Luc Chaput

# PROJECT DESIGN
## STRATEGIC INFORMATION
### A PROCESS APPROACH

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# PROJECT DESIGN
## STRATEGIC INFORMATION

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Luc Chaput

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# TABLE OF CONTENTS


Acknowledgments . . . . . IX

Introduction – Luc Chaput and Pierre Martineau . . . . . 1
1. Change Theory and Project Management: The Gap . . . . . 2
2. Guidelines for Students . . . . . 3
3. A Few Definitions . . . . . 4
4. The PODC of Resources . . . . . 4
5. The Project Life Cycle . . . . . 6
6. The Process-Based Approach . . . . . 7

CHAPTER 1 – Luc Chaput
Design Processes . . . . . 15
1. Attributes of Processes . . . . . 16
2. Design Processes in the Innovative Organization . . . . . 22
3. Case Study: Is Your Organization's Design Innovative? . . . . . 25
Appendix – The Risk Management Process: An Example . . . . . 26

CHAPTER 2 – Luc Chaput
Holistic Appraisal for Design Processes . . . . . 31
1. Performance, Structure, Complexity . . . . . 31
2. The Systemic Approach . . . . . 37
3. Case Study: The Consequences for Business Policy . . . . . 39

CHAPTER 3 – Luc Chaput
Designing for Performance . . . . . 41
1. Prerequisite Definitions of Organizational Performance . . . . . 41
2. Attributes of Organizational Performance . . . . . 43
3. Definition of Performance . . . . . 43
4. Performance Models . . . . . 43
5. Designing for Organizational Performance . . . . . 43
6. Conclusion: "What You Do Not Know Cannot Hurt You" . . . . 53

CHAPTER 4 – Luc Chaput
Liaison Devices . . . . . 55
1. The Emergence of Results-Based Management . . . . . 55
2. The "So What" in Development Aid . . . . . 56
3. Why Implementation Is Country-Specific . . . . . 57
4. The Logic Model . . . . . 59
5. Performance Indicators . . . . . 61
6. Performance Measurement: An Example from CRA . . . . . 62
7. Another Tool from the RBM Toolbox: The Logical Analysis Framework (LogFrame) . . . . . 64

CHAPTER 5 – Luc Chaput and Lavagnon A. Ika
Feasability Studies . . . . . 71
1. RBM and Its Importance in the Project Design Phase . . . . . 72
2. The "Results-Based Project Design" Approach . . . . . 73
3. The Feasability Process . . . . . 76
4. People Fit . . . . . 77
5. Product-Market Strategies Fit . . . . . 78
6. Corporate Strategies Fit . . . . . 78
7. Constraints Fit . . . . . 79
8. The Design Framework . . . . . 79
9. Feasability Test . . . . . 79
10. Some Mathematical Results Applied to Financial Feasability. . . 80

CHAPTER 6 – Jan Saint-Macary
Aligning Projects with the Organization's Strategy . . . . . 85
1. The Enlightened Project Manager . . . . . 85
2. Understanding the Organization's Current Strategy . . . . . 86
3. Strategy Formation and Evolution . . . . . 88
4. Conclusion – Yet Another Final Word . . . . . 91

References . . . . . 95

Authors . . . . . 97

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# INTRODUCTION

Luc Chaput and Pierre Martineau

This section presents a set of considerations about the following:

- The relationship between change theory and project management
- Guidelines for students
- Project-related definitions
- The process-based approach

Chapter 1 describes the links between design parameters, processes and contingency factors. The performance is given by a system of fits that define synergy.

Chapter 2 describes the links between the complexities of the environment and internal processes. Performance focuses on a strategy comprised of particular targets for change involving structure and processes.

Building upon that, Chapter 3 takes a closer look at the organizational design that leads to the strategic management of subsystems.

Chapter 4 explores liaison devices while expanding on results-based management theory and the Logic Model.

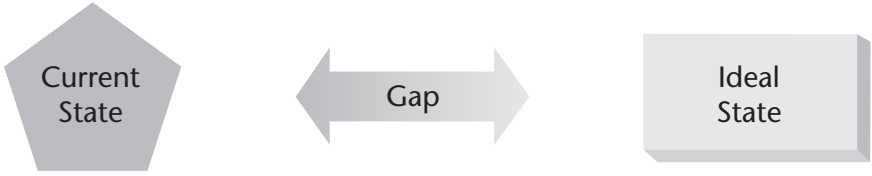
Chapter 5 discusses the feasability studies, a necessary part of project design.

Finally, Chapter 6 provides readers seeking to understand the broader context of project design with an overview of the process by which an organization ensures its continued alignment with its external environment.

## 1. Change Theory and Project Management: The Gap

This book is geared on project design using a process-based approach. Fundamentally, projects are needed and designed either to improve an organization's *internal fitness—i.e.*, the efficiency of its operations—or its *external fit* with the external environment—*i.e.*, its effectiveness. In other words, projects constantly actualize the organization's strategy, as project management aims to bridge the gap between the ***current state*** and an ***ideal state***. So, the following questions are to be pondered and answered by students of project design. They relate to the gap, the stakeholders, the strategies, the risks, and the feasability.

### Bridging the Gap




- How important is this gap? How reliable is this measurement?
- Can we live with this gap? If so, how well and for how long?
- What do our clients, stockholders, creditors, community, etc. want us to do or be?
- How should/could we get there? How long, how much will it take?
- Do we have the skills, the people, the tools, the resources, etc.?
- What are the *risks* of doing nothing, *i.e.*, living with this gap? How risky do they become over time? What are the *risks* of doing this project? What are the *risks* related to skills, people, tools, resources, etc.? What is our tolerance to *risk*?
- Is the project legally, strategically, technically, economically, financially feasible?
- Is the project environmentally, socially, culturally acceptable?

# 2. Guidelines for Students

Students will have to prepare a group report. The guidelines for this work are listed below.

## 2.1. A Word on the Draft Project Proposal

To minimize your project risks a draft proposal will have to be submitted to the instructor.

You will have to cover the following key elements:

### *Project Environment*

Describe the following:

- The client
- The organization
- The problem to be solved or opportunity to be seized
- Constraints that limit the scope
- Restrictions affecting implementation within the scope

### *Project Objective*

- What does the team need/expect to achieve?
- Is it measurable and realistic?

### *Project Description*

- Expand on the project objective
- Prepare a high-level scope definition
- Address the what, when, where, who
- Identify deliverables

### *Responsibility/Accountability Matrix*

- What will each of the team members be responsible/accountable for vis-à-vis the deliverables?

## 3. A Few Definitions

The Kezsbom, Schilling, and Edwards model is especially interesting because it gives a historical perspective on the evolution of the **p**lanning, **o**rganizing, **d**irecting, and **c**ontrolling (PODC) process.

### 3.1. What Is a Project?

Interesting quotes…

- *A project is a problem for which a solution is being programmed.* J.M. Juran

but

- *Results are obtained by exploiting opportunities, not by solving problems.* Peter F. Drucker

- A project is a one-time job that has definite start and end points with clearly defined objectives and scope.

### 3.2. What Is Project Management?

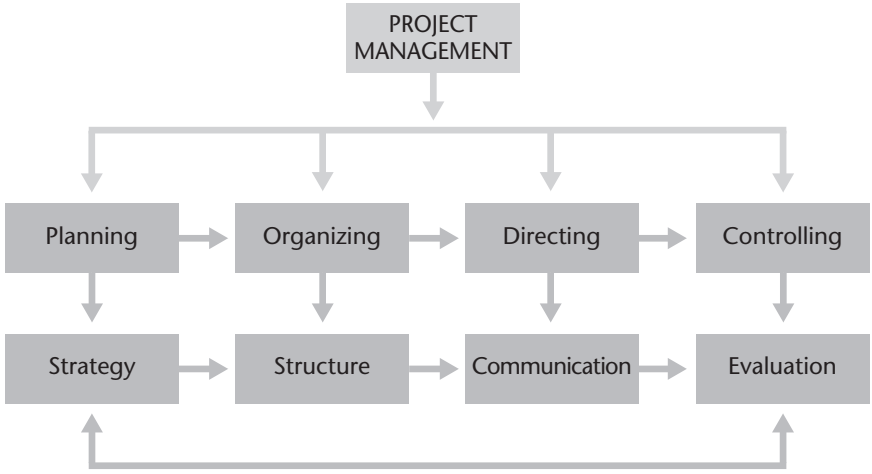
- Project management is the application of knowledge, skills, tools, and techniques to project activities to meet project requirements.

## 4. The PODC of Resources

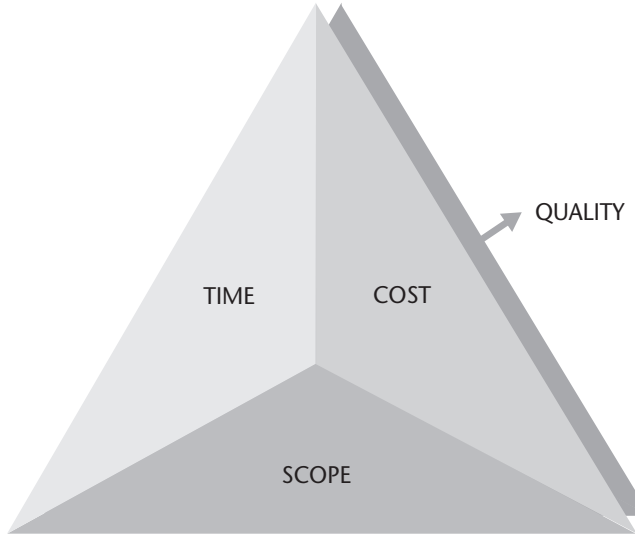
The PODC process of planning, organizing, directing, and controlling resources for a relatively short-term objective aims to accomplish a set of specific goals and objectives through a fluid, systems approach consisting of assigning functional personnel to a specific project.

The PODC process was established in the early 1900 by Fayol, the famous French industrialist. The following diagram explains every component in a contemporary fashion.

## The PODC of Resources under Constraints within a Dynamic System



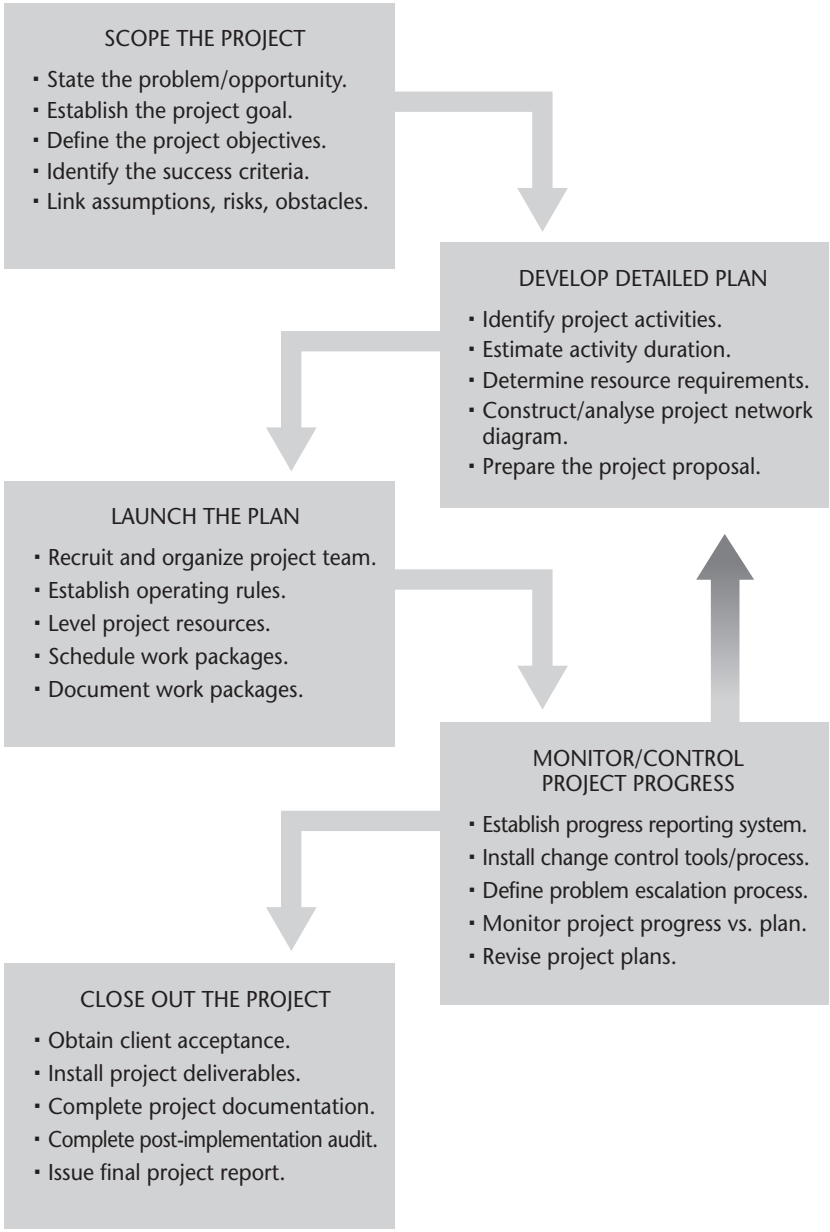

## Quality and Constraints




The PODC of resources can also be seen as a coffee table with three legs: time, cost, and scope. If there is an order for change in any or all of these three constraints, then the quality of the table will also change.

## 5. The Project Life Cycle

### One Representation




Source: Wysocki. *Effective Project Management*, 3rd ed. New York: Wiley, 2003.

This representation of project management emphasizes important aspects not present in the PODC process described in Section 4 above. Note for example the inclusion of risk in scoping and of change control in monitoring.

### 5.1. The Importance of the First Two Phases of the Cycle

- Investing time in the front end reduces the total duration of project.
- The cost of errors increases drastically as the project progresses.
- "Winners spent more than twice as many resources on pre-development activities as did losers."—*Bonak 1994*

## 6. The Process-Based Approach

This section describes the process-based approach that aims to integrate the complexities of the environment with the organization's inner subsystems, as well as the Management Information Systems (MIS) and the Results-Based Management (RBM) framework.

### 6.1. Project versus Program Management

Before introducing Chapter 1, we need to explore in depth the process-based approach, as it is a main value driving the contents of this book.

*Project management* has been defined above. It is organic in nature, functioning in an *ad hoc* manner. The associated processes are transversal in nature.

*Program management* is a repetitive, permanent process. The end product is a bureaucratic, mechanistic type of process.

Below is a comparison between the two approaches.

| **Project Management** | **Program Management** |
|---|---|
| Narrow focus (deliverables) | Wide focus (multiple concurrent objectives) |
| Unique | Repetitive |
| Simple reporting | Complex reporting |
| Temporary | Permanent |
| Multidisciplinary teams | Homogeneous staff |

## 6.2. The Project Management Office

This type of office is mostly exclusive to well-financed enterprises that can afford this "largesse" of information systems. The basic process involved is the environment scanning and the decoding of data in order to feed the strategic process. The primary process is often described by the letters STEP, denoting forces of a **s**ocial, **t**echnological, **e**conomic, or **p**olitical nature which can impact on the organization's subsystems.

Another acronym for this decoding process is PESTEL (**p**olitical, **e**conomical, **s**ocial, **t**echnological, **e**nvironmental, and **l**egal forces).

### *An Example of STEP or PESTEL*

The interactive TV banking system is an innovative technique and an advancement of communication technology that allows viewers to interact with television content as they view it. Just as Internet banking has made life easier for the computer-literate population, TV banking would enable all satellite- or cable-television service subscribers anywhere in rural areas to have banking services at their fingertips. Interactive browser applications with security and privacy features can make it easy for people to manage their accounts, transfer money, pay bills, and apply for loans through their television remote control without the hassle of running to a faraway branch.

### *Political Factors*

China's accession to the World Trade Organization (WTO) was the most crucial indicator of its integration into the developed world. The WTO accession has enabled the banking industry to engage in the rapidly growing global banking service markets, while China's effort in meeting WTO requirements has improved the overall business environment.

### *Legal Factors*

The Chinese banking industry is regulated by the China Banking Regulatory Commission, whose consent must be obtained by foreign banks to enter the Chinese banking market. Since China's accession to the WTO, foreign banks are allowed to enter China's financial service market.

### *Economical Factors*

The price indices of most sectors have increased significantly over price levels in the 1990s. However, for transportation, communication, and household goods and services, the situation is reversed. High technology has lowered the costs and increased the availability of banking services and communications. In addition, WTO membership is expected to reduce the price of imported goods.

### *Social and Cultural Factors*

Chinese consumers have strong interests in new products, and those who can afford it rapidly adopt new technologies. Over half of the population is male, and men aged between 25 and 59 dominate the age range.

### *Technological Factors*

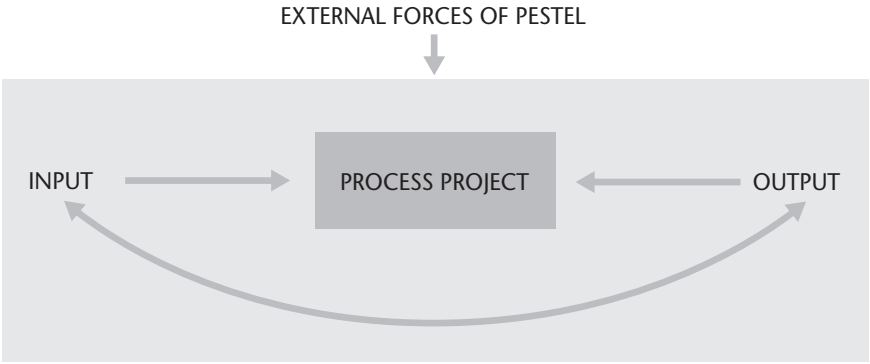
Over the past years, since computers and the Internet are not widely used in rural China, people who live in those areas have had to go to a bank personally to get banking services. However, banks are normally located in big towns, and people need to travel to get there. Rural people represent a large number of customers and are seen as an emerging market for the next 20 years. Banks see interactive TV banking as an opportunity to better serve customers in rural areas and provide them with the convenience, freedom, and flexibility of using the household appliances that are available to them. Meanwhile, the developments in emerging commerce technologies which have been harnessed in Europe are good examples of how banks can efficiently deliver top-quality customer service for both the customer's and the bank's benefit.

## 6.3. System, Project, Process

Globally, the system may be described by the input-process-output sequence. The process component has already been described within the organization's subsystems and is now known to be correlated with the three building blocks of management (administration, organization, coordination).

Outside the box in the diagram below are the forces at work that impact on the inner (political, cultural, etc.) subsystems. It is imperative that the managers fully anticipate these impacts so that they can change the strategy, which in turn can be actualized with various projects.

## External Forces of PESTEL

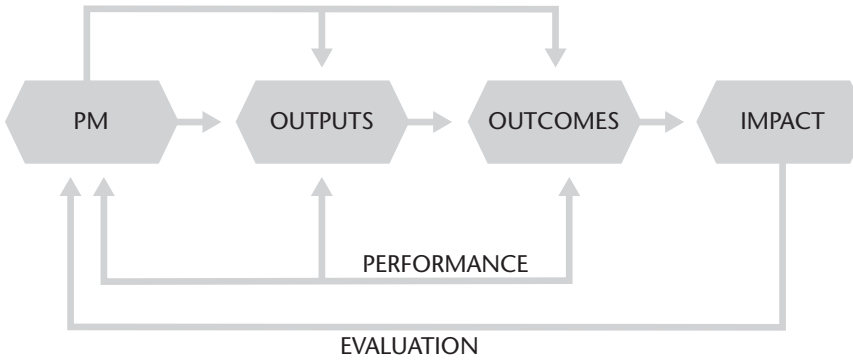



## 6.4. The Project Management Information Systems: Why Control?

- The planning, organizing, directing, and controlling process is one of the basic professional responsibilities for which the manager is accountable.
- Your MIS must be designed in from the start.
  - Begin by identifying what you *must* know and *report on*, when, and to whom, to ensure proper project delivery and to meet your professional/legal obligations.
  - The absence, poor design, or poor use of the MIS is a major contributor to the risk of failure.
- Projects evolve quickly.
  - The manager must keep a close eye on the plan and targets/milestones. Variances must be immediately identified and analysed, adjustments made, stakeholders informed/involved, etc.
- Management is an iterative process, as is decision making in a dynamic environment in a context of uncertainty.

## 6.5. RBM: An Iterative Process

### Use Performance Information for Management Decision Making



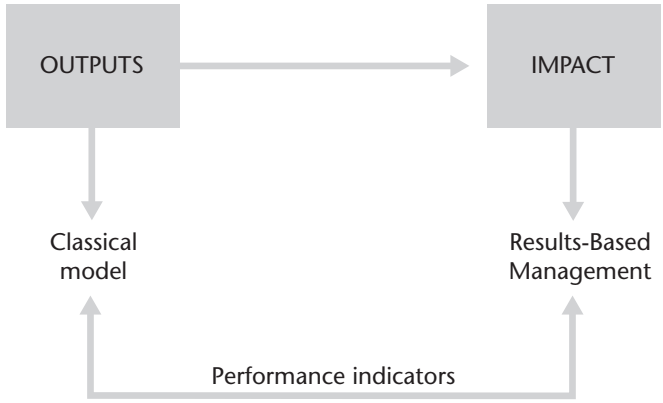

### *Some Tools "Assimilated" by RBM*

- Plans (strategic, operations)
- Performance measurement/management systems (management dashboard, balanced scorecard)
- Control systems (audit, evaluation)
- HR "engagement", accountability (performance agreements, published service standards)
- Program/project design (Logic Model and LogFrame, Results-Based Management Accountability Framework (RMAF), Risk-Based Audit Framework (RBAF))

### *RBM in a Nutshell*

RBM is a management model centred on the citizen/client/taxpayer; it proposes a new "balance" between legal/regulatory and procedural constraints and focuses on achieving results; it emphasizes accountability vis-à-vis the achievement of intended results rather than the execution of activities, explicitly highlighting the relationship between allocated resources and results achieved. It focuses on a strategic alignment of efforts towards the intended results. In summary, RBM is an attempt at reconciling the effectiveness (though not at all costs), efficiency, quality, and relevance of services with transparency and accountability. Expected benefits are better answers to client/taxpayer/citizen expectations… or should we say "needs"? What is the difference?

## Moving from a Focus on Outputs to a Focus on Outcomes




### *The Characteristics of Good Performance Indicators and of a Good System/Portfolio of Indicators*

1. Useful
   Is the information important enough, useful in decision making and learning?
2. Accurate/Appropriate
   Is it a valid/accurate measure of the right result?
3. Meaningful
   Are aggregate measures (*e.g.*, averages) used with care?
4. Normalized/Standardized
   Is this measure consistent over time and from one organization to another, so it can be compared or benchmarked?
5. Sensitive/Discriminating
   Will this measure react sufficiently to reflect changes in the results?
6. Simple
   Is it easy to collect, analyse, understand, communicate?
7. Affordable
   Does the information already exist? Is it cost-effective to collect it without disrupting work or trust?

8. Balanced
   Does the measure take into account multiple qualitative and quantitative perspectives?
9. Comprehensive
   Is your set of indicators enough to support decision making?
10. Leading
    Do your indicators allow you to forecast trends or only to report on the past?

To maintain focus, avoid the proliferation of indicators.

## 6.6. GOSPA

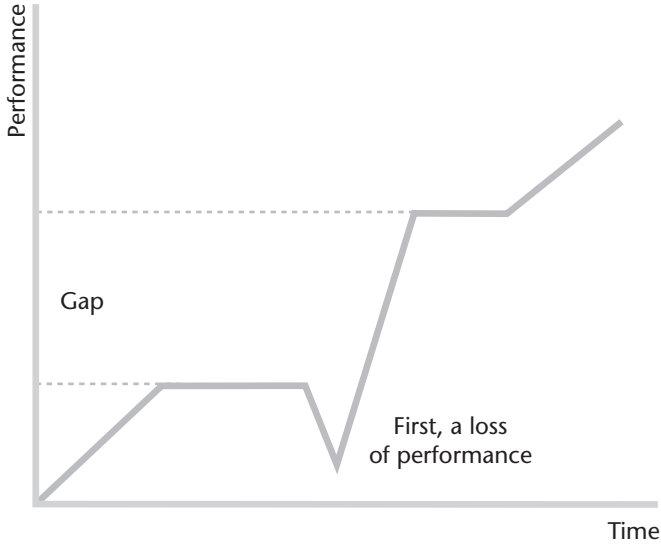
GOSPA refers to the hierarchy of:

- **G**oals
- **O**bjectives
- **S**trategies
- **P**lans
- **A**ctivities

## 6.7. Projects and Change

- Projects generate change—by definition!
  - Expect conflicts (generally)—it is crucial to conduct a thorough strategic analysis of the situation and the stakeholders.
  - Manage all groups of stakeholders to minimize the risks and negative impacts of transition.
- You will need to build your case for change.
  - What are the benefits/opportunities?
  - What are the risks, threats, consequences of not changing?
  - What significant constraints could prevent a successful implementation of the change?
  - What are our strengths? What is available to us to facilitate a successful implementation?
  - What are our strategies for moving forward?

## Change Management Necessary to Minimize Negative Impact Due to Transition




## 6.8. The Project Manager's Summary Checklist

1. BEFORE accepting the project, do your homework!
2. Governance srtucture
3. Client's explicit and implicit needs
4. Timeframes
5. HR requirements (expertise)
6. Risks and risk tolerance
7. Schedule
8. Budget
9. Performance management system
10. Involvement and communications

Project Charter

Project Plan


# DESIGN PROCESSES

Luc Chaput

Processes are an integral part of organizational design. They usually convey an idea of the architecture of the enterprise, like an electrical network of some sort supporting the flow of information.

The need for certainty leads the management to design strategies that reduce the need or increase the capacity to process information.

In turn, the follow-up project will consist in designing processes supporting the creation of slack resources, self-contained tasks, lateral relations, or the investment in vertical information systems.

Job design, business process reengineering, and balanced scorecard processes are all process-oriented change strategies that were conceived years ago but are still very useful when studying organizational performance.

In the context of project management, the end product in itself is not an adhocracy; however, the processes leading up to delivering the innovation are best governed when the design parameters and contingency factors at work in an innovative setting are considered.

# 1. Attributes of Processes

These factors and parameters are the result of fundamental processes. The concept of process is comprised of two strategic dimensions:

- Viability, the idea of flexibility and adaptability
- Vitality, associated with long-term survival

These two dimensions are examples of different aspects of organizational performance, as will be seen in later chapters.

Table 1.1 is particularly useful because it enables one to benchmark the three components of management (administration, organization, coordination) with nine identified dimensions:

- The ***definition*** and ***base*** dimensions help in clarifying the mandate.
- The ***scope*** dimension specifies the area of influence.
- The ***cause*** dimension reveals the details of the start-up.
- The ***condition*** dimension reveals the necessary management elements to the project cycles.
- The ***function*** dimension reveals the roles assigned to each of the three components (administration, organization, and coordination).
- The ***goal***, ***consequence***, and ***relationship*** dimensions give a better understanding of the results-based management processes, as will be explained in Chapter 4.

## Risk Management Planning Analysis (Administration)

(Refer to Appendix, p. 26–29)

**Definition:** Risk management planning is an interactive social system, mainly because meetings are the technique used in processing the inputs into outputs.

**Base:** The fundamental principles at work here are the manager's roles, which lie mostly in the planning and strategy domains.

**Condition:** The elements necessary for the unfolding of the risk management planning process are (1) the requirement regarding the quality of decision making and (2) the uncertainty of the environment.

**Goal:** The goal is to attain a more rigorous planning process by reducing risks.

TABLE 1.1

## Processes and the Three Components of Management: Administration, Organization, and Coordination

| | Administration | Organization | Coordination |
|---|---|---|---|
| **Definition:** Delimitation or description | Interactive social system | Social structure | Standardization |
| **Base:** Fundamental principle on which the component is based | Elements connected to at least one other dimension | An adequate structure of authority | A particular form of authority defining the role of the person representing the authority and overseeing the administration of human resources |
| **Condition:** Elements indispensable to the unfolding of the phenomenon | Quality of the decision process | Proficiency regarding the knowledge and understanding of the rules | Centralization of decision making |
| **Goal:** The phenomenon's ultimate goal | Rigorous planning towards a specific objective | Maintaining the motivation-contribution equilibrium | Supervision |
| **Function:** The assigned role | Effectiveness and efficiency | Communication system | The communication process and a planning coupled with optimal consistency of the system's parts |
| **Scope:** The scope of influence | Hierarchical and functional structure | The phenomenon of responsibility | Interdependence of a problematic situation with the variables involved |
| **Cause:** The activating element | Differentiation of members regarding their roles and responsibilities | Division of labour | Planning |
| **Consequence:** Final outcome | The social phenomenon as a mean to pursue goals | Technical and social skills | The rationalization and institutionalization of interactions |
| **Relationship:** Nature of the relationship between different phenomena | Adaptability | The dynamic environment | Maintaining specialized public relations |

**Function:** The assigned role of this process is to optimize the effectiveness/efficiency couple's value.

**Scope:** The scope of influence includes all the existing hierarchy and functional structures, as well as all the stakeholders.

**Cause:** The process is activated by the top management's planning responsibilities.

**Consequence:** The final outcome is the risk management plan.

**Relationship:** The organization's required adaptability defines the overall relationships with all other elements.

Note: Within a performance framework, risk management planning would contain an integrative human resource function and a balance between efficiency and effectiveness.

## Risk Response Management Planning Analysis (Administration)

**Definition:** Risk response management planning is a social system, meaning that it involves the perceptions of all top management in establishing the risk levels.

**Base:** The managers' roles clearly state the principle that planning and strategy belong to top management.

**Condition:** The quality of decision making remains an indispensable element that includes decoding the environment.

**Goal:** The goal is to improve the quality of planning, including risk response.

**Function:** The assigned role of this process is to optimize the effectiveness/efficiency couple's value.

**Scope:** The scope of influence starts with the management and will reach everyone.

**Cause:** The element that activates this process is the managers' roles, coupled with uncertainty.

**Consequence:** The consequence is a complete mitigation plan for all the risks.

**Relationship:** Again, the organization's required adaptability defines the overall relationships.

Note: Within a performance framework, risk response management planning would contain an integrative human resource function and a balance between efficiency and effectiveness.

## Risk Management Data Analysis (Organization)

**Definition:** Structuring and organizing the data represents a social structure in the sense that the results end up in information systems for management purposes.

**Base:** The prioritization of risks and the preparation of contingencies are a representation of authority.

**Condition:** Risk management data requires a lot of proficiency regarding the organization's rules, because of the information's complexity.

**Goal:** Those who assume the risks are the top managers or owners; this contribution and associated rewards keep motivation high.

**Function:** Since the structural element is strong in the organization block, the function is a communication system.

**Scope:** The scope of influence starts and ends with the manager's authority.

**Cause:** The division of labour (staff or line) causes this type of authority to emerge.

**Consequence:** The consequence is an input for risk response planning and skills improvement for all concerned.

**Relationship:** The complexities of the dynamic environment impact on data structuring.

Note: Within a performance framework, risk management data should contain the fine-tuning of human resources' skills.

## Risk Monitoring and Control Analysis (Coordination)

**Definition:** The standardization of information for the purpose of executive reporting.

**Base:** The principle at work here is a particular form of authority known as coordination. It is a delicate balance among perceptions, facts, and opinions.

**Condition:** An indispensable element is the centralization of authority required for this standardization.

**Goal:** A sensitive supervision of the management of data, facts, and information systems.

**Function:** Serves as a communication process comprised of optimal consistency of information.

**Scope:** The organization subsystems' degree of interdependence.

**Cause:** The primal cause is the planning component.

**Consequence:** A rationalization of all the interactions between various types of information.

**Relationship:** Maintaining easy access to all information centres requires very specialized human relations skills, akin to "public relations."

Note: Within a performance framework, risk monitoring and control should include the standardization of means.

Performance models applied to knowledge management, innovation, higher education, and R&D management are often described by four components: objectives, processes, outputs, and resource qualification and training.

These performance models also yield high-performance processes when correlated with the three building blocks, *i.e.*, administration, organization, coordination (Figures 1.1–1.3).

FIGURE 1.1

The Process of Acquiring, Maintaining, and Using Human Resources

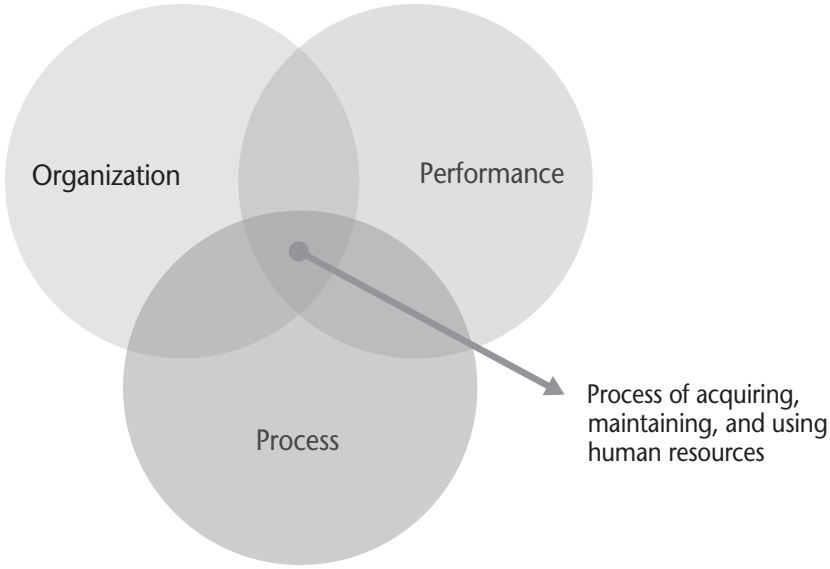


FIGURE 1.2
The Personnel Function

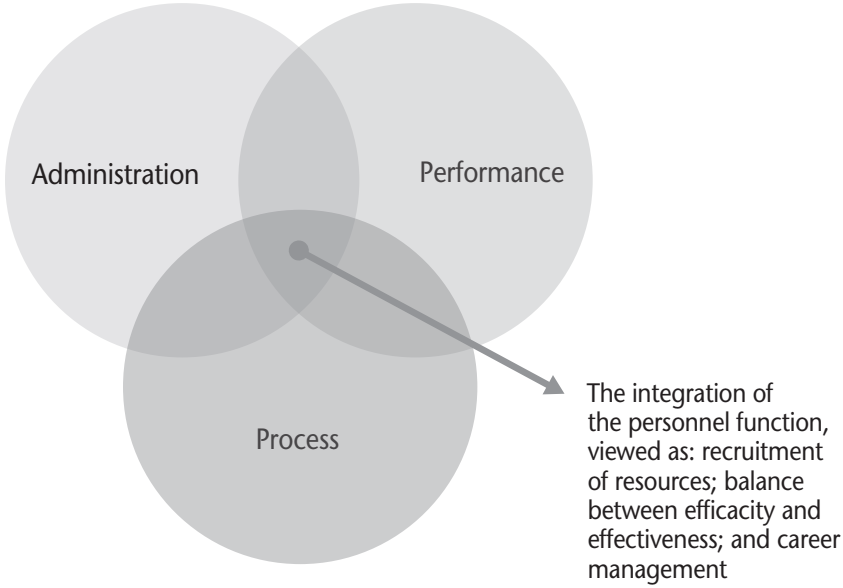
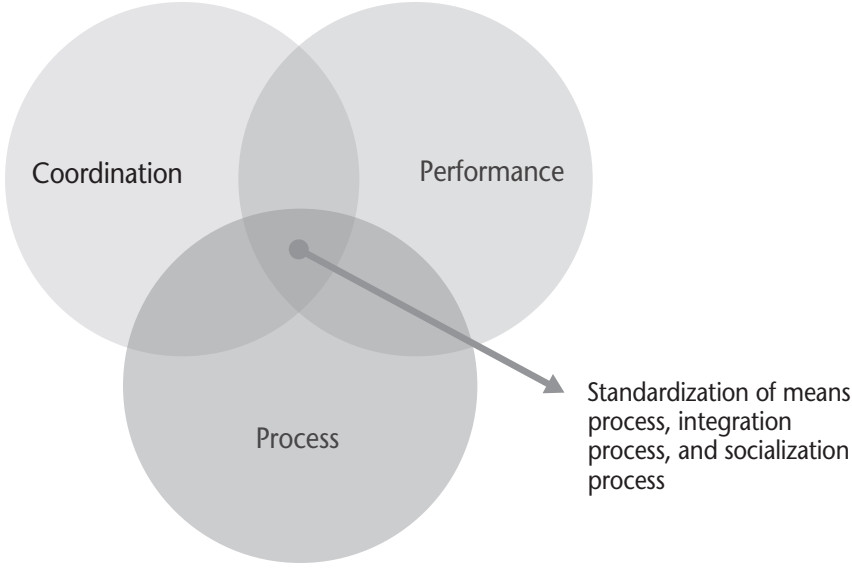



FIGURE 1.3
Standardization and Integration Process



A performance model, as applied to knowledge management, innovation, higher education, and R&D management, contains the following processes: the acquisition process, the conservation and usefulness of the resources, the integration of the personnel function as regards the recruiting of the resources, the equilibrium between efficiency and effectiveness, career management, the standardization of means process, the integration process, and the socialization process.

## 2. Design Processes in the Innovative Organization

### 2.1. Contingency Theory

The choice of contingency theory to explain processes is better understood by establishing certain conceptual requisites such as an open system on its environment and rational functionalism (process-oriented decisions aimed at efficiency and performance).

Contingency theory is a close cousin of systems theory as it considers that an action's efficiency depends on its position relative to other elements in the system. We can draw contingent relationships between information processing and levels of certainty.

At the beginning, contingency theory was based on empirical results about the interactions between structure, environment, technologies, and organizational strategies. The researchers who followed helped describe certain interactions using results from empirical studies made in a variety of fields. Nowadays, barriers to change are contingencies to the strategic action. There are relationships between certain aspects of a company's environment and the management practices found in such an organization.

Results show that management practices of a mechanistic nature are associated with enterprises evolving in stable environments, while flexible and informal management practices are associated with unstable environments. Also, the organizational structure depends on the strategies adopted: environmental change (in technologies, market, resources) forces changes in strategy, thus structural change. There are established relationships between the production technology (unit, mass, or continuous) and the organizational structure: unit or continuous production is linked to the organic structure, while mass production is linked to a formal (mechanistic) structure.

The efficiency of the leadership style depends on contingencies such as the characteristics of the leader, the characteristics of the organization's members and the demands of the environment.

Contingency theory shows that a fit between the organizational context and the organizational structure is correlated with a superior performance. This theory takes into account so-called contingent propositions and hypotheses that are based on the associations of two or more independent variables whose mutual adjustments affect the values of dependent variables. Asymmetric relationships are permissible; the structure's influence on the performance is non-monotonous (not necessarily increasing or decreasing) over the whole range of uncertainty values.

This adjustment concept is the key when considering the development of contingency theory. It was first seen as the underlying premise of the congruence between the organization's context and structure; then this notion was expanded to include pairs of "contextual-structural" variables to which the notion of performance is associated.

Nowadays, the above thinking is outdated and the adjustment concept takes into account the notion of performing sets, including the configurations of contextual and structural variables, that is, the equifinality within the system. The unicity of the model is questioned in that there are no theorems on the existence or unicity of solutions.

## 2.2. Design Parameters and Contingency Factors for the Innovative Organization

The design parameters and contingency factors are levers by which the design process can be described and become operational. Jointly, they act as an extensive coordination mechanism. Contingency factors are often used in theory building in the form "if A; then B" (Table 1.2).

TABLE 1.2

## The Innovative Organization

| **Design Parameters** | **Key Coordinating Mechanism: Mutual Adjustment** |
|---|---|
| Job specialization: | |
| – horizontal | High |
| – vertical | Low |
| Training | High |
| Indoctrination | Variable |
| Formalization of behaviour | Low |
| Bureaucratic/organic | Organic |
| Grouping | Functional and by market |
| Unit size | Small (throughout) |
| Planning and control systems | Limited action plan (especially in administrative adhocracy) |
| Liaison devices | Many throughout |
| Decentralization | Selective |
| **Contingency Factors** | |
| Age (typically) | Young (operational adhocracy) |
| Size (typically) | Variable |
| Technical system | |
| – Regulation | Low |
| – Complexity | Low (operational adhocracy)[1] |
| – Automation | High (administrative adhocracy)[2] |
| | No (operational adhocracy)[1] |
| | Often (administrative adhocracy)[2] |
| Environment | |
| – Complexity | High |
| – Dynamism | High |
| Power | |
| – Focus | Expert |
| – Fashionable | Especially |

1. Operational adhocracy: consulting firms.
2. Administrative adhocracy: mostly in-house project work.

Source: Henry Mintzberg (1983). *Structure in Fivess: Designing Effective Organizations*. Lebanon, IN: Prentice Hall.

## 3. Case Study: Is Your Organization's Design Innovative?

Effective structuring requires consistency among design parameters and contingency factors.

In fact, we should search for natural clusters or configurations of design parameters together with contingency factors. These two sets merge into interactive systems so that the design parameters cause the contingency factors just as much as the contingency factors influence the choice of design parameters.

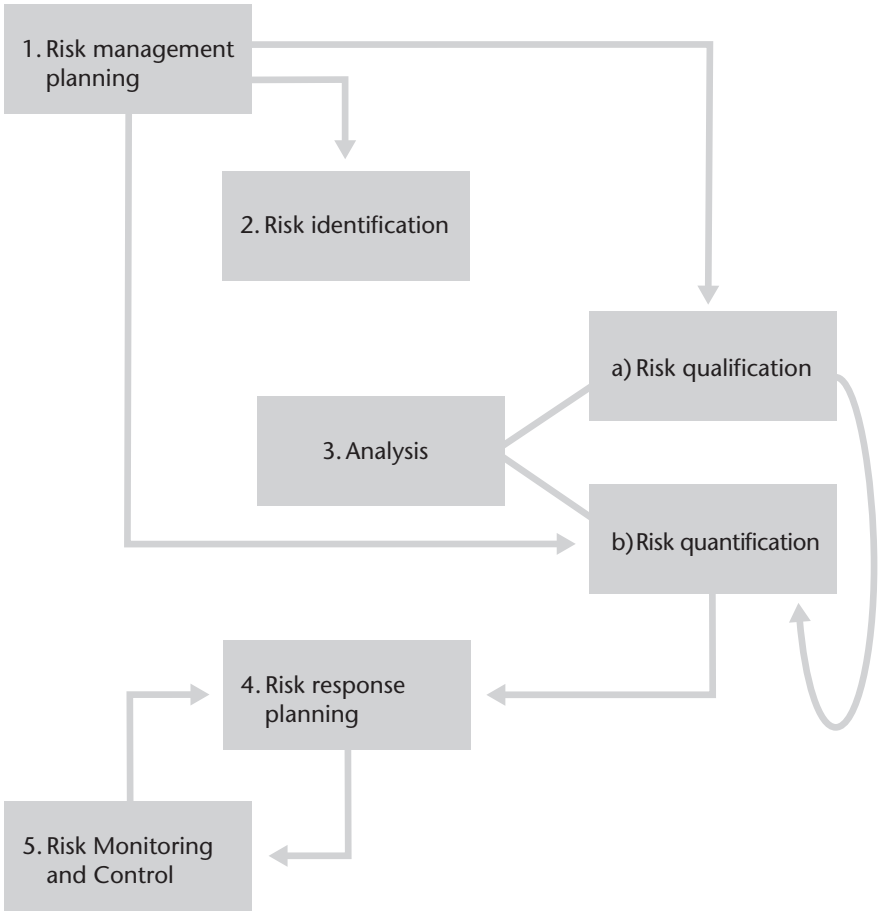
Table 1.2 is best used in the light of the contingency theory principles outlined above. Especially important in this case are the concept of fit and the notion of association of independent variables whose mutual adjustments affect the values of dependent variables.

Describe your process design using two matrices: one for design parameters, the other for contingency factors. There must be a fit among and between design parameters and contingency factors.

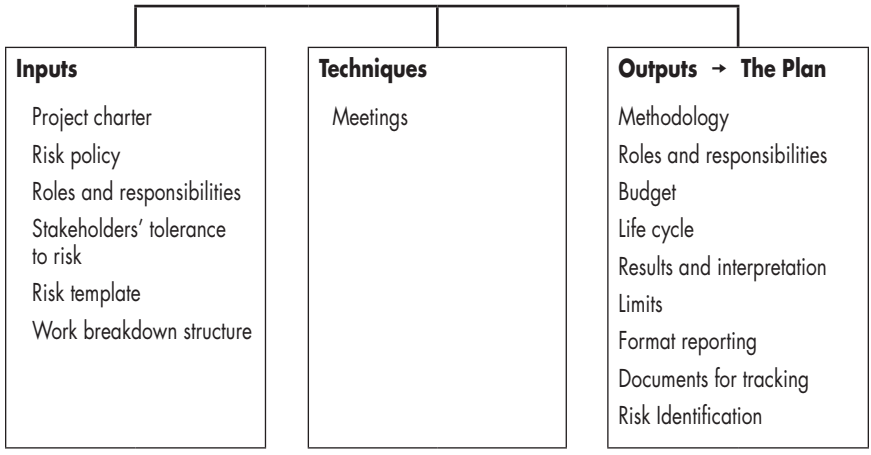
Discuss this process design using the contingency factors as independent variables and the design parameters as dependent variables.

## Appendix

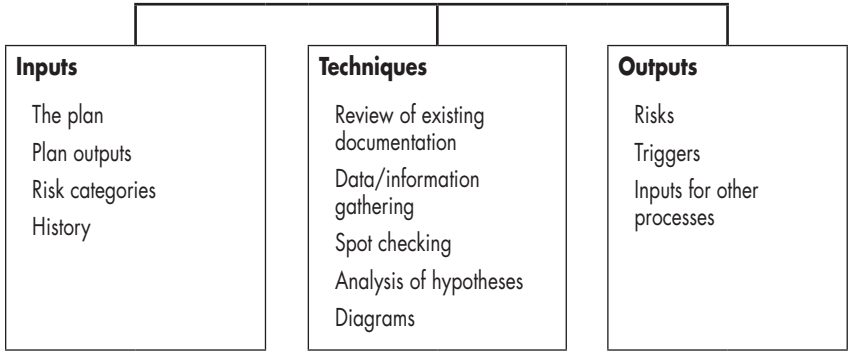
The Risk Management Process: An Example



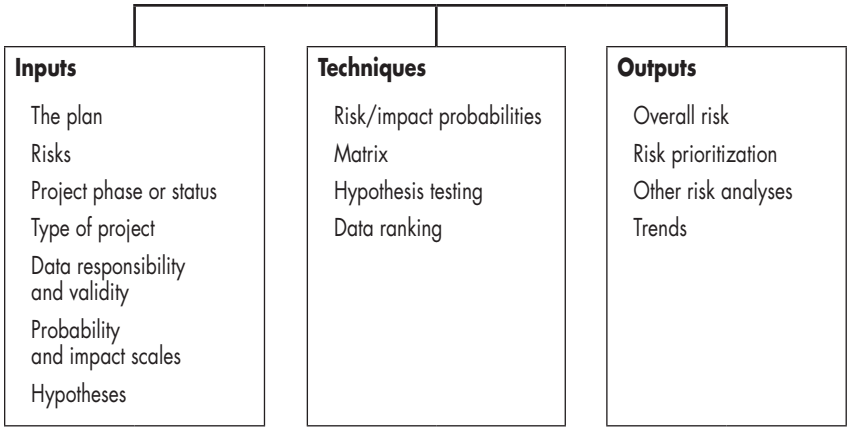
## Risk Management Planning



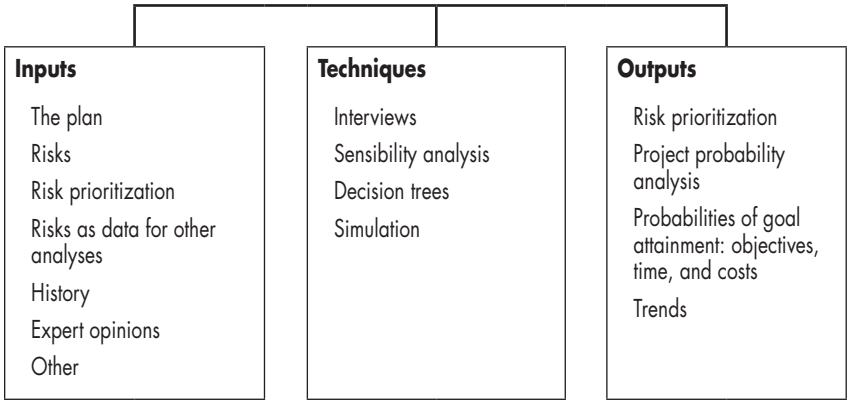

## Risk Identification



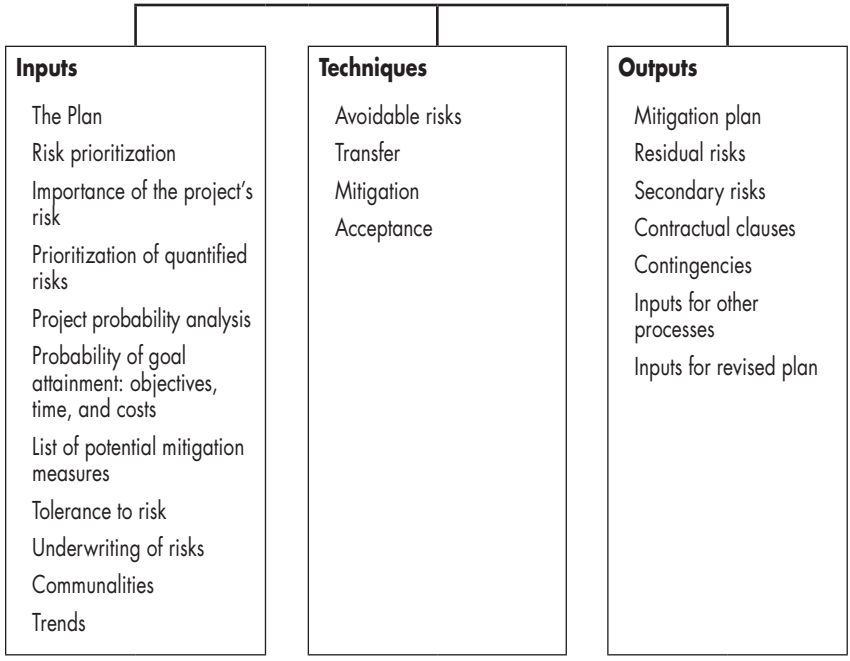
## Qualitative Risk Analysis



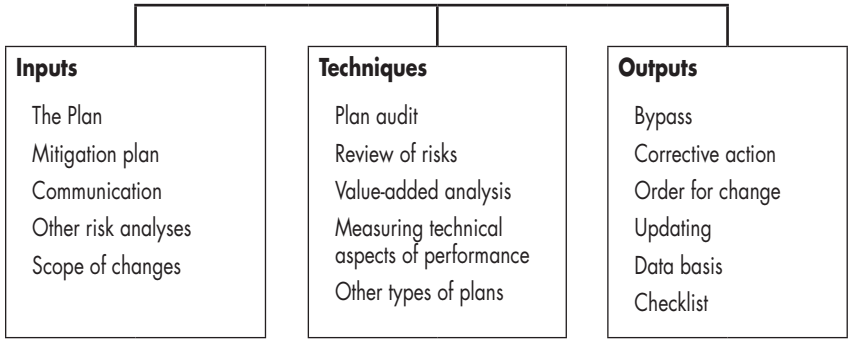

## Quantitative Risk Analysis



## Risk Response Planning




## Risk Monitoring and Control




# HOLISTIC APPRAISAL FOR DESIGN PROCESSES

Luc Chaput

This chapter examines a few methodologies pertaining to environmental decoding and to evaluating the impact of the environment's complexities on various inner managerial systems.

## 1. Performance, Structure, Complexity

The following relationships describe some aspects of organizational performance and are largely based on some conclusions of contingency theory we have seen in Chapter 1.

A) A stable environment is best associated with a mechanistic structure. An instable environment is best associated with an organic structure.

FIGURE 2.1

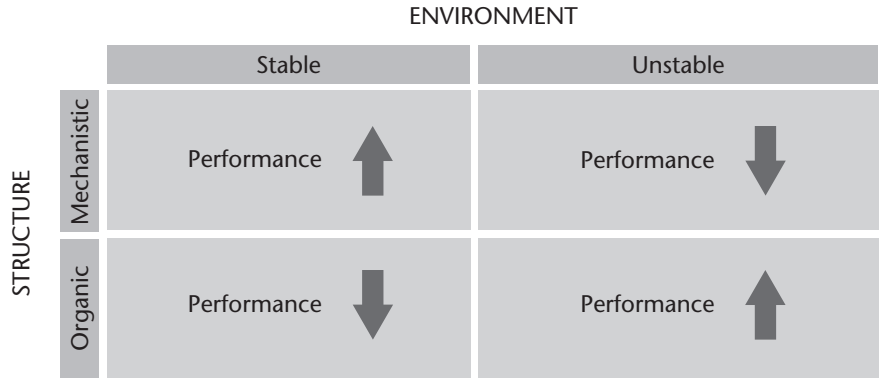
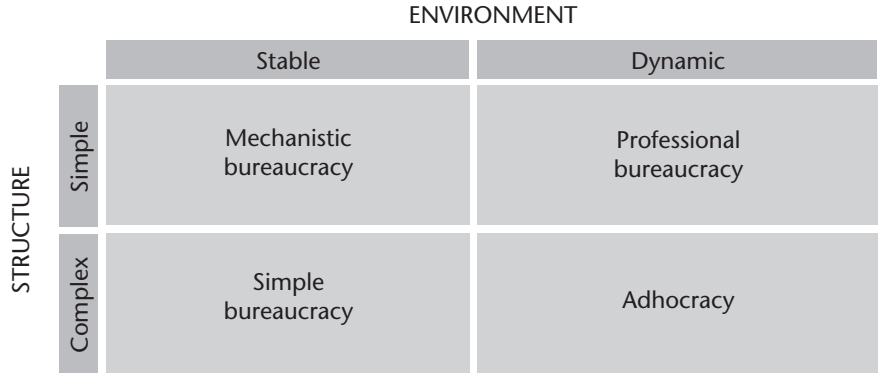



FIGURE 2.2



B) A purely routine technology is best associated with a purely mechanistic bureaucracy. A purely non-routine technology is best associated with an adhocracy.

FIGURE 2.3

| | TECHNOLOGY | | | |
|---|---|---|---|---|
| STRUCTURE | Routine | | Non-routine | |
| | Routine | Semi-routine | Non-routine | Non-routine generalized |
| | Mechanistic bureaucracy | Professional bureaucracy | Simple | Adhocracy |

C) High-performance systems associated with simple-stable and complex-unstable environments are described according to various aspects.

FIGURE 2.4

| | | COMPLEXITY OF THE ENVIRONMENT | |
|---|---|---|---|
| | | Simple | Complex |
| CHANGE IN THE ENVIRONMENT: Stable | *Level of uncertainty*<br>*Externals elements*<br>*Type of elements*<br>*Rhythm of change* | Low<br>Small number<br>Similar<br>Very slow | Low to average<br>Many<br>Different<br>Very slow |
| CHANGE IN THE ENVIRONMENT: Instable | *Level of uncertainty*<br>*Externals elements*<br>*Type of elements*<br>*Rhythm of change* | Average to high<br>Small number<br>Similar<br>Continuous | High<br>Many<br>Different<br>Continuous |

FIGURE 2.5

COMPLEXITY OF THE ENVIRONMENT

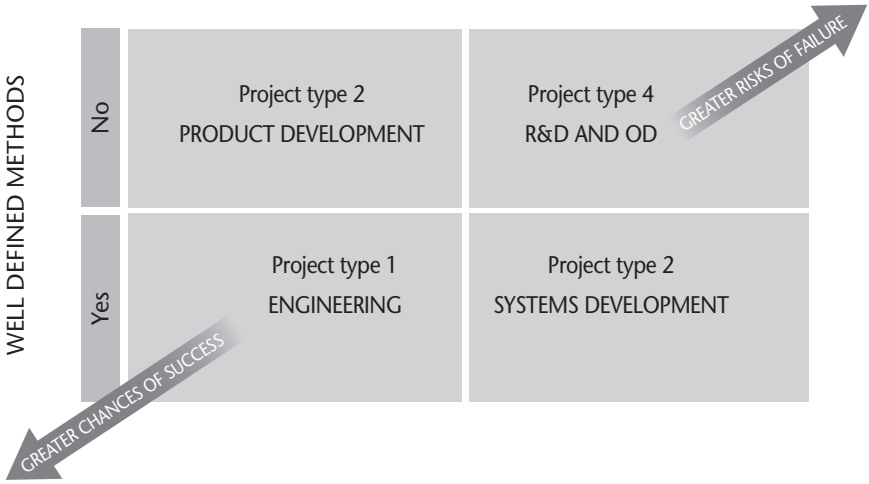
| CHANGE IN THE ENVIRONMENT | | | Simple | Complex |
|---|---|---|---|---|
| | Stable | *Level of uncertainty*<br>*Structure*<br>*Coordination*<br>*Number of departments*<br>*Integration* | Weak<br>Formal, centralized<br>Standardized process<br>Few<br>Small degree | Weak to average<br>Formal, a bit decentralized<br>Standardized training<br>Many<br>Some |
| | Instable | *Level of uncertainty*<br>*Structure*<br>*Coordination*<br>*Number of departments*<br>*Integration* | Average to high<br>Informal, decentralized<br>Direct supervision<br>Few<br>Small degree | High<br>Informal, decentralized<br>Informal communication<br>Many<br>Large degree |

| | Simple-Stable | Complex-Unstable |
|---|---|---|
| *Structure*<br>*Coordination*<br>*Number of departments*<br>*Integration*<br>*Level of uncertainty* | Formal, centralized<br>Standardized process<br>Few<br>Small degree<br>Low | Informal, decentralized<br>Informal communication<br>Many<br>High degree<br>High |

D) Complexity implies uncertainty; uncertainty implies risk.

FIGURE 2.6

## Uncertainty: Project Complexity—The Goals and Methods Matrix




Source: J.H. Payne and J.R. Turner, "Company-wide project management: The planning and control of programmes of projects of different type", *International Journal of Project Management*, Vol. 17, No. 1 (1999), p. 55–59.

## Cases

1. Identify a typical business that "fits" each quadrant in Figure 2.5.
2. Explain how the above models facilitate the planning process.

The application of these "macro-management" tools requires methodologies that are more adapted to local conditions. These methods are described in a set of procedures giving a holistic appraisal of the project at hand (Table 2.1).

TABLE 2.1

### Holistic Appraisal

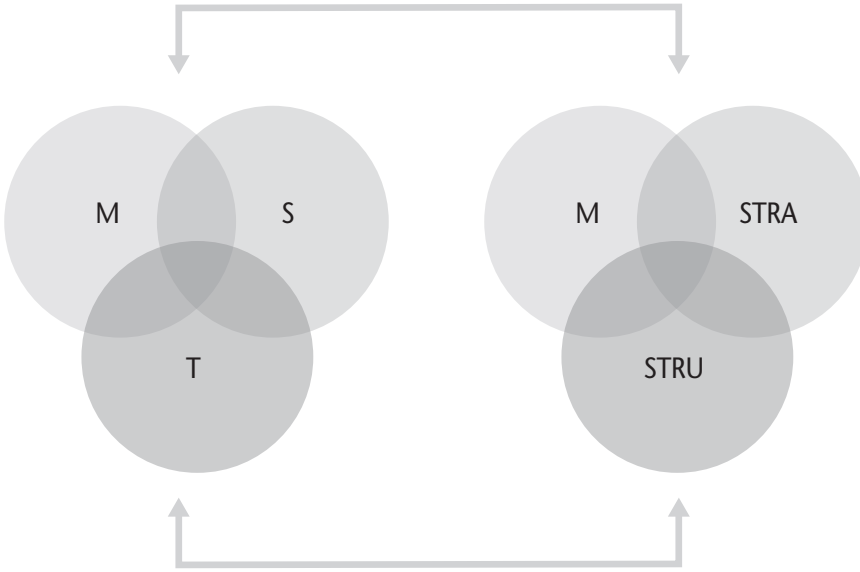
| Key Concepts | Focus Questions |
|---|---|
| Establish the operating environment for your project design: PESTEL analysis | ▪ Have you considered the context in which your project will be set?<br>▪ What factors will be important to assess in the holistic appraisal stage? |
| | Have you determined which tools will provide you with the information you need to understand: |
| Stakeholder analysis | ▪ the relative importance and influence of various stakeholders? |
| Institutional assessment | ▪ the institutional capacities of partners or target groups? |
| Industry analysis | ▪ the forces governing the industry? |
| SWOT analysis | ▪ how to identify a strategy? |

## Case

Explain how a political, economic, social, technical, environmental, and legal (PESTEL) analysis might help international aid programs such as CARE create better design processes.

## 2. The Systemic Approach

FIGURE 2.7
Management Subsystems




| | |
|---|---|
| M | Management Subsystem |
| S | Socio-cultural Subsystem |
| T | Technical Subsystem |
| STRA | Strategic Subsystem |
| STRU | Structural Subsystem |

**Subsystem:** Each of the interdependent parts of a system.

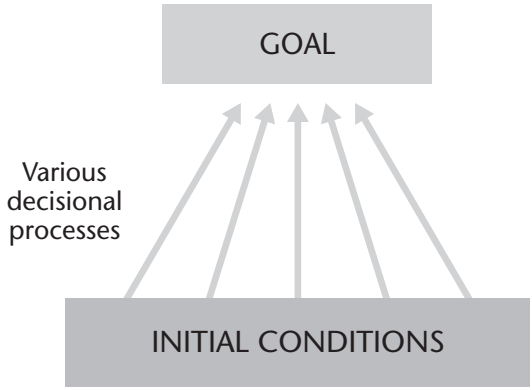
**Open system:** A system that exchanges information, energy, and resources with its environment.

**Complexity:** A function of the number, change, and interrelations of variables.

**Dynamic equilibrium:** An equilibrium whose point is always changing, because effectiveness is dependent on the capacity to survive. This concept takes into account the notion of feedback.

**Equifinality:** A principle by which a same goal can be attained from different initial conditions and by various processes. There is no universal approach to solve a management problem.

FIGURE 2.8
Equifinality

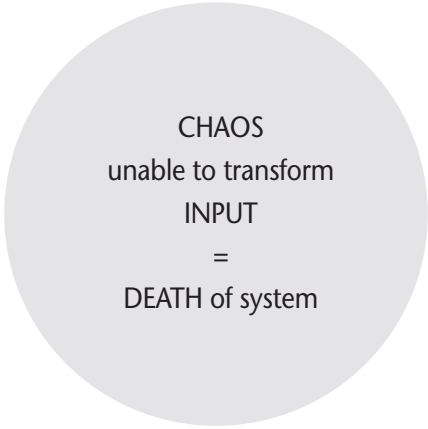



**Multiple finalities:** A principle by which people have different values and everyone pursues their own goal.

**Synergy:** A principle by which a system is worth more than the sum of its elements or of the values of its subsystems.

**Entropy:** A principle by which every closed system will reach disorder and will lose power needed to transform inputs.

FIGURE 2.9
Entropy




## 3. Case Study: The Consequences for Business Policy

Examine the policymaking in your organization by establishing whether the policies' content will lead to greater performance as measured by the synergy of subsystems.


# DESIGNING FOR PERFORMANCE

Luc Chaput

## 1. Prerequisite Definitions of Organizational Performance

Over time, several authors in management have suggested that studies of organizational performance should momentarily cease, for the following reasons:

1) Underdeveloped theoretical framework
2) Overabundance of one-dimensional variables
3) Ill-defined nature of models
4) Failure of existing studies to systematically take into account the organization's environment and strategy

A few definitions of key concepts follow.

a) Evaluation

*Evaluation as a way of producing information:*

The results are measured along a predetermined scale; if the evaluation is comprised of objectives and criteria, then the information produced is a measure of fit between realized performance and start-up objectives. The information must be useful to the decision process; sometimes, though, the judgment of a professional regarding value is needed.

*Evaluation as a way of doing research:*

This type of evaluation has various approaches: experimentation, descriptive studies, and cost-benefit analysis.

*Evaluation criteria:*

Criteria are established according to context; they produce information and take into account the stakeholders' point of view.

b) Indicators

Indicators are quantitative data enabling benchmarking. There are four basic types of indicators: context indicators, input indicators, process indicators, and output indicators.

The multicriterion approach with Saaty's algorithm is analog to Simon's theory. It is used to optimize a linear combination of criteria and permits a dynamic, interactive, non-bounded evaluation.

c) Efficiency/effectiveness

Efficiency is often viewed as survival; it depends on the consistency of organizational elements and their fit with the environment. Effectiveness is often equivalent to goal attainment.

d) Excellence

Excellence is client-centred; it encourages autonomy and motivation; it associates productivity with motivation; it engages stakeholders around a key value/belief; it sticks to know-how; it creates flexible structures; and it is a fusion of flexibility and vigour.

e) Quality

Initially, quality was centred on statistical control of pars; in the 1990s, this concept mutated into total quality, where the focus is on error prevention.

f) Outputs

Outputs are considered as necessary means to attain objectives. According to Likert (1967), we must create links between internal processes and outputs because the former are also associated with adaptability and survival.

g) Processes

Processes are comprised of a viability dimension, *i.e.*, adaptability and flexibility, and a vitality dimension, *i.e.*, long-term survival.

## 2. Attributes of Organizational Performance

The attributes of performance are either a dependent or an independent variable. There is no general consensus on their definition. Changes occur along with time (since adaptability implies the notion of time) and because of the variety of stakeholders, organization types, and organizational levels.

## 3. Definition of Performance

Performance is a social construct comprised of many variables which may be distinct and possibly contradictory. It is to be noted that no variable by itself can define performance, and no absolute algorithm can group variables in many categories.

The performance variables are mutable (evolving through their development stages). They are divergent, *i.e.*, they change according to different stockholders; they are transpositive, *i.e.*, they change according to from one organizational level or type to another.

## 4. Performance Models

In applications, models must have an objective and indicate the domain of choice (finance, human relations, etc.), the organizational level, the study group, *i.e.*, the stakeholders, the period chosen (*e.g.*, 1995–2005), the type of data (perceptual, objective), and the basis of comparison for benchmarking.

## 5. Designing for Organizational Performance

### 5.1. Horizontal Structures

*Example: Downsizing and Reengineering*

In this context, there is a shift:

| **From** | **To** |
|---|---|
| ▸ Employee = long-term investments | ▸ Employee = short-term costs |
| ▸ Motivation as dependence | ▸ Motivation as independence |
| ▸ Appurtenance as a valid objective | ▸ Autonomy as an objective |
| ▸ Long-term duration | ▸ Short-term direction |

Downsizing is a redesign of work using reorganization or restructuration. The staff reduction is a strategy leading to a leaner organization while balancing the number of employees necessary for the ongoing organization.

Reengineering is a radical change in processes using technology to obtain spectacular gains in critical performance areas such as costs, quality, services, or just-in-time delivery.

## Comparison between Downsizing and Reengineering

| **Downsizing** | **Reengineering** |
|---|---|
| Staff reductions to decrease expenses, without a re-evaluation of all parts of the organization | A review and new radical design of all processes |
| Top management makes decisions | Decisions made through teams |
| Very-short-term profits | Very-short-term positive changes; at least 30% gain in productivity |
| May guarantee short-term survival | Better organization positioning and perhaps a larger market share |
| Leads to overwork, stress, loss of loyalty (allegiance) | Employees must adapt to new tasks and responsibilities |
| May result from reengineering | May cause a downsizing |
| Reactive | Proactive |
| Employees considered as expenses | A new concept of function |

According to a CEFRIO (1995) research:

- Between 1987 and 1992, 50% of American firms who proceeded with downsizing had better operational results and 25% registered a loss in profits.
- Reengineering had a 70% failure rate in the United States, less in Canada.
- At least 15% of job losses were not due to attrition.
- Main reasons for failure were high employee resistance, inadequate support from management, and overestimation of benefits.

## 5.2. Designing for Change Management

### *5.2.1. Capacity for Change*

- The main task is to provoke change; to lead a group towards a given direction different from the observed one, knowing people would prefer other options.
- In this context, what is an organization? People deciding to cooperate and move toward an end, in a deliberate and conscious fashion. Without cooperation, there can be no organization.
- The strategy is the main management tool for exercising the will to cooperate; it is comprised of two important dimensions: an internal equilibrium and an equilibrium which is adequate considering the environmental components.
- A change of strategy implies an in-depth questioning of the existing definition and its replacement by a new one; most important is the acceptance of the consequences.
- To implement the new strategy:

  Paradoxically, cooperation requires coherence in using the tools as well as stability.

  To change is to question the basis of the observed cooperation, to find out whether internal or environmental fits are necessary.

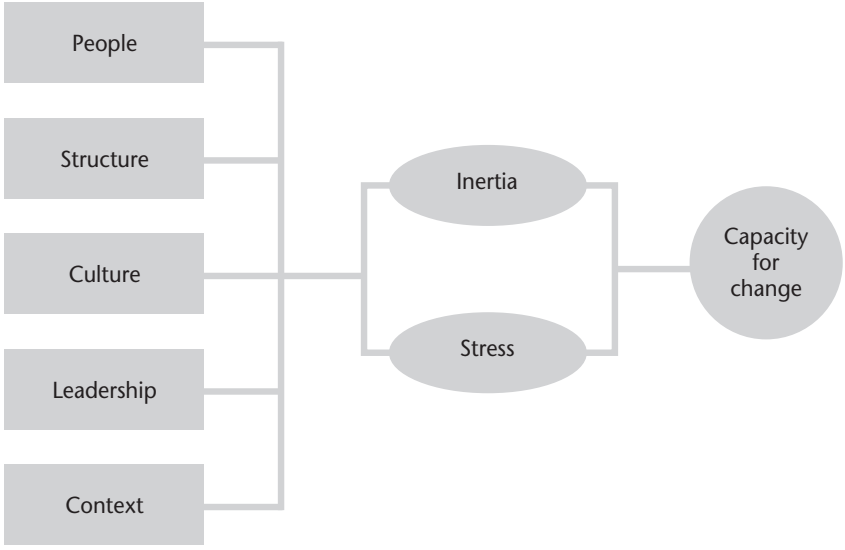
  To attain a new equilibrium requires modifying management mechanisms in order to reach a new state of cooperation by disposing of the original.

  Destroying the original cooperation system can be done quickly, but it takes time and energy to create a new one.

  Measuring the capacity for change is necessary to avoid destroying without being able to reconstruct.

  In essence, capacity for change is the inverse of resistance to change.
- Capacity for change is determined by: context, including relative performance; demographical and psychological characteristics of top managers; structural arrangements; culture; and human resources.
- Capacity for change takes into account the effects of determinants which are mediated by capacities, stress, and inertia.

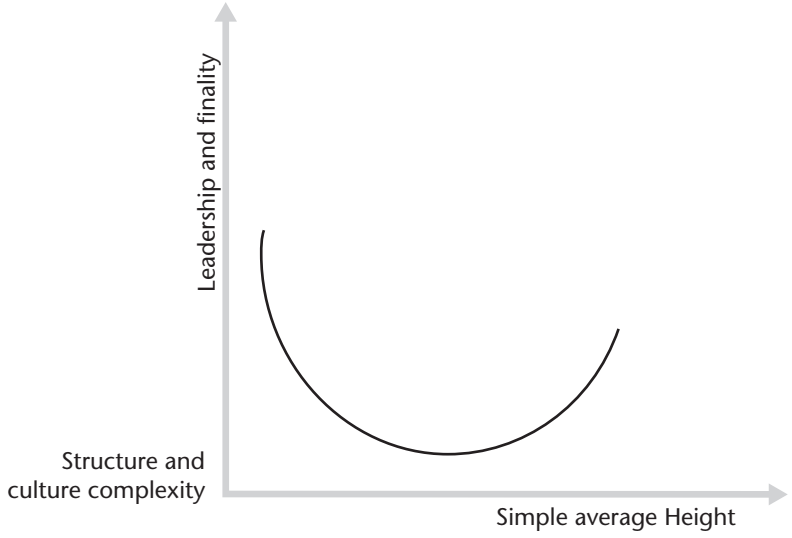
## *5.2.2. A Model of Capacity for Change*




Source: Taïeb Hafsi and Christiane Demers (1997). *La capacité de changement des organisations.* Montréal: Les Éditions Transcontinental.

### Effects of Complexity

The relative weight of each factor is tied to the organization's level of complexity.




Source: Taïeb Hafsi and Christiane Demers (1997). *La capacité de changement des organisations.* Montréal: Les Éditions Transcontinental.

When the organization is simple, leadership and finality are key factors of capacity for change.

When complexity is average, culture and structure are key factors of capacity for change.

As complexity moves higher, structure, culture, finality, and leadership are important, but finality and leadership become crucial.

#### EFFECTS OF THE ENVIRONMENT

Environment is always an important factor in determining capacity for change, but it is critical when complexity is relatively high and capacity for change is rapidly decreasing.

A change in top management's interpretation of the environment increases pressure for change.

The perception of a crisis is among the greatest pressures for change; if the crisis appears to have a high impact, inertia increases.

### *5.2.3. Performance and Change*

A significant positive or negative change in performance increases pressure for change; a decrease in performance relative to competitors exerts more pressure than a decrease relative to past performance.

#### TOP MANAGEMENT AND CHANGE

Propensity to change is greater when top management is younger, is relatively new to the job, possesses experience with complex industries or with managerial discretion, or has experienced some successes going through strategic changes.

#### EFFECTS OF STRUCTURE

If structure is specialized and formalized, then inertia increases; the more structure is integrative and informal, the more inertia decreases.

The more the structure of a big organization is centralized with units tightly joined, the more inertia increases.

The more the structure is decentralized with autonomous units loosely connected, the more inertia decreases.

Organic structure supports innovation by reducing inertia, but bureaucracy supports the diffusion of innovation by reducing pressure for change. A coherent structural configuration increases organizational inertia.

Inertia is greater with radical change in an organic structure. If resource distribution and power support groups oppose to change, then inertia increases.

In the early stages of an organization, culture increases pressure for change. With maturity, culture stabilization or conflicts between sub-cultures increase inertia.

If changes are considered compatible with culture, then inertia decreases. However, if changes are perceived to be countercultural, then inertia increases.

Progressive integration of different change-neutral elements decreases organizational inertia. Sub-cultures exert a pressure for change if one is dominant or if there is a synthesis between them.

## 5.3. The Prospective Method

### *5.3.1. Crisis Management*

To fully understand the meaning of a crisis we must proceed from incident to crisis.

An incident occurs when a unit or a subsystem stops functioning. That part has to be repaired, but the whole system is not impaired.

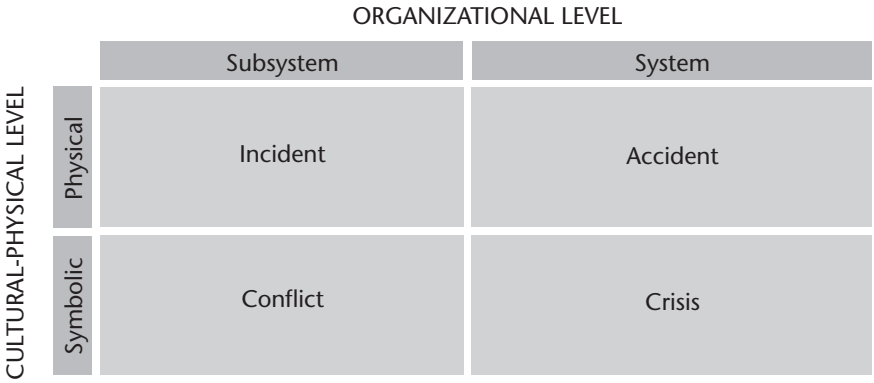
An accident such as a plant shutdown will affect the whole system.

In both cases, there is a physical impact, which may involve technology, and there may be a social impact on routines and procedures. A situation of conflict does not impair the organization's values and is largely symbolic in nature. A crisis occurs when the whole system is affected and the basic values are challenged.

Downsizing can lead to a crisis or vice versa. For those who become survivors, quality of life means to transcend this crisis and transform one's existence.

FIGURE 3.1

## From Incident to Crisis




The crisis management process is usually comprised of five phases:

a) Identification of before-impact signals

The sheer volume of information makes this task practically impossible; these signals must be decoded and their content analysed.

b) Prevention mechanisms

Internal audits, maintenance programs, research and development, and training are all examples of mechanisms that will mitigate some crises, but not all of them.

c) Mitigation procedures

A crisis centre, well-performing security systems, state-of-the-art databases, and, most of all, a ready-to-roll internal and media communication process are important mitigation tools.

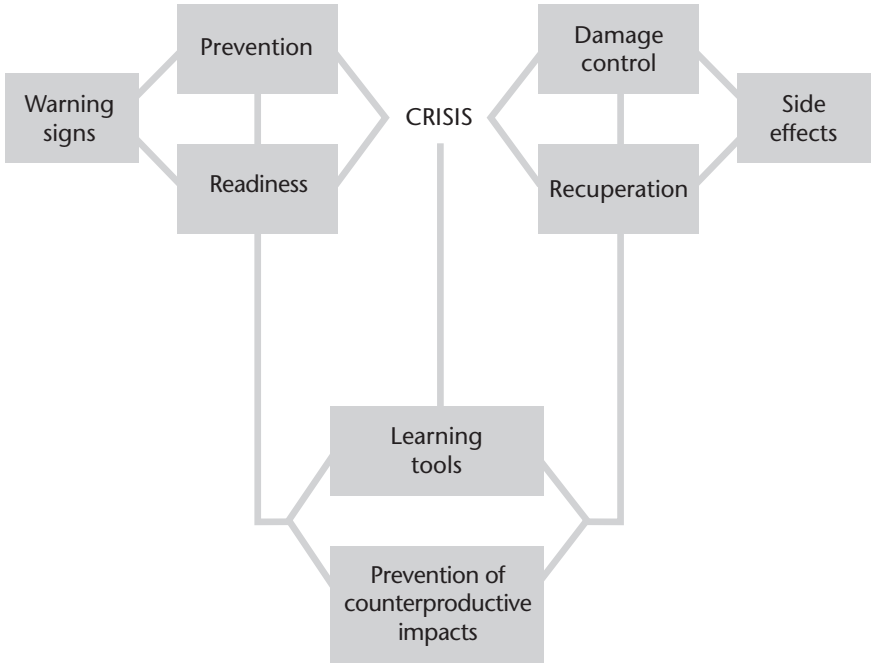
d) Damage control

To compress and constrain impacts at all levels, physical and symbolic functions such as brand image are important. Other examples are the levelling of market share and the control of longer-term secondary impacts such as costs.

e) A learning process, including the prevention of counter-production effects.

FIGURE 3.2

Crisis Management Phases




## *5.3.2. Environmental Vigil*

a) Introduction

Many organizations have installed strategic vigil units. A few examples are Bombardier, Teleglobe, CAE, La Société générale de financement, and Tourisme-Québec.

At Université du Québec, several such units apply strategic vigil to the field of higher education. In 1999, UQAM and IBM created a business intelligence centre. UQTR, in line with its small-and-medium-enterprise focus, produced an array of research papers pertaining to technical vigil, its success factors, and business practices.

Partners with UQO are the pulp-and-paper industry, the Ministry of Trade and Commerce, Canada Economic Development, and the Conseil régional de développement économique de l'Outaouais.

b) Strategic vigil

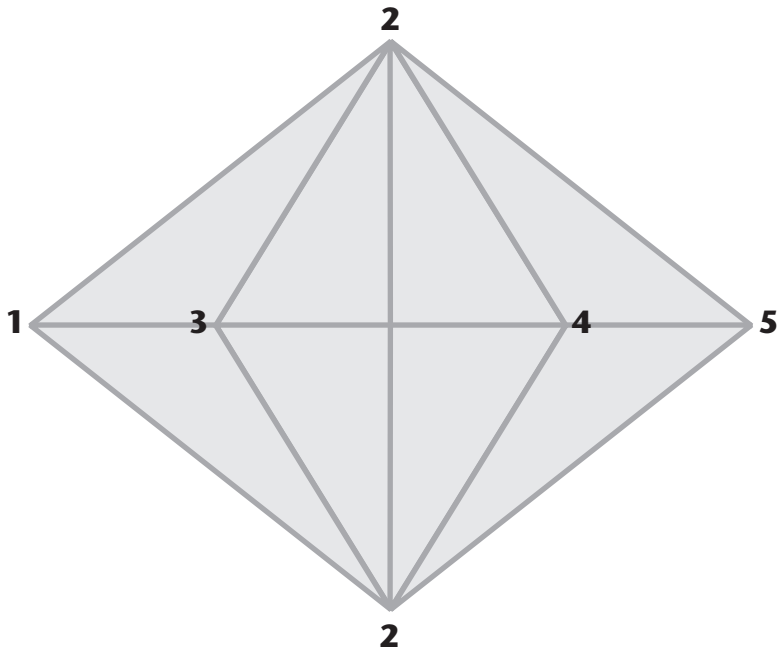
The vigil increases the organization's performance by gathering relevant information that is forwarded in a timely manner to the responsible manager to enhance decision-making. The strategic vigil develops a type of extra-sensory perception (ESP).

The vigil is now at the centre of the conceptual framework (Environment-Strategy-Performance). The application of the ESP model is defined by the BKMIA chain of steps or processes.

FIGURE 3.3

## The BKMIA Chain

| **B**enchmarking | **K**nowledge Management | **M**imetism | **I**somorphism | **A**spiration Level |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |



**Benchmarking:** Object identification; enterprise choice: baseline; legal issues; is benchmarking included? Benchmarking is a valuable process combining information gathering and the integration of results in business practices.

**Knowledge management:** Knowledge management combines a vertical axis representing tacit and explicit knowledge and a horizontal axis corresponding to the finality dimension. The variance of the vertical axis (exploration) may be quite large but is it always greater than the variance of the horizontal axis (exploitation) because the latter also contains financial risks.

The amplitude and speed of interrelations between the two types of knowledge depend on the number of agents in and outside the organization: amplitude and speed are proportional to the exterior complexity.

**Mimetism:** The quest for identity will impact on learning processes and on the value of information; belonging to a particular industrial group can explain up to 20% of the variance of performance.

The mirror effect creates an organizational inclination towards a mimetic process.

**Isomorphism:** The attributes of such organizations will be re-directed towards other institutions planning to acquire these innovations; an isomorphic process leads to homogeneousness of business practices.

FIGURE 3.4

The Isomorphism of Enterprises A and B

| | Enterprise A | Enterprise B |
|---|---|---|
| **Products** | $a_1$ | $b_1$ |
| **Services** | $a_2$ | $b_2$ |
| **Processes** | $a_3$ | $b_3$ |
| **Policies** | $a_4$ | $b_4$ |
| **By-laws** | $a_5$ | $b_5$ |
| **Decisions** | $a_6$ | $b_6$ |
| **Strategies** | $a_7$ | $b_7$ |
| ... | $a_8$ | $b_8$ |

The resulting treatment of elements in A, when put in correspondence, must be preserved when using their respective images. In other words, let $a_1$ and $a_2$ be two elements of A and let $a_1 \times a_2$ be their managerial treatment (an offer with a monetary value). The image of the treatment is now designated by $f(a_1 \times a_2)$, which represents an element of B.

**Question**: Does the image of treatment a1 × a2, that is, f(a1 × a2), correspond to a treatment of the same value (designated by ε in B) of the respective images of a1 and a2?

**Does f(a1 × a2) = f(a1) ε f(a2)?**

Let us compare the strategic unit of enterprise A, $P_a \times M_a$, with the corresponding strategic unit of enterprise B.


Managerial treatment Pa × Ma will be perfectly mimicked if f(Pa × Ma) = f (Pa) ε f(Ma); but the monetary value of Pa × Ma may already be equal to or greater than f(Pa) ε f(Ma). Such considerations may help managers in their decision-making.

Furthermore, we can decide on the level of aspiration O at time t, $O_t$, by creating links with the level of aspiration at time t–1, $O_{t-1}$, and the performance at time t–1, $P_{t-1}$.

| $\mathbf{O^t = \alpha O^{t-1} + (1-\alpha)\ P^{t-1} + VAL^t}$**, where** $\mathbf{0 \leq \alpha \leq 1}$ |
|---|
| $\alpha$ **measures the importance given by managers to O and P.** |

## 6. Conclusion: "What You Do Not Know Cannot Hurt You"

Applying this old saying would not entice an enterprise in understanding the competitive advantage of another firm.

CHAPTER

# LIAISON DEVICES

Luc Chaput

## 1. The Emergence of Results-Based Management

- All OECD countries faced major public finance crises in the 1980–1990 period.
- New Public Management (NPM) emerged, integrating many aspects that were traditionally associated with "private sector" management.
- There was a shift from total quality management to business process reengineering, and from *Reengineering the Corporation* (Hammer and Champy) to *Reinventing Government* (Osborne and Gabler).
- Citizen-taxpayer is seen as a client, as in "client-focused."
- The use of project management approaches and techniques increased in program management.
- The traditional focus of management was on controlling and reporting on expenditures.
  - We spent $X million on education; $Y million on health; $Z million on HR training and development, international aid, etc.

- Does "correct expenditure of resources" mean successful implementation and delivery of government programs or policies?
- From the population's point of view, have these programs and policies actually produced the intended results and benefits to the citizens? So what?
- What has changed? What has improved?

## 2. The "So What" in Development Aid

Building a school, paving a road, training rural clinic workers, creating a health cooperative does not answer the "so what" question. These are outputs, not results (or outcomes). What are the results in having this school built, this road paved, those rural clinic workers trained, or that health coop created?

Will the new school reduce the gap in children not finishing primary education? Will the paved road improve the delivery of goods and services? Will the training improve health services to the citizens? (Adapted from Kusek and Rist, *10 Steps to a Results-Based Management Monitoring and Evaluation System*, World Bank, 2005.)

Results-Based Management (RBM) is not dramatically new. It is management plus an explicit reminder that one is doing something to achieve a result (a change, an improvement, a benefit to society).

RBM emphasizes development and improvement, that is, something that matters to citizens and communities, improvements in peoples' lives. Particularly in the public service domain, it represents a shift from traditional reporting on expenditures and activities to reporting on results: focusing on clients, citizens, taxpayers.

RBM facilitates an integrated and coherent approach to public management. It enhances the political institutions' credibility.

RBM facilitates improved accountability. Accountability is one's obligation to answer for their actions, to be able to demonstrate that their work was done in compliance with laws, regulations, values, and ethics.

## 3. Why Implementation Is Country-Specific

Implementation certainly is country-specific, because it is situated at the crossroads of two axes. The first axis follows a continuum (public administration) that goes from a control process to a results-based management process. The second axis is a vertical continuum that goes from a rules-based approach to a value-based approach.

Project implementation implies many important decisions regarding team management, options for structuring, and risk evaluations, just to name a few.

Also, these management actions are based upon cultural values that vary from one country to another. These values will influence risk assessment, tolerance to inequity, the degree of individualism accepted, even the society's degree of masculinity/feminity.

Below are a few major findings regarding culture and the workplace (Hofstede 1991).

### 3.1. The Influence of Cultural Differences on Risk Assessment

When assessing information technology project risks, people from different cultures perceive the relative importance of these risks differently. Within a task force, which nationals are likely to make a closer evaluation and measure of project risks? Geert Hofstede (1980, 1991) has identified and tested four largely independent cultural dimensions that can help us understand the difference in risk assessment: power distance, uncertainty avoidance, individualism versus collectivism, and femininity versus masculinity.

### 3.2. The Power Distance Dimension

Power distance refers to the degree of inequity that the population expects and accepts. Employees in low-power-distance countries are more participative, and managers tend to seek input from their team members. In high-power-distance countries, employees expect and accept the fact that managers make decisions with little consultation. This may affect their expectations about the role of the team leader.

Employees in low-power-distance countries are ready to confront management to get what they need. Employees from high-power-distance countries would never disagree with their team leader out of respect for their superiors. Suppose you value employees that challenge their team

leader openly. The Chinese members of the team could not agree to challenge the team leader because China is a high-power-distance country where there is great respect for one's superiors.

## 3.3. The Uncertainty Avoidance Dimension

Uncertainty avoidance is the extent to which members of a culture are comfortable with uncertainty. Individuals that have high uncertainty avoidance seek details about plans. People from such countries—for example, Belgium, Japan, and France—may exhibit more anxiety in ambiguous situations. A person with high uncertainty avoidance will look for detailed information that makes risks clearly interpretable.

People from cultures with low uncertainty avoidance—for example, United States, United Kingdom, and Canada—are more comfortable with ambiguous situations.

Variations in uncertainty avoidance create differences in the team members' preference for detailed plans, formalization of roles and responsibilities, defined schedules, and review processes. People who require less structure will give a high rating to management and organizational risks, and people who need more structure will invest more time in detailing people-related and other external risks.

## 3.4. Individualism versus Collectivism

Individualism is the degree to which people prefer to act as individuals rather than being part of a group (collectivism). Employees from individualist-type countries attribute risks to an individual. United States, France, and Italy are considered countries with a high degree of individualism.

In collectivist cultures such as Asia and Central America, group loyalty is valued above efficiency. Employees attribute risks to the group. Groups might not obtain consensus.

## 3.5. Femininity versus Masculinity

This dimension describes the extent to which a "masculine" orientation towards revenues, success, and possessions prevails over a more "caring" (feminine) orientation which includes nurturing, cooperation, and sharing.

In a more feminine culture, people tend to be more self-critical, so they give higher measure to the risks that are triggered because of their own lack of knowledge or for team-related risks.

In a "masculine" culture, personal inadequacies are readily admitted. People tend to focus on risks that are external, but with a slight control. External risks are considered of higher importance than internal ones.

## 4. The Logic Model

The logic model (or results chain) is the causal or logical relationship between inputs, activities, and the outputs and outcomes that they are intended to deliver.

FIGURE 4.1

First Representation of the Logic Model

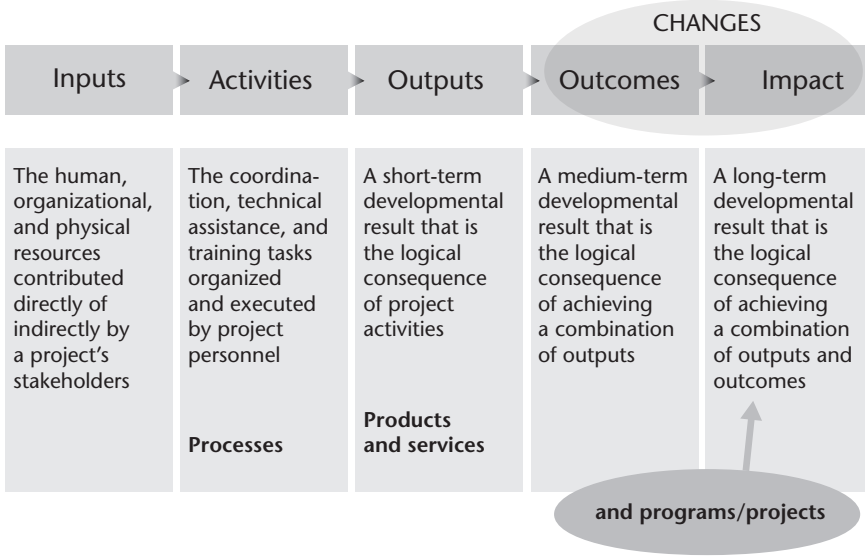


FIGURE 4.2

## Another Representation of the Logic Model (adapted from Rosnay 1975)

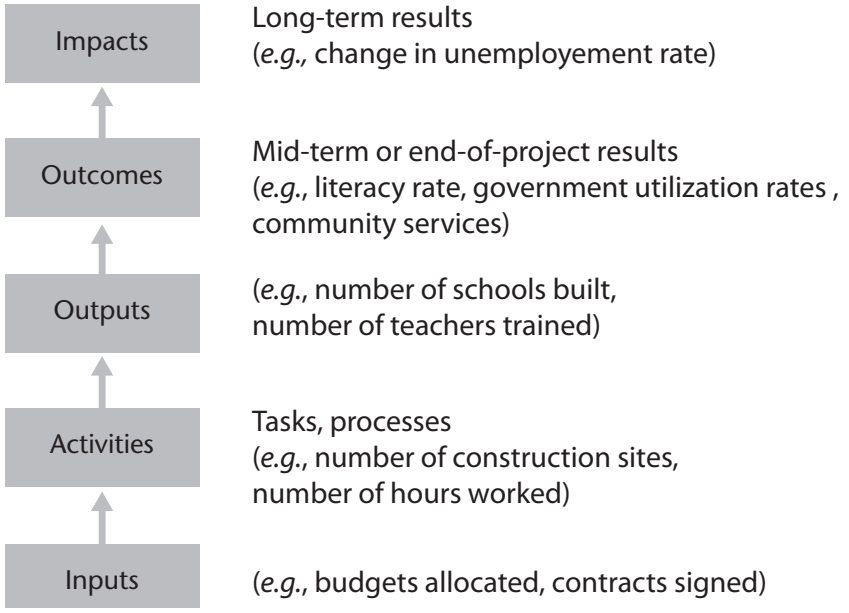



TABLE 4.1

## Benefits Expected from a Logic Model

| | |
|---|---|
| Program design and planning | Goals, objectives, and major "side effects" identified and defined ahead of time |
| | Goals, objectives validated (plausible and possible) |
| | Gaps/problems in theory and logic identified and addressable |
| | Shared understanding |
| Program implementation and management | Useful, relevant, and credible performance data obtainable |
| | Management focused on important connections between actions and results |
| Program evaluation, communication, and marketing | Agreement among intended users of monitoring and evaluation results on how to use information |
| | Participative tool—way to involve/engage stakeholders in monitoring and evaluation |

FIGURE 4.3

Logic Model and Performance Indicators: A Public Health Promotion Program

| Activities | Outputs | | Results/Outcomes | |
|---|---|---|---|---|
| Research, monitoring, information analysis | Dissemination of information to health workers and population | Informed stakeholders | Population assumes responsibility to protect, maintain, and improve its health | Improved general health; reduced variances between segments of population |
| **Possible Performance Indicators** | | | | |
| Funding for each activity | Number of health workers reached<br><br>Percentage of population reached | Percentage of population reached that understood the message | Percentage of population that have taken steps to improve their health | Improvement in general health of population<br><br>Savings for health system |

## 5. Performance Indicators

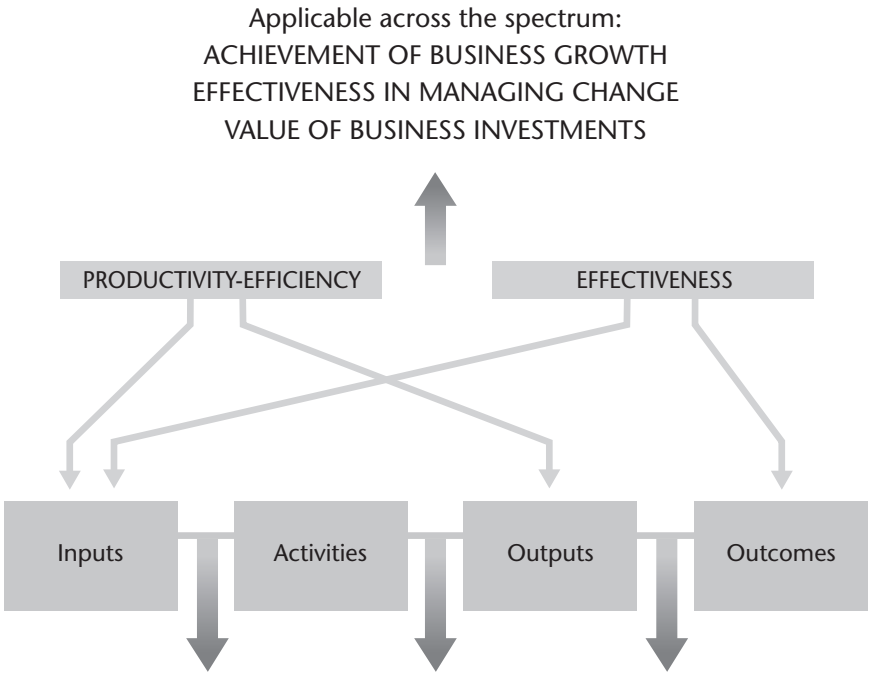
You must know what you need to know and who needs to know what!

- Your indicators must cover all components of the logic model.
- You must collect and analyse the performance information required to fulfill your obligations as manager:
  - As a project manager, your responsibilities generally stop at deliverables' efficiency.
  - As a program manager, your responsibilities normally include at least short-term and probably intermediate outcomes as well as effective and alternative designs.
- You must also gather the information required by the stakeholders: government, funding/financing institutions, partners (*e.g.*, NGOs, other spheres of government, communities), beneficiaries, etc.
- To be able to measure progress, you need baseline information.
- Collect only significant, decision-making-relevant information.
- Numbers are not enough to answer "Why" questions.

## 6. Performance Measurement: An Example from CRA

FIGURE 4.4

Mapping the Measures to the Results Spectrum




**Effective Resource Utilization**

- Investment in employee learning
- Workforce capability and fit
- Workforce management effectiveness
- Cost efficiency
- Asset renewal effectiveness

**Quality and Processing Efficiency**

- Client service quality
- Processing quality
- Verification and enforcement quality
- Redress quality
- Internal service quality
- Cash management efficiency

**Program Effectiveness**

- Client education effectiveness
- Risk management effectiveness
- Value of service to external clients
- Value of service to partners and other stakeholder assessments
- Value of service to internal clients

FIGURE 4.5

## Effectiveness and Efficiency [Utilization; Taxpayer]

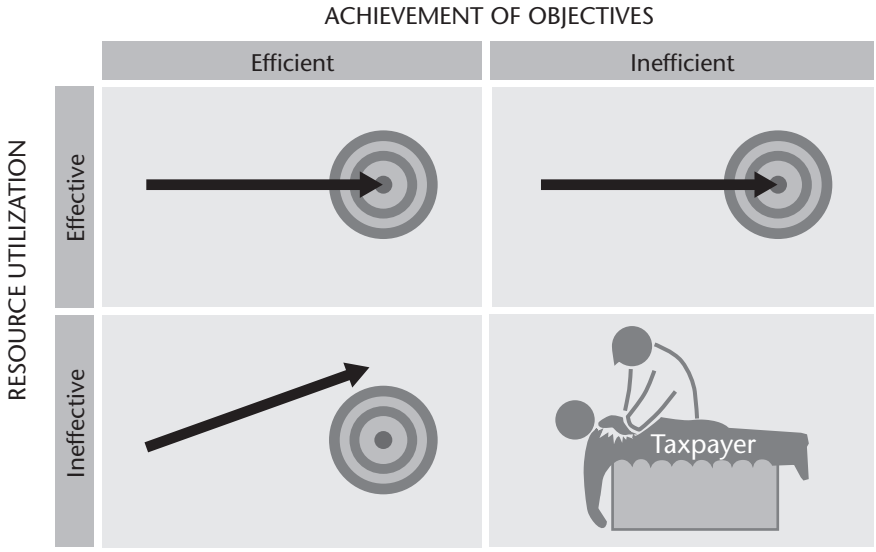



FIGURE 4.6

## Logic Model Quality Review Checklist

- ✓ Results are credible to a variety of stakeholders
- ✓ Impact is within scope of program/project
- ✓ Outcomes are expressed as change statements relative to the participants (e.g., behaviours, knowledge, and skills)
- ✓ Outcomes meet the S M A R T criteria
  - **S**pecific **M**easurable **A**ttainable **R**elevant **T**ime-bound
  - ✓ Are within the control/influence of the program/project
  - ✓ Are achievable within funding and time available
- ✓ All deliverables (events, products, services) are listed as outputs
- ✓ All essential/important activities are listed
- ✓ All essential/important resources are listed as inputs

## 7. Another Tool from the RBM Toolbox: The Logical Analysis Framework (LogFrame)

Like the logic model, LogFrame is an analytical tool that can be used for all stages of a participatory program or project: design, planning, approval, monitoring, and evaluation. It also is a communication tool aimed at developing a common understanding of the program or project.

TABLE 4.2

LogFrame Structure

| **Narrative Summary** | **Expected Results** | **Performance Measurement** | **Assumptions, Critical Conditions, Risk Indicators** |
|---|---|---|---|
| Project goal (Program objective)<br>The high-level objective to which this project is intended to make a contribution. | Impact<br>A long-term developmental result at the societal level that is the logical consequence of achieving a specified combination of outcomes. | Performance indicators<br>Indicators that will provide evidence a contribution has been made to the achievement of the stated impact. | Assumptions<br>Necessary conditions for the cause-effect relationships between outcomes and impact to behave as expected.<br>Risk indicators<br>Indicators that measure the status of the assumptions identified above. |
| Project objective/ purpose<br>The objective which addresses the priority needs of the beneficiaries and is achievable within the scope of project activities. | Outcomes<br>Medium-term results benefiting an identified target population that are achievable within the project's time frame and are the logical consequence of achieving a specified combination of outputs. | Performance indicators<br>Performance indicators that will provide evidence that the project has achieved the stated developmental outcomes. | Assumptions<br>Necessary conditions for the cause-effect relationships between outputs and outcomes to behave as expected.<br>Risk indicators<br>Risk indicators that will measure the status of the assumptions identified above. |
| Resources<br>Inputs and activities to achieve the purpose; budget for each type of resource and total project budget. | Outputs<br>Short-term results produced by or for the benefit of project delivery partners that are the immediate consequences of project activities and inputs. | Performance indicators<br>To provide evidence that the project has achieved the stated outputs. | Assumptions<br>Necessary conditions for the cause-effect relationship between inputs and outputs to behave as expected.<br>Risk indicators<br>Risk indicators that will measure the status of the assumptions identified above. |

TABLE 4.3

## Performance Measurement Framework

| | Indicator | Data Sources | Collection Tools and Methods | Frequency | Responsibility | |
|---|---|---|---|---|---|---|
| | | | | | To Collect | To Analyse |
| **Impact** | | | | | | |
| **Outcome** | | | | | | |
| **Output** | | | | | | |
| **Activity** | | | | | | |
| **Inputs** | | | | | | |

TABLE 4.4

## Example of a LogFrame

Extracts from a tax modernization project funded by CIDA

| Goal | Expected Results and Impact | Performance Measurement | Assumptions and Critical Conditions |
|---|---|---|---|
| To generate a sustainable increase in the endogenous capacity of the state to satisfy the basic needs of its population and reduce poverty.<br><br>To contribute to a sustainable increase of internal tax revenues by assisting the state in:<br><br>a) reforming its tax administration;<br><br>b) reforming its tax legislation;<br><br>c) educating its population as to the relationship between government revenues and services, thereby encouraging voluntary compliance. | Tax laws better adapted to the needs and constraints of the country.<br><br>A more competent, transparent, effective and efficient tax administration.<br><br>Contribute to an improved understanding of public finance in civil society and increase its participation and influence over budgetary choices.<br><br>A larger and wider tax base.<br><br>A tax administration with improved capability to plan and implement revenue-generating operations, enforcement capability and governance.<br><br>A tax administration to develop well adapted legislation and policies.<br><br>Increased participation of civil society in the public debate over public finances. | | |

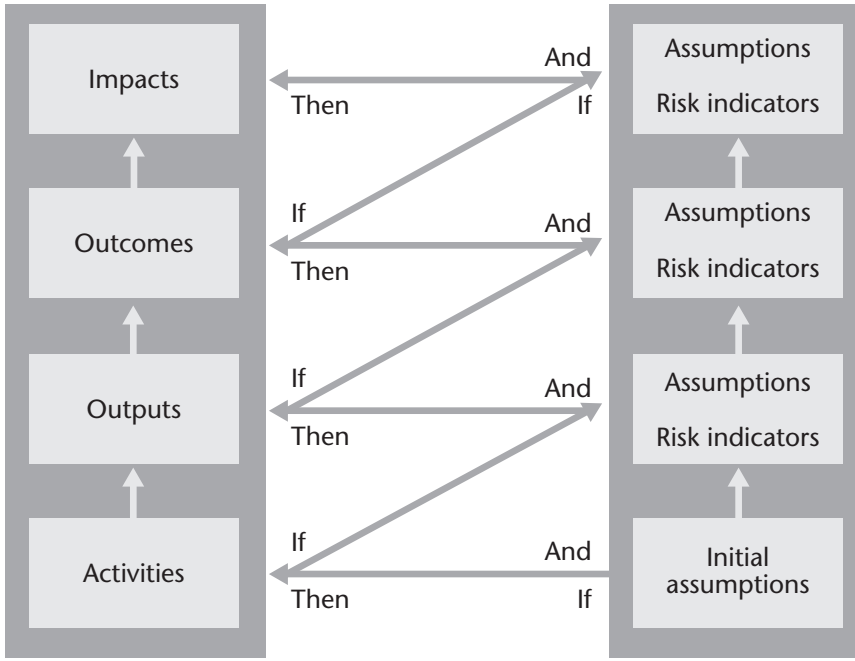
TABLE 4.4

## Example of a LogFrame (*continued*)

| **Resources** | **Expected Results, Outputs** | **Performance Measurement Indicators** | **Assumptions, Critical Conditions, and Risk Indicators** |
|---|---|---|---|
| HR<br><br>Project Director—Field<br><br>Project-team support services—subject matter experts (tax experts, economists, consultants, IT experts, jurists, communication experts, instructors, etc.)<br><br>Budget: $14M over 5 years | 1. Knowledge of tax potential and the impact of reform on the condition of women.<br><br>2. Proposed tax reform scenarios and their impact on revenues.<br><br>3. A tax administration (TA) able to develop effective tax legislation and policies.<br><br>4. Knowledge of legal framework and proposal for a modernized version.<br><br>5. A modern organizational structure to support an effective and efficient program delivery by the TA.<br><br>6. A proposed plan to build capacity in strategic management.<br><br>7. A pay and benefits system for the TA personnel that would be more compatible with a self-assessment system.<br><br>8. An operational computerized tax processing system. | – Various reports produced, including on gender equity.<br><br>– Reform proposal tabled.<br><br>– Competence of trained personnel (men and women).<br><br>– Analysis of strengths and weaknesses of existing framework. A proposal for a reformed framework.<br><br>– New TA organizational structure implemented.<br><br>– Existence of a strategic plan.<br><br>– A new pay and benefits system in place.<br><br>– All taxes are processed by computer system.<br><br>– Existence of relevant, up-to-date operations manuals. | 1. Senior management of Ministry of Finance actively support project objectives.<br><br>2. Potential beneficiaries are convinced and support the project.<br><br>3. Political, social and cultural context allows the achievement of deliverables, in particular the communication program.<br><br>4. Main technical and financial partners collaborate with project team.<br><br>5. Relevant economics and statistical data exist and are available.<br><br>6. TA personnel revenues are not adversely affected by new pay program. |

FIGURE 4.7

The External Logic in the LogFrame: Assumptions and Risk




## 7.1. The Logic in the LogFrame

Below are a few basic results related to truth tables establishing formal links between propositions.

Let P and Q be two propositions. P and Q are often linked by "or" (P or Q), sometimes by "and" (P and Q), sometimes by "implies" (P implies Q). A proposition P is either true (value 1) or false (value 0). P and non-P are mutually exclusive.

TABLE 4.5
Truth Table for P or Q (P∪Q)

| P | Q | P∪Q |
|---|---|---|
| 1 | 0 | 1 |
| 0 | 1 | 1 |
| 0 | 0 | 0 |
| 1 | 0 | 1 |

TABLE 4.6
Truth Table for P and Q (P∩Q)

| P | Q | P∩Q |
|---|---|---|
| 1 | 1 | 1 |
| 0 | 0 | 0 |
| 1 | 0 | 0 |
| 0 | 1 | 0 |

TABLE 4.7
Truth Table for P implies Q (P ⇨ Q)

| P | Q | P ⇨ Q |
|---|---|---|
| 1 | 1 | 1 |
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |

We cannot move up from activities to impact. We have to use the truth tables as we follow the three diagonals.

**First** Initial conditions will imply activities.

**Second** We must prove activities ⇨ output. For this to happen, establish activities. Then, prove that activities ⇨ output while controlling risks for output level.

1. Establish activities
2. Prove that activities ⇨ output and control 2nd-level risks

**Third**

1. Establish output: done
2. Prove that output ⇨ outcome and control 3rd-level risks

**Fourth**

1. Establish outcomes: done
2. Prove that outcomes ⇨ impact and control 4th-level risks

## 7.2. LogFrame Development Process

- Ensure participation of major stakeholders
- Establish "strategic" objectives
- Develop the logic model (results chain)
- Identify assumptions and risks
- Identify performance indicators for all levels of results
- Draft LogFrame
- Draft performance measurement framework
- "Evolve" model with stakeholders

CHAPTER

# FEASABILITY STUDIES

Luc Chaput and Lavagnon A. Ika

Results-based management (RBM) is a broad management strategy that is less used at the project design phase to manage for results than at the evaluation phase to account for results. This chapter reflects on a potential contribution of RBM to project design in order to improve identification of results and subsequent estimation of their cost at the project design phase. More specifically it brings back project benefits into the project design equation; suggests a "quick and dirty" approach to cost benefit estimation; and proposes a five-step method that includes an updated version of the logical framework, success criteria and factors, and very rough estimates of both project results' costs and benefits for "soft" types of projects.

## Introduction

Many people would plunge right into a project although it may start with fuzzy images of its results. Yet the results might be ill defined and those people could end up with a project that does not meet the true needs or that costs too much. With a formal project design document, project managers will define where they are going and how they will get there. Hence the importance of the project design phase or process in project management theory and practice. Early in the project life cycle, project

managers and sponsors would like to know what are the project's expected contribution to the business or organization strategy, its overall goal and specific objectives or results, as well as the expected costs and benefits. But forming a clear project strategy and getting a sound cost-and-benefit estimation remain major challenges for many project managers and sponsors, especially for "soft" projects.

Indeed, some might turn to cost benefit analysis (CBA) for estimation purposes. However, a full-fledged CBA with its underlying detailed and technocratic approach to project design has failed to deliver its promises and, most importantly, "does not necessarily add exactness beyond a simpler and rougher analysis" (see Ika and Lytvynov 2009). For that matter, some have suggested to refer to "quick and dirty" approaches to project design with simple and rough instead of detailed estimates of both project results' costs and benefits (*ibid.*). Others might turn to results-based management (RBM) as a broad management strategy or a performance management tool for results setting. Still, financial management of specific results is hardly established, and it is hard to associate a project's expected results with their anticipated costs. In particular, most of the times, project design suffers from a superficial identification of results and a lack of financial estimation of their costs. Projects are therefore set up without knowing what they exactly are expected to deliver and at what cost (*ibid.*).

This chapter aims at reflecting upon the potential contribution of RBM to project design and proposing a "results-based project design" approach that will improve the identification and cost estimation of results at the project design phase, especially for "soft" projects. In the first part, RBM is defined and its importance as a performance management solution at the project design phase is put forward. In the next section, the approach is presented as well as the underlying five-step process that shows how it can be implemented. Finally, a conclusion describes the approach's potential benefits and limitations.

## 1. RBM and Its Importance in the Project Design Phase

RBM has been central to efforts to improve public service delivery since the 1980s and was highlighted in Osborne and Gaebler's (1992) influential book *Reinventing Government*. Some authors would consider that RBM and performance management are one and the same. Others would see the latter as only a part of the former. In most organizations RBM may be used at three levels: organization-wide, division, and project. (Note that this paper is about RBM at the project level.) RBM can also be regarded as a

broad management strategy that performs two functions: internal, "when performance information is used in internal management processes with the aim of improving performance and achieving better results, this is often referred to as *managing-for-results*"; and, external, "when performance information is used for reporting to external stakeholder audiences, this is sometimes referred to as *accountability-for-results*" (see Ika and Lytvynov 2009). Some inconsistency in RBM use makes it a tool that is utilized more often at the evaluation phase, to demonstrate results, than at the design phase, to manage for results. Very often, the "forest" of broader development results cannot be seen behind the "trees" of performance indicators, and the evaluation of and reporting on performance targets can take up time from and endanger the more important job of results management (*ibid.*). Also this overemphasis on demonstrating results sets the eyes of project practitioners on types of results which can be easily measured and attributed, particularly in the case of "soft" projects. Attitudes such as "can't measure: shouldn't do" are detrimental to an idea that is deeply rooted into the RBM culture, that "what gets measured gets done" (*ibid.*). The problem with RBM is that it is currently too much accountability-for-results oriented and too little managing-for-results oriented, and there is a need to address the limitations of RBM and associated tools such as the logical framework. However, it is at the project design phase that project objectives or results are identified and project performance measurement tools are planned for; hence the need to reinforce the "management-for-results" side of RBM with specific tools that will address the above inconsistency.

## 2. The "Results-Based Project Design" Approach

Drawing insights from basic product management and performance management principles pioneered in business management and public administration, Ika and Lytvynov (2009) have attempted to outline the deficiencies of both project design and RBM, and proposed an updated version of the logical framework to include success criteria and factors, and very rough estimates of both project costs and benefits for specific types of projects and project results. Their approach employs "quick and dirty" techniques for the project design purposes; it is qualitative by essence; it is based on questions and judgmental estimates of benefits; and it stresses a flexible project design approach that is contingent on the nature of the project, be it an infrastructure-type or a change project. If they have singled out the international development industry sector, it is my profound belief that according to the underlying principles and their origins, the approach that they advocated can be applied to any soft project in any industry with

little adaptation. Instead of the United Nations Millennium Development Goals as the grand strategy, we would just consider the business or organizational strategy in place. I propose to call this a "results-based project design" approach, thereby outlining the links between RBM and project design. The RBPD approach brings back project benefits into the project design equation and estimation. It calls on project sponsors and managers to focus their attention on the most important level of project results for which rough cost-and-benefit estimates deserve to be performed. The RBPD approach (Figure 5.1) is a five-step process:

- **Step 1:** Project strategic fit and LogFrame
- **Step 2:** Specific objectives and options analysis
- **Step 3:** Costs of results
- **Step 4:** Benefits of results
- **Step 5:** Cost-benefit comparisons

How does the overall project fit with the organizational strategy and what are the organization's strategic goals, performance indicators, and targets? To answer those key questions, an updated version of the logical framework (LogFrame) (see Table 5.1 below) that includes project success criteria and factors is advisable (Step 1). The LogFrame plays a central role in the RBPD approach. At its first, rough approximation, some of the columns such as "Costs" and "Benefits" can be left blank and filled out when the information becomes available. In the next step, the specific objectives and options for the project are laid out (Step 2).

A bottom-up approach to the costs of results is then performed, including input, activity, output, and outcome costs (Step 3). Then the results benefits estimation, especially at the outcome level, is done using for example the "with-and-without" approach, the net social benefits approach, or the estimation-per-sector approach (Step 4). Finally, cost-benefit comparisons are made that might lead to some managerial considerations rather than to decisions, as the project, while being financially unfeasible, could be desired for other reasons (Step 5).

FIGURE 5.1

## The Results-Based Project Design Approach (adapted from Ika and Lytvynov, 2009)

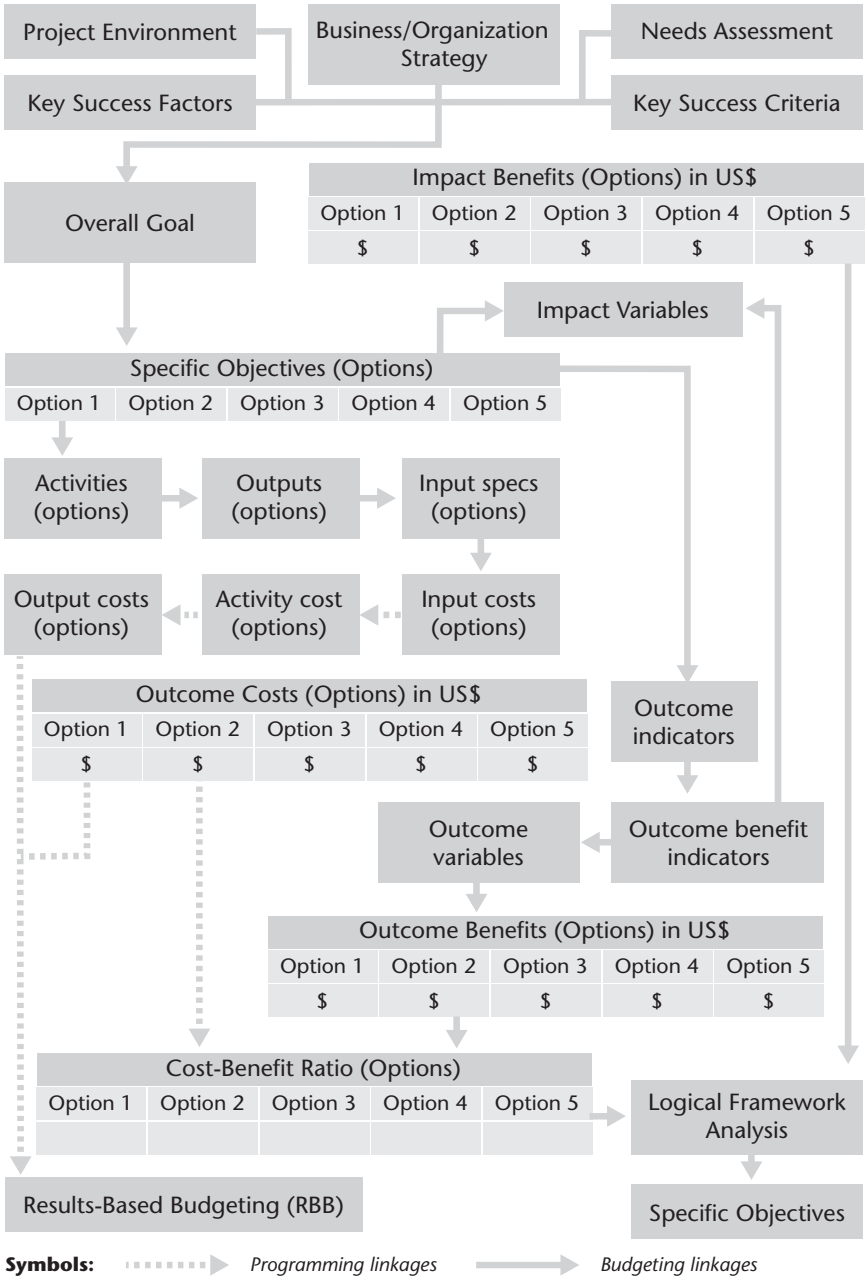


TABLE 5.1

Suggested LogFrame Matrix Format
(adapted from Ika and Lytvynov, 2009)

| | Project Summary Description | Indicators | Means of Verification | Influencing Factors (KSC, KSFs, assumptions, risks, etc.) | Costs, US$ | Benefits, US$ |
|---|---|---|---|---|---|---|
| **Impact** | | | | | | |
| **Outcomes** | | | | | | |
| **Outputs** | | | | | | |
| **Activities** | | | | | | |
| **Inputs** | | | | | | |

Section 1 suggests a "results-based project design" approach, especially for soft types of projects. As such it links RBM and project design to reinforce the "management-for-results" function of RBM at the project design phase, and proposes an updated version of the logical framework to include success criteria and factors, as well as very rough estimates of both project costs and benefits for specific types of projects and project results. The incorporation of the RBPD approach in the project design component of RBM involves a five-step process and is expected to yield cost-benefit comparisons at the project design phase in order to align the expected project benefits directly with the business/organization strategy. The RBPD is flexible enough to be suitable for different types of projects and fits well in today's project management settings, where considerations of strategic fit of projects with the organization are important.

The RBPD approach does have some limitations. First, as a "quick and dirty" approach, it is subjective when it comes to estimating benefits. Second, it might not be relevant for emergency or relief humanitarian projects that need to be implemented no matter what their benefits will cost.

## 3. The Feasability Process

The process described here is based upon M. Gould and A. Campbell's book *Designing Effective Organizations* (San Francisco: Jossey-Bass 2002).

We will expand upon the concept of fit drivers by adding the idea of an isomorphism and also other tests such as financial ones. We start by regrouping the usual contingency factors (size, human resources, technology, environment) into four sets:

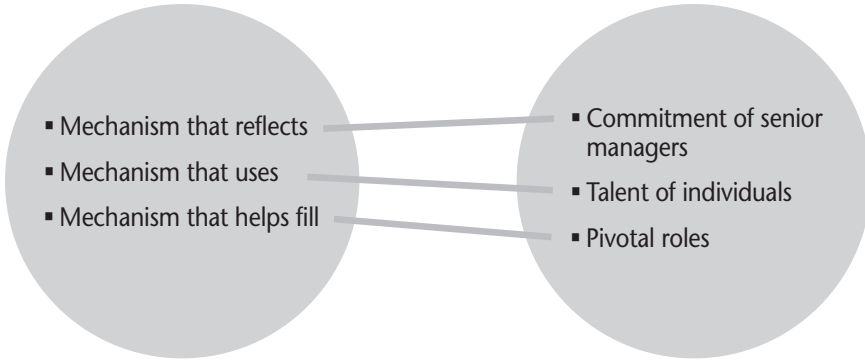
1) People
2) Product market strategies
3) Corporate strategies
4) Constraints

The constraints from the last set are the following: environmental, institutional, stakeholders, industry requirements, capital market demands, local culture, pressure groups, unions, IT capabilities, organization-wide skills. All of these constraints can be compiled into four groups: Environmental, Institutional, IT, Internal cultures and skills.

We are now ready to start the feasability process:

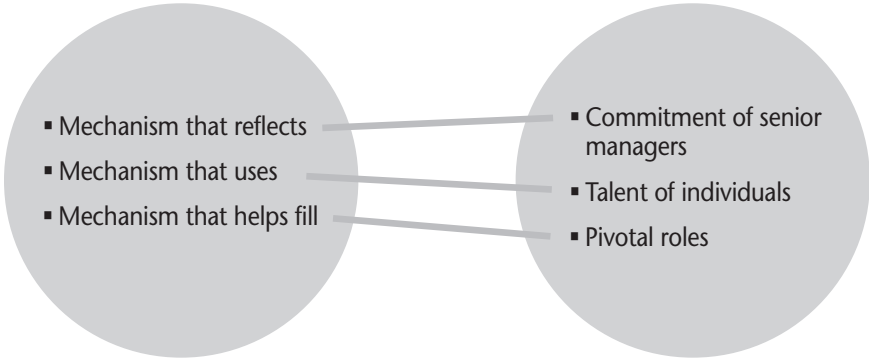
1) For each contingent set, establish a quality state fit with the design.
2) Improve these four primary fits with a series of tests and then validate the design framework.

## 4. People Fit



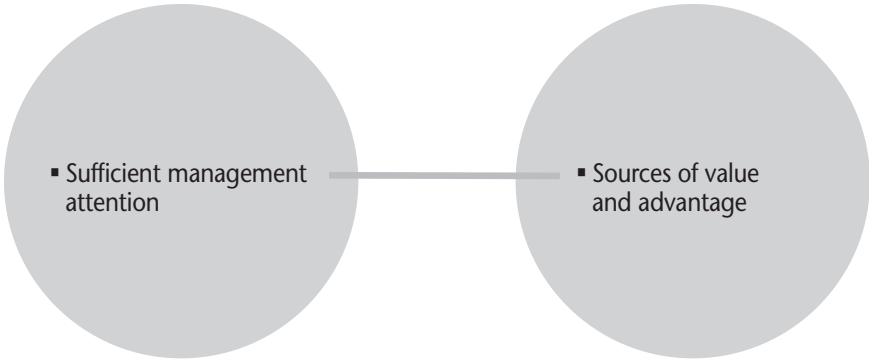

If there are links between the three elements in Design and the three elements in People, then there is a quality fit between People and Design.

## 5. Product-Market Strategies Fit



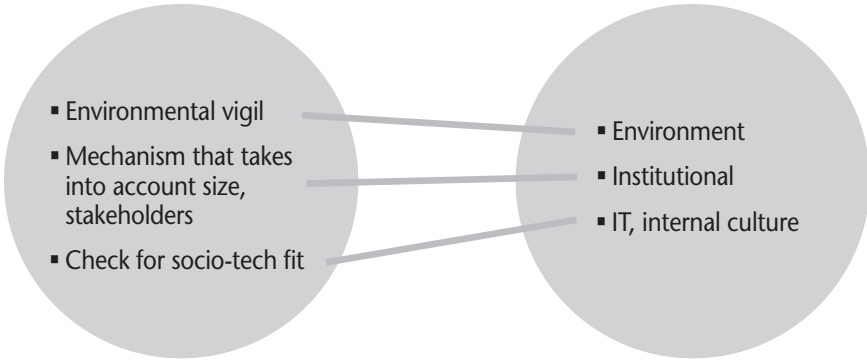

If there is a link between this element of Product-Market Strategies and that element of Design, then there is a quality fit between Product-Market Strategies and Design.

## 6. Corporate Strategies Fit




If there is a link between this element of Corporate Strategies and that element of Design, then there is a quality fit between Design and Corporate Strategies.

## 7. Constraints Fit




If there is a link between these three elements of Design and these three elements of Constraints then there is a quality fit between Design and Constraints.

## 8. The Design Framework

Given the People and Constraints (including strategies), are the objectives attained?

We now introduce a series of tests. The objectives are best attained when all the tests are answered positively.

## 9. Feasability Test

### 9.1. The Independence Test

The unit type needs a distinctive culture which is different from the institutional one. The design must change to accommodate the unit.

### 9.2. The Liaison Devices Test

The unit type will need a structure that cuts across functional boundaries.

It calls for a very sophisticated kind of coordination.

## 9.3. The Mandate Robustness Test

The mandatory/mandate/mandated trio forms the basis of the judicial process known as the subsidiary process; that is, normally, what can be decentralized should be. Therefore, the test is: if some responsibilities are kept by the mandatory, then that person has the skills and knowledge to accomplish the tasks.

## 9.4. The Harmony Test

Are there information systems that allow retroaction loops of the second and third kinds? This test helps decide if retroaction loops allow for a realignment of the objectives and/or value-added knowledge for the manager.

## 9.5. The Capacity-for-Change Test

In Chapter 2, we have seen the following relationship:
complexity ⇨ uncertainty ⇨ risk.

There are tests for measuring the impact of the environment's complexity on the organization's inner subsystems.

# 10. Some Mathematical Results Applied to Financial Feasability

## 10.1. The Expected Value and Variance of the Sum of Random Variables

$$E(x + Y) = E(X) + E(Y)$$

$$\text{Var}(X + Y) = V(X) + V(Y) + 2\,\text{Cov}\,(X, Y)$$

$$= V(X) + V(Y) + 2\,\rho\,\sigma_x\,\sigma_y$$

If X and Y are positively correlated, Cov (X, Y) and ρ are > 0, and V(X + Y) > V(X) + V(Y)

If X and Y are negatively correlated, Cov (X, Y) and ρ are < 0, and V(X + Y) < V(X) + V(Y)

$E[\alpha X + (1 - \alpha)Y] = \alpha E(X) + (1 - \alpha)E(Y)$ where $0 \leq \alpha \leq 1$

$Var[\alpha X + (1 - \alpha)Y] = \alpha^2 VAR(X) + (1 - \alpha)^2 VarY + 2\,\alpha(1 - \alpha)Cov(X, Y)$

| |
|---|
| Since $[\alpha^2(1 - \alpha^2)$ and $\alpha(1 - \alpha)$ are all fractions, $V[\alpha X + 1\ (1 - \alpha)Y]$ may be less than either V(X) or V(Y) even if Cov (X, Y) > 0. |
| This explain why some investors diversify their holdings even at lower expected returns. |

Let R = return on investment:

$R = \alpha X + (1 - \alpha)Y$

$VAR\ R = \alpha^2 VARX + (1 - \alpha)^2 VARY + 2\alpha(1 - \alpha)COVXY$

$$\frac{d}{d\alpha} VAR\ R = 2\alpha\sigma_1^2 - 2(1 - \alpha)\sigma_2^2 + (2 - 4\alpha)\sigma_{12} = 0$$

To optimize:

Put $\alpha = \dfrac{\sigma_2^2 - \sigma_{12}}{\sigma_1^2 + \sigma_2^2 - 2\sigma_{12}}$

## 10.2. Investment Decisions under Certainty

One thousand dollars today is worth more than $1,000 in the future. At yearly interest rate i, compounded annually, the future values of the investment at the end of years 1, 2, … n are $1{,}000(1+ i)$, $1{,}000\ (1+ i)^2$, … $1{,}000(1+ i)^n$.

If n = 3, i = 0.5.

$1{,}000\ (1 + 0.5)3 = \$1{,}157$

## 10.3. The Future Value of an Annuity

A series of $1 payments at the end of years 1, 2, … n

- Future value of annuity

  $= (1+i)^0 + (1+i)^1 + (1+i)^2 + \text{---}(1+i)^{n-1}$

  $= \dfrac{(1+i)^n - 1}{i}$

- Present value of annuity

$$= \frac{1}{(1+i)} + \frac{1}{(1+i)^2} + - - - - + \frac{1}{(1+i)^n}$$

$$= \frac{1-(1+i)^n}{i}$$

## 10.4. The Financial Evaluation of a Project: The Net Present Value Criterion

$$\text{NPV} = \frac{\text{M}^1}{(1+k)^1} + \frac{\text{M}^2}{(1+k)^2} + - - - - \frac{\text{M}^n}{(1+k)^n} - \text{I}$$

Where $M_1$ ----$M_n$ are monetary fluxes
k = rate required
n = number of periods
I = initial investment

Other techniques are the pay-back period and the internal rate of return (IRR).

$$\text{Pay-back period} = \frac{\text{I}}{\text{M}}$$

Where I = initial investment
M = annual monetary flux

The IRR is the rate such that

$$\frac{\text{M}_1}{(1+\text{IRR})^1} + \frac{\text{M}_2}{(1+\text{IRR})^2} + - - - - \frac{\text{M}_n}{(1+\text{IRR})^n} - \text{I} = 0$$

For independent projects:

If NPV > 0 then IRR > k
If NPV = 0 then IRR = k
If NPV < 0 then IRR < k

**Example: Purchase of a Printing Press**

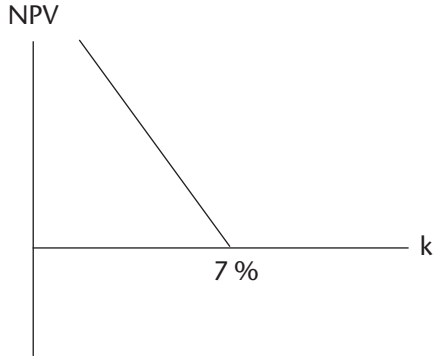
I = price = $4,100
Cash flow = $M_i$ = $1,000
k = 10%

$$\frac{M_1}{(1+k)^1} + \frac{M_2}{(1+k)^2}\frac{M_3}{(1+k)^3} + \frac{M_4}{(1+k)^4} + \frac{M_5}{(1+k)^5} - I$$

NPV = $3,790.79 – $4,100 = –$309.21

NPV is negative, so when is NPV = 0?

## NPV as a Function of Capital




IRR such that NPV = 0

IRR = 7%

## 10.5. Investment Decisions under Uncertainty

Selecting a portfolio where high expected return is desirable and uncertainty of return is undesirable:

R = overall return

$R = X_1R_1 + X_2R_2 + \ldots X_nR_n$

where $X_i$ is the fraction of total resources invested in security i and $R_i$ is the return from security i.

$E(R) = X_1E(R1) + \ldots X_nR_n$

$$= \sum_{i=1}^{n} X_i \; E(R_I = \sum_{i=1}^{n} X_i \; E(R_I) = u$$

$$V(R) = X_1^2\sigma_{11}^2 + - - - - X_n^2\sigma_{22}^2$$

$$+ 2X_1X_2\sigma_{12} + - - - - 2X_1X_n\sigma_1\sigma_n$$

$$+ \sum\sum X_i X_j \sigma_i \sigma_i = \sigma^2$$

Minimize $\sigma^2$ where

$$\sum_{i=1}^{n} X_i = 1$$

$x_i \geq 0$

## 10.6 The Variance-Covariance Matrix

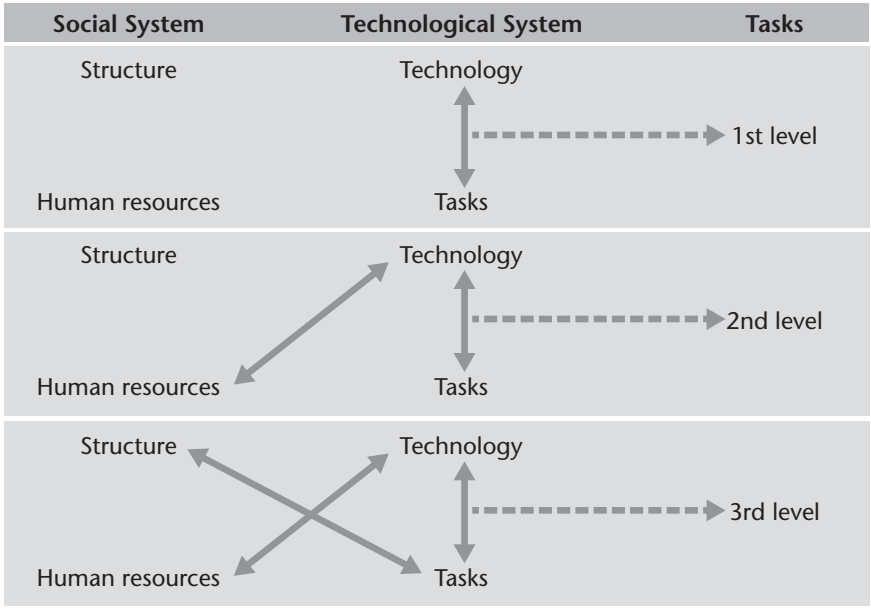
$$S = \begin{pmatrix} \sigma_1^2 \sigma_{12} \\ \sigma_{21} \sigma_2^2 \end{pmatrix}$$

and its associated risk

RISK = Absolute value of determinant of S

$$\text{Risk} = |\sigma_1^2\sigma_2^2 - \sigma_{12}^2|$$

## Change and Risk



CHAPTER

# ALIGNING PROJECTS WITH THE ORGANIZATION'S STRATEGY

Jan Saint-Macary

## 1. The Enlightened Project Manager

As we have seen throughout this book, project managers are typically entrusted with tasks that have clear beginnings, scopes, and ends: introducing a new product or service, building a bridge, updating the skills of a group of employees, implementing a new government regulation, or reengineering the way accounts receivable are handled.

Though varied in size and nature, these projects fall in one of two broad categories: they are intended to improve either an organization's *internal* processes, or its relationship with *external* groups, such as clients or suppliers. These are also the two realms of concern for the strategic management of the parent organization[1].

It should also be noted that none of these projects are ends in themselves. Rather, they are designed to serve their organizations' larger needs.

1. The organizational unit within which, or for which, the project will be carried out. This organizational unit may be the sponsor and/or the beneficiary of the project. For the sake of brevity, we will simply refer to it as "the organization."

Some projects come in tidy packages—clear deadlines (time), mandates (scope), and budgets (costs)—while others do not. In either case, the originally planned time, costs, and scope are likely to evolve, for if projects are about effecting change, they are not themselves immune to it. Of course, changes made to the time, costs, or scope of a project will directly affect its quality, and consequently its value to the organization.

When conflicts arise among a project's constraints, the project manager has to prioritize them and decide which one to "sacrifice." Indeed, sticking unwaveringly to an allotted budget, time, or scope may result into a technically successful, but organizationally useless project. Such was the case of Ford's Edsel, and is often the fate of software programs or events that are delivered on time, within budget, may even be critically acclaimed, and yet fail in the marketplace. Conversely, it is possible to be organizationally successful and yet not respect the constraints. Such is also the case of other software programs or events, and this certainly was what happened to Christopher Columbus, whose "discovery" of the new world brought untold riches to Spain and its crown, though he went over budget and time, and did not find a shorter route to the Indies as promised.

The same unexpected fate can happen to internal projects such as a training course for employees or the merger of two departments. Some projects that stay within the golden triangle of the three constraints are nonetheless viewed as failures, while others that break these constraints are hailed as successes. Clearly, the tacit yardstick for a project's success is often the extent to which it is aligned with the organization's overall strategy and contributes to it.

Consequently, project managers who know what higher strategic purpose is served by their projects are better equipped to deal with having to make unforeseen yet unavoidable changes. A "good" project manager may struggle to achieve a quality project within the given set constraints of costs, time, and scope, or make or request changes based on limited or dated information. An "excellent" project manager does much more, negotiating with sponsors and adjusting constraints to ensure that the organization's strategic needs are served as well as can be.

## 2. Understanding the Organization's Current Strategy

To achieve an optimal performance level, therefore, the project manager needs to understand the organization's strategy **as it relates to the organization's external environment.** First, this entails having a clear understanding of the organization's clients, value creation, and internal configuration. Specifically:

- *Who are the organization's clients?* In the broader strategic sense, an organization's "clients" include those who consume its products and services, of course, but also those who pay for them, as well as those who play an intermediary role in the acquisition process. For instance, the clients of a pharmacy such as Shoppers Drug Mart are *patients* (consumers, who may pay partially on in full), insurance companies (as payers), but also doctors or pharmacists (as prescribing intermediaries)[2]. Similarly, Costco's clients are small businesses (such as convenience stores that sell to consumers), as well as busy, urban middle-class families who want to save time and money. Good alignment with the consumers, payers, and intermediaries is key to these organizations' success. Accordingly, project managers should be guided by that knowledge as they carry out and make adjustments to projects in these organizations.
- *What value is created for the organization's clients?* In the case of Shoppers Drug Mart, for instance, this can be the convenience provided by the location of stores, the business hours, the quality of Internet access, the range of health and beauty products, the prices, or the knowledgeable staff. The value Costco offers its clients may be one-stop shopping for brand-name quality house products, at everyday low prices. The performance yardstick for a project conducted in these companies—as in any other—may be the extent to which it improves the organization's fit with the clients and suppliers in its external environment, or the internal efficiency of its operations. Since Shoppers Drug Mart's clients are not quite the same as Costco's and may have different expectations vis-à-vis these organizations, projects that increase internal efficiency may be more valuable at Costco, while those that improve customer knowledge and service may contribute more to Shoppers Drug Mart.
- *How is the organization configured to create and deliver the value it promises on a sustainable basis?* Clearly, an organization cannot merely "promise" low prices, fast delivery, coast-to-coast convenience, or any type of service. To back up its claim and fulfill its promise to the clients, it must have the right configuration of internal factors, that is, the right business model. In the case of Shoppers Drug Mart, this would be defined by the size of its network of stores, the integration of its database with that of its suppliers, or whether or not the chain offers its own brand or

2. One, two, or all three of these basic roles of a client—consumer, payer, and intermediary—may be played by a single person or organization, or shared among many agents, in various combinations.

no-name brand products. Costco's configuration, on the other hand, consists of low-cost, no-frills, large surface facilities, non-unionized workers, cash sales, and single credit card facilities. In every aspect, that organization is set up for high-volume production, using standardized, machine-like operations that are all geared for efficient handling and processing. Thanks to that high volume, Costco has a simplified supplier base from which it can get direct-to-store, just-in-time delivery. Consequently, projects that optimize Costco's "internal fitness" would add the most value to that organization.

## 3. Strategy Formation and Evolution

Organizational strategies also change with top managers' preferences and with external circumstances: a new chief executive officer can mean a new strategy, and a major change in the external environment may require or even impose a strategic response from the organization. In turn, projects will be needed to implement these shifts in strategic orientations. Thus, in addition to understanding the current strategy of their organization, as we have seen in the previous section, project managers also need to understand how these strategies were formed in the first place, and why and how they have been altered later on.

In the next paragraphs, we describe the process of strategy formation using the SWOT method. The general flow of the strategy formation process is shown next in Figure 6.1, while a step-by-step approach is presented in a two-page job aid at the end of this chapter (Figure 6.2). Of course, both the figure and the job aid are linear representations of a more complex and iterative process.

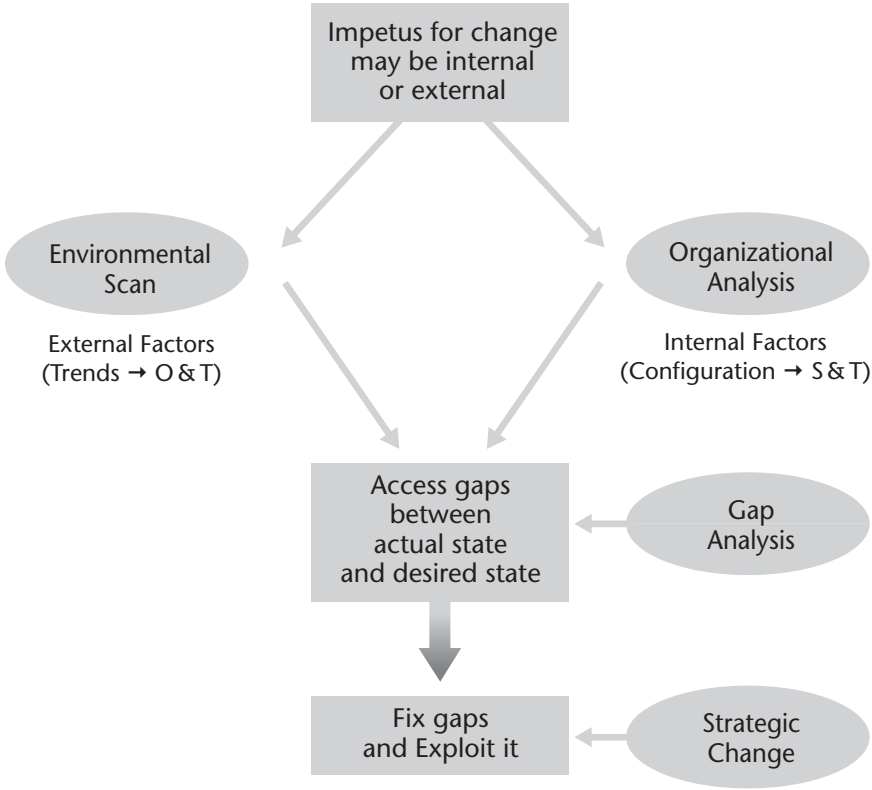
Since strategy defines how an organization relates to its environment, it is driven by its *internal* characteristics—its strengths and weaknesses (SW)—as well as by the *external* factors—opportunities and threats (OT) that arise in its environment (SWOT, for short). The internal characteristics of interest are those that clearly set the organization apart from others, as they support or impede its ability to function and compete. On the other side, the external factors comprise the political, economic, social, technological, ecological, and legal (PESTEL)[3] factors that shape and drive the organization's external environment as well as those of its commercial clients, suppliers, and competitors.

3. These external factors were previously discussed in Chapter 1.

In assessing a situation's SWOT, it is important to consider that an internal characteristic—such as having a lot of young employees—may be both a strength and a weakness. Similarly, an external factor—such as the deregulation of an industry—may represent both an opportunity and a threat. There should be little ambiguity, however, regarding the distinction between SW on one hand and OT on the other. Because strengths and weaknesses are internal, they are partially controlled by the organization. By the same token, since opportunities and threats are external to the organization, they are by and large beyond its reach. In fact, it is a defining characteristic of OT that they would exist even if the organization did not.

FIGURE 6.1

Overview of the Strategy Formation Process



To illustrate, we will formulate some potential strategies for an organization we will call the Western Provincial Bank (WPB), a thriving medium-sized community bank.

First we compare WPB to its competitors and underline its major distinctive strengths and weaknesses. Then we scan its external environment, using the PESTEL framework. Based on the major trends that are identified in the market and the financial institution's broad environment, we draw a list of major opportunities and threats that are relevant to that industrial sector. The results of the SWOT analysis are shown in Table 6.1.

TABLE 6.1

## The Western Provincial Bank's SW and the OT in Its Environment

| | | |
|---|---|---|
| **Internal Analysis** | **Strengths** | 1. Strong experience in personal, small-business and community-based banking<br>2. Deep social roots in the Western Provinces<br>3. Innovative and bold top management |
| | **Weaknesses** | 4. Distribution network limited to the West<br>5. Relatively limited financing sources<br>6. Limited experience in commercial banking |
| **External Analysis** | **Opportunities** | a. NAFTA, emerging markets, and greater integration in Latin America<br>b. Deregulation that allows expansion in other markets<br>c. Favourable legislation at the provincial level<br>d. Demographic growth well above national average |
| | **Threats** | e. Deregulation that also allows entry by foreign banks<br>f. Increasing competition from large conglomerates and non-banking institutions<br>g. Limited economic and technological growth domestically |

Potential strategies can then be formulated, based on this SWOT analysis, as shown in Table 6.2. In reading that table, a few points must be underscored.

- Strategies can be largely aggressive (see Type I), largely defensive (Type IV), or a mix of the two (Types II and III). Such choices reflect objective realities as well as top management's preferences.
- In any event, strategies cannot merely rest on external opportunities without taking into consideration WPB's internal strengths and weaknesses. Unless the financial institution is in a favourable position to take advantage of an opportunity, it may have to "pass," or face much higher implementation costs than better-positioned competitors.

TABLE 6.2

Generic Proactive and Defensive Strategies

| | Strengths | Weaknesses |
|---|---|---|
| **Opportunities** | I Propose strategies that are based on some strengths *and* take advantage of some opportunities | II Propose strategies that take advantage of some opportunities *and* allow the organization to overcome certain weaknesses |
| **Threats** | III Propose strategies that build on some strengths *and* protect the organization from certain threats | IV Propose strategies that allow the organization to avoid certain threats *and* overcome certain weaknesses |

The information that was compiled on WPB and its environment can then be used in a matrix, as a basis to formulate specific strategies for that bank, as shown in the following table.

TABLE 6.3

Potential Strategies for the Western Provincial Bank

| | Strengths | Weaknesses |
|---|---|---|
| **Opportunities** | I Expand community-based savings banks into Latin America (1, 3, a, b [see Table 6.1 above]) | II Make an alliance with other credit unions and caisses populaires throughout Canada (4, 5, e, d) |
| **Threats** | III Seek an alliance with a cash-rich company from a low-growth sector (3, f, e) | IV Focus on personal and small-business banking and retrench from non-banking activities (5, 6, e, f) |

## 4. Conclusion: Yet Another Final Word

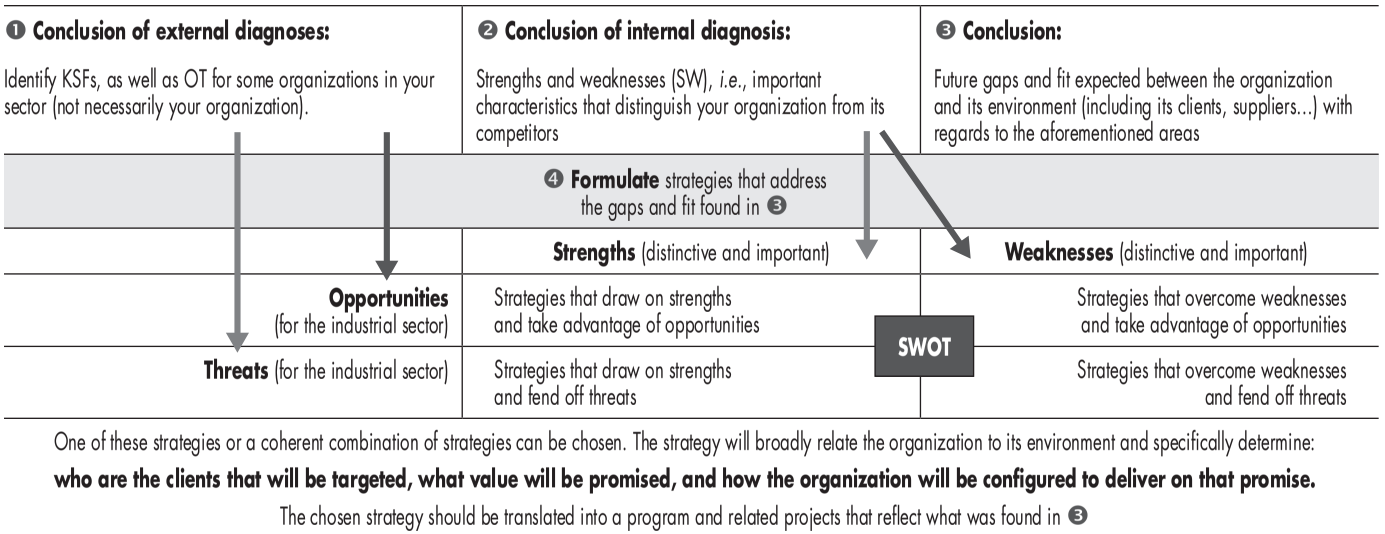
Project managers are trained to focus on what is next, keeping their hands firmly on the wheel and their nose to the ground. But as they negotiate the twists and turns of a project, it may be wiser and safer to look well ahead and remain aware of the larger picture.

This chapter has proffered tools for understanding the current strategy of the parent organization—its clients, its value creation and its internal configuration—as well as the underpinning forces that shape that strategy—the organization's SW, as well as its environment's OT. Such understanding can undoubtedly increase project managers' level of sophistication and broaden their personal perspectives. This will enable them to run and steer projects in a manner that is strategically sound, *i.e.*, aligned with the parent organization's global orientation.

FIGURE 6.2

## Job Aid: A Framework for Strategy Formulation and Subsequent Implementation through Programs and Projects

| **A viable strategy ensures the organization's harmonious fit with its environment and its internal fitness, over the long term** | | |
|---|---|---|
| ❶ **Scan** the parent organization's *relevant environment* for major trends and their consequences | ❷ **Analyse** and assess the organization's internal characteristics and configuration | ❸ **Compare** the diagnoses, *i.e.*, external fit ❶ and internal fitness ❷ |
| Assessment of the macro environment *(including the industrial sector as well as commercial clients, suppliers, and substitutes)*<br><br>Assessment of the industrial environment (for each industrial sector the organization is involved in) and identification of key success factors (KSFs) for each industrial sector *(what it takes to do well in a market)*<br><br>Method: **PESTEL** | Explain the organization's distinctive characteristics and strategy:<br>▸ Top management and stakeholders' profile and preferences<br>▸ Organization's current strategy:<br>▪ Who are its target groups *(profile)*?<br>▪ What is promised to clients and why do they really buy from the organization *(value added)*?<br>▪ How is the organization set up *(business model)*?<br><br>Method: **Benchmarking** *(comparison with key competitors)*<br>*Strengths and weaknesses must be distinctive and important* | Assess the fit and the gap between the organization and its environment on the following dimensions:<br>▸ Value creation for client and relationship with clients (consumers, payers, and intermediaries) and suppliers, etc.<br>▸ The industry's key success factors |


❶ Conclusion of external diagnoses:
Identify KSFs, as well as OT for some organizations in your sector (not necessarily your organization).
❷ Conclusion of internal diagnosis:
Strengths and weaknesses (SW), i.e., important characteristics that distinguish your organization from its competitors
❸ Conclusion:
Future gaps and fit expected between the organization and its environment (including its clients, suppliers...) with regards to the aforementioned areas
❹ Formulate strategies that address the gaps and fit found in ❸
Strengths (distinctive and important)
Weaknesses (distinctive and important)
Opportunities (for the industrial sector)
Strategies that draw on strengths and take advantage of opportunities
Strategies that overcome weaknesses and take advantage of opportunities
SWOT
Threats (for the industrial sector)
Strategies that draw on strengths and fend off threats
Strategies that overcome weaknesses and fend off threats
One of these strategies or a coherent combination of strategies can be chosen. The strategy will broadly relate the organization to its environment and specifically determine:
who are the clients that will be targeted, what value will be promised, and how the organization will be configured to deliver on that promise.
The chosen strategy should be translated into a program and related projects that reflect what was found in ❸

If you continue to view, design, and manage projects narrowly as before, then this chapter's essential purpose will have been lost. If, however, you feel tempted and empowered to look further ahead at the larger picture, then much will have been achieved. If you also feel that with so much at stake and so much to take into consideration, fellow project members should be involved in the quest to understand the larger picture—the parent organization's strategy—, then you are on the right track to achieve excellence in project design.

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