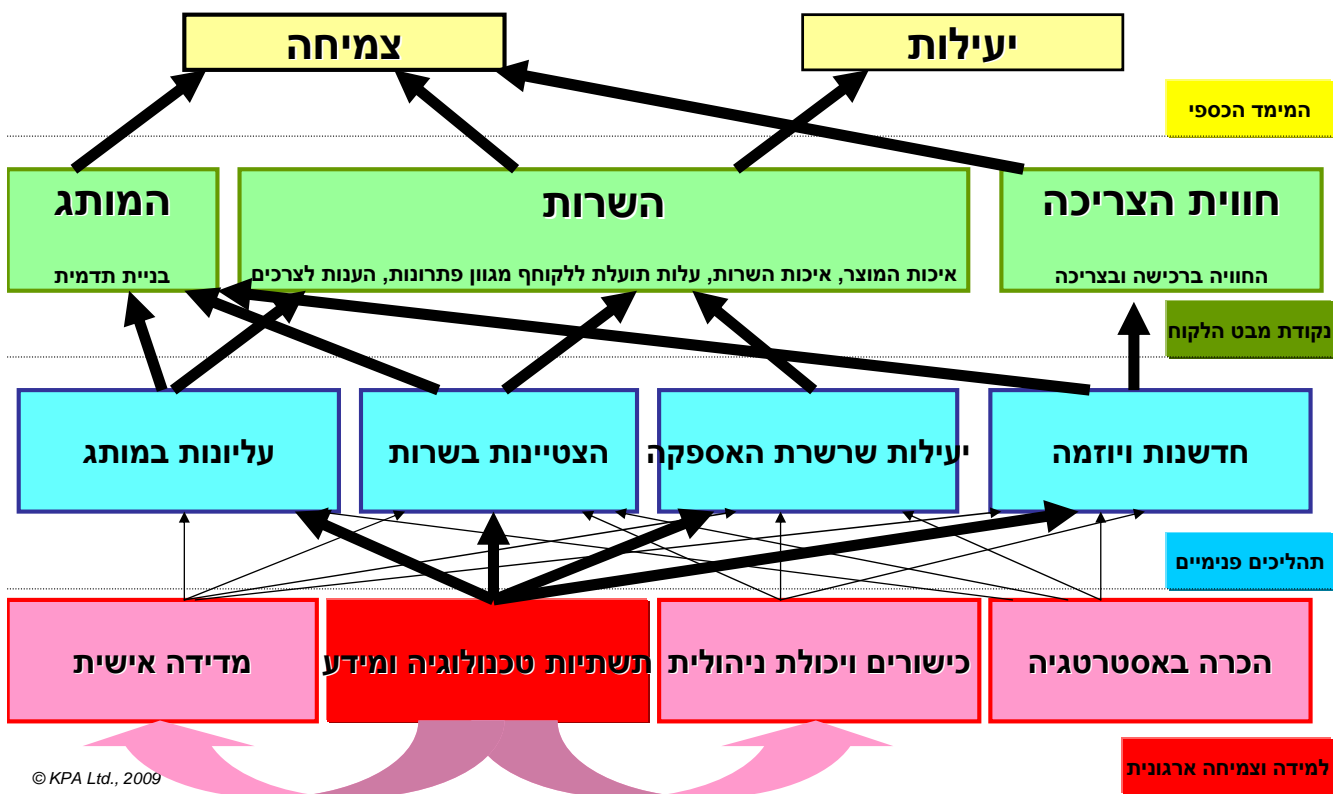
מפה אסטרטגית



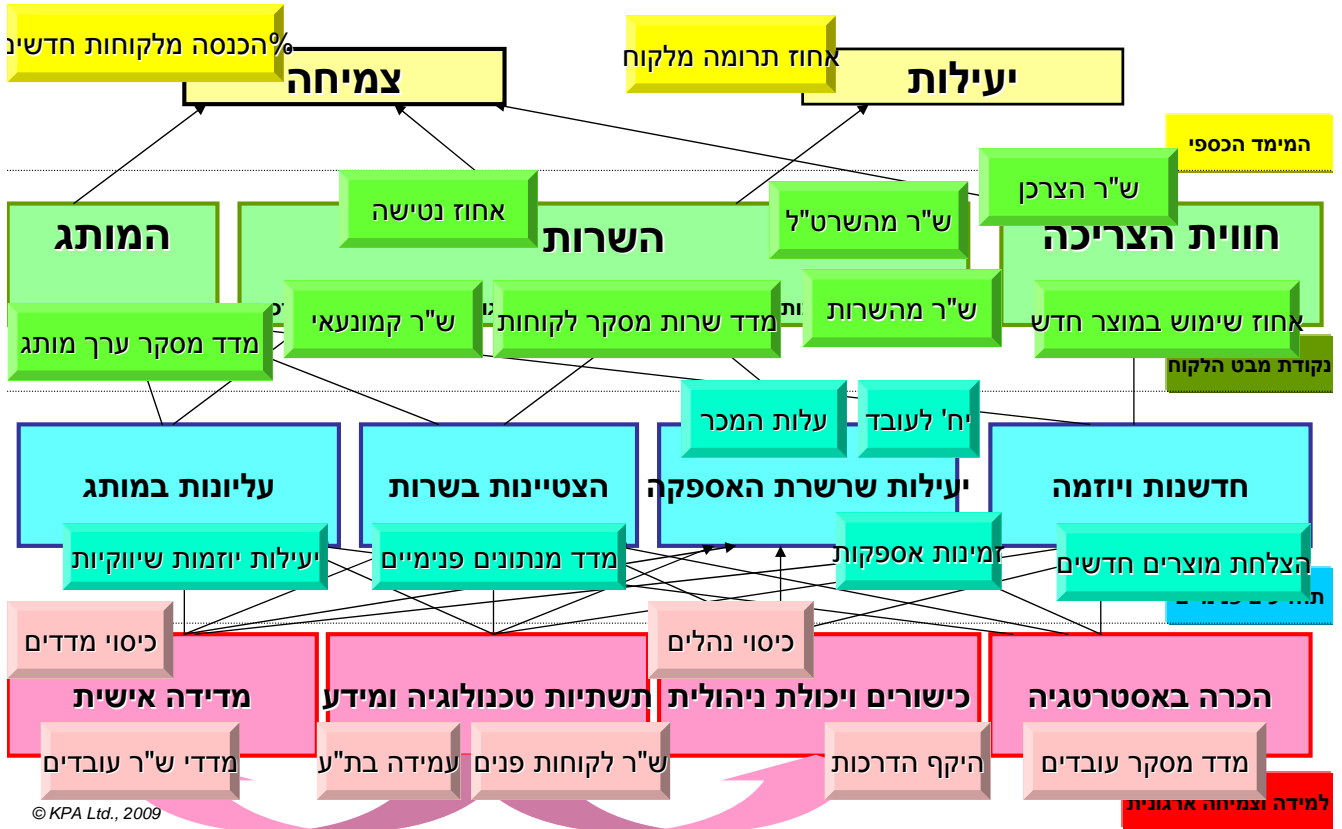
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מפה אסטרטגית



מדדים ארגוניים

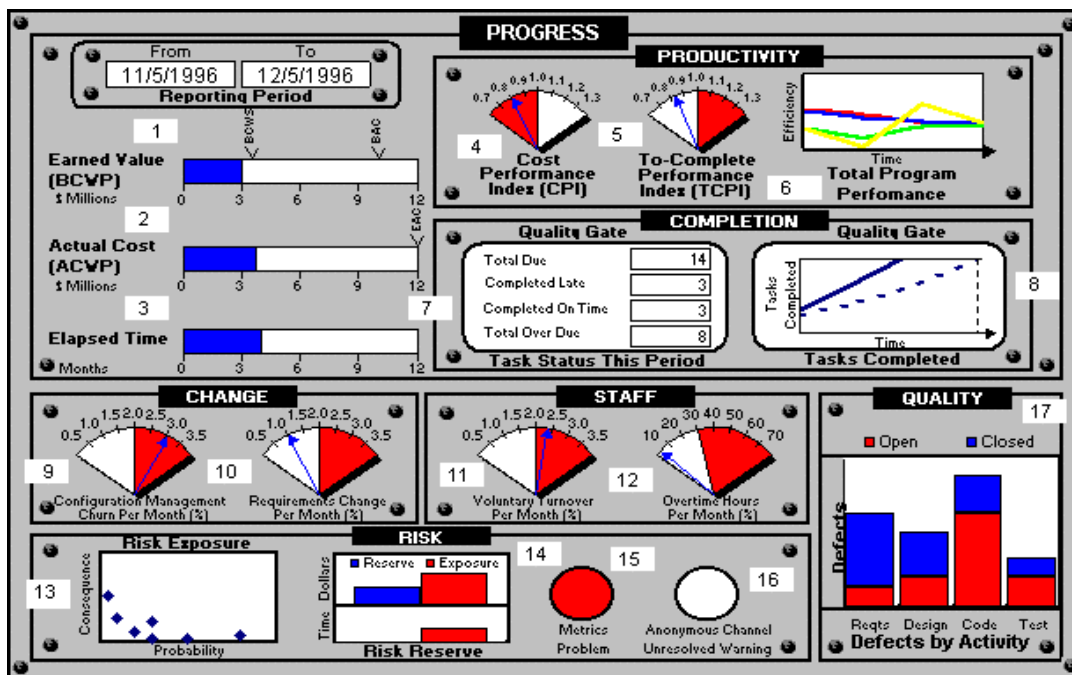


לוח מדדים ארגוניים



Software Development Management Dashboard of project x

2



References

2

1. **Strategic Management of Technology and Innovation**, Burgelman, Maidique, Wheelwright, IRWIN, 2nd edition, 1998.
2. **Corporate Strategy**, Segev, THOMPSON PUBLISHING, 1995.
3. **Competitive Advantage**, Porter, Free Press, 1985.
4. **Third Generation R&D**, Roussel, Saad, Erickson, Harvard Business School Press
5. "Choosing between Strategic Alternatives using Financial Indices", Kenett, Ziv(in Hebrew), Keshet Haeihut, 40-41, pp. 10-13, March 2002.
6. **Strategic Management**, Wheeler, Hunger, Addison-Wesley 6th edition, 1998
7. **The Balanced Scoreboard: Translating Strategy into Action**, Kaplan, R. and Norton, D., Harvard Business School Press, 1996.
8. "Having Trouble with your Strategy? Then Map It", Kaplan, R. and Norton, D., Harvard Business Review, September 2000.
9. "Investment Opportunities as Real Options: Getting Started on the Numbers", Luehrman, T., Harvard Business Review, July 1998.
10. "Strategy as a Portfolio of Real Options", Luehrman, T., Harvard Business Review, September 1998.