

Developing a Benchmark Approach to a Successful Change in Firms Strategies

*Navid Mollaei, Mahsa Damroudi

MBA Department, Graduate Studies Faculty, University of Science and Culture, Tehran, Iran
N.Mollaei@usc.ac.ir, M.Damroudi@usc.ac.ir

Abstract

The so rapid changes in the world make it too hard to predict the business environment in future. It causes some business owners not to do anything to avoid wrong choices whereas sustained success comes after searching opportunities. So, the important question of “What can we do to make our business survive and grow faster than competitors?” should be answered. It is also necessary to appropriately handle the change strategies in both poor and good times to have a well-run organization. Seeking out and copying the best products and methods has always been a usual way of life since the earliest human to modern organizations. For long-standing success and survival, the ability to translate the successful experience of one organization for the benefit of others needs a learning development for implementing the adaptation to each situation. The tool we suggest here to envelop both intra-organizational and inter-organizational learning (either from partners or from competitors) to implement a best practice effectively is benchmarking. In this paper we use a modified model of benchmarking (as an organizational learning tool) to propose how to make a learning organization for change strategies implementation.

Introduction

The so rapid changes in the world make it too hard to predict the business environment in future. It causes some business owners not to do anything to avoid wrong choices whereas sustained success comes after searching opportunities. So, the important question of “What can we do to make our business survive and grow faster than competitors?” should be answered. In this regard, we need a comprehensive tool to let us see and even foresee the novel upcoming situation. Otherwise, some terrible crisis will be inevitable as it is!

The current crisis that we are in, as an industry and as a nation, is not the only reason why organizations should focus on change management. It is also necessary to appropriately handle the change strategies in both poor and good times to have a well-run organization. According to David Axson, seeking out and copying the best products and methods has always been a usual way of life since the earliest human to modern organizations (Axson, 2006). For long-standing success and survival, the ability to translate the successful experience of one organization for the benefit of others needs a learning development for implementing the adaptation to each situation. The tool we suggest here to envelop both intra-organizational and inter-organizational learning (either from partners or from competitors) to implement a best practice effectively is benchmarking.

To ensure positive changes are happening to organizations, managers should consider resistance to change and lack of a clear understanding of the change being made. Educating

individuals about new ways of operations in novel situations leads to a durable commitment but if the resistances continue to exist, Achieving change is an impossible process, especially when time is not on your side.

Literature review

Benchmarking

Traditionally, companies with all of their components of business models working together can often achieve long-lasting success (Johnston & Bate, 2003, p. 3). It is often stated that those who benchmark do not have to reinvent the wheel (Parker, 1996).

Benchmarking is not just making changes and improvements for the sake of making a change, benchmarking is about adding value. No organization should make changes to their products, processes, or their organization if the changes do not bring benefits (Mollaee, Rahimi, & Tavassoli, 2009). Benchmarking is not just about comparing data or copying your competitors. Benchmarking is more about continuously learning from others, learning more about your organization strength and weaknesses in the process and then acting on the lessons learned (Camp, 2006). This is what leads to real improvement. Benchmarking is a means to an end, not an end in itself.

Background on benchmarking

Benchmarking can be called the management tool that revived Xerox. Xerox defines benchmarking as the “continuous process measuring our products, services, and practices against our toughest competitors or those companies recognized as leaders (Camp, 2006). The Xerox of today is not the Xerox of the sixties and seventies. During that time period the organization experienced market erosion from competitors, primarily Japanese. These competitors were marketing higher quality products in the United States at the same price or lower as Xerox. Xerox found that the Japanese were able to assemble quality products at a low price. This was hard for Xerox to grasp because they were the first to develop the photocopy and their name had come to be synonymous with photocopies. How could the Japanese be beating them at their own game? Xerox found that they had to regroup. In doing this they used reverse engineering and made competitive benchmarking a fundamental part of their operations by the early eighties. Xerox began to study other organizations within and out of their industry.

By 1983, Xerox had benchmarked more than 230 process performance areas in their operation. They looked at all aspects of their business. Identifying the best processes used by others, Xerox adapted them for their own use. This is how they regained their core competency and strategic advantage in the photocopying industry (Bogan, 1994).

Since the first publication on benchmarking in 1989 by Robert C. Camp of “Benchmarking: The search for Industry Best Practices that Lead to Superior Performance”, the improvement technique benchmarking has been established as an important tool in the process focused manufacturing or production environment. The use of benchmarking has expanded to other types of industry.

What is benchmarking?

Benchmarking is basically learning from others. It is using the knowledge and the experience of others to improve the organization. It is analyzing the performance and noting the strengths and weaknesses of the organization and assessing what must be done to improve. A

vast number of publications exist on benchmarking with no agreed upon definition of the term benchmarking.

Bendell, Boulter and Kelly (1993) write: "Today, quite clearly, the term is ambiguous, woolly, a mystery. It appears to require great subtlety of understanding and clearly means different things to different people." (Bendell, Boutler, & Kelly, 1993)

The absence of a simple definition that is accepted as the real one, leads Carey (1995) to take the key points from a number of definitions and express them stepwise in the following clear terms:

- The methodology of examining in detail something your organization does (the performance measures and practices).
- Then comparing it with a similar process being performed more efficiently and effectively in your own or another organization.
- With the objective of finding ways of making significant improvements to your own process.

Andersen and Pettersen (1996) write: "The process of continuously measuring and comparing one's business processes against comparable processes in leading organizations to obtain information that will help the organization identify and implement improvements."⁷

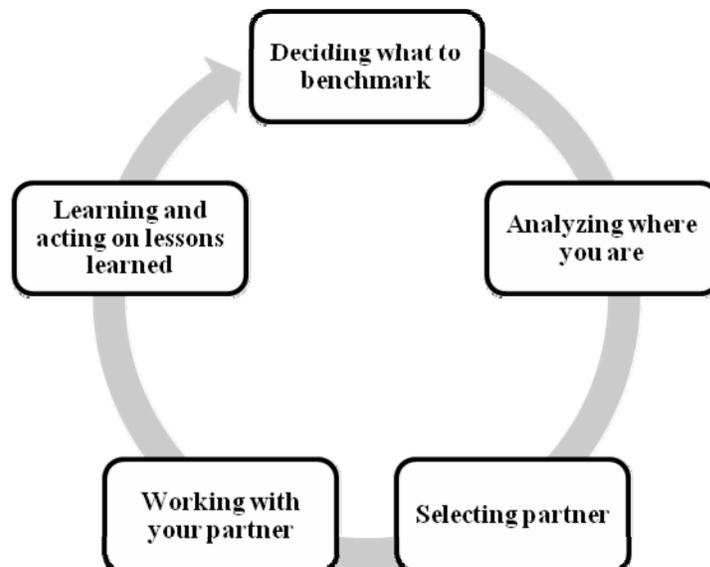
How to apply benchmarking?

Benchmarking is a five-step cycle aimed at ensuring continuous improvement, fig. 1. Each step is described briefly (Mollae, & Rahimi, 2009);

Figure 1: Five-step cycle of benchmarking

STEP

1:



Deciding what to benchmark

You can apply benchmarking to any aspect of business. It makes sense to prioritize. Benchmarking allows real improvement to be made as you examine what goes on and how it could be done better. Processes may be at workplace level (operations) or management level (strategies). Strategic level benchmarking work can be led by or involve various people, for example managers, company representatives or trade association representatives. You will need both senior management and employee commitment and involvement at all key stages. At this level, organizations start out with few assumptions about the business itself, what it is "good" at, and what the future will be like.

STEP 2: Analyzing where you are

You need to identify your starting position. You need to think about how you will Measure where you are and where you want to be. This will help you measure your improvement from benchmarking. If you use an audit system you could use your results (sometimes these are ‘scores’) as a measure. Later you could compare your results with others who use the same system. As part of this process, you may choose to survey employees to find out what they think.

In particular, we use Balanced Score Card (BSC) to compare the results with objectives. After a mission has been defined and a SWOT (strengths, weaknesses, opportunities and threats) analysis is completed, an organization can then define its measures, goals, strategies, etc.

STEP 3: Selecting partner

If you are part of a large organization you could find partners both within your organization (internal benchmarking) and outside (external benchmarking). Smaller organizations will probably need to look outside, as they are too small to have a wide range of potential partners to choose from inside their firms. The chart shows the advantages and disadvantages of both approaches.

Table 1: Advantages and Disadvantages of Internal & External Benchmarking

	Internal	External
Advantages	<ul style="list-style-type: none"> ● Easier to get information and therefore cheaper ● Improves consistency within firm ● Help to improve communication and information sharing ● Easier to get management commitment ● Good practice of technique before looking for an outside organization 	<p>With competitors;</p> <ul style="list-style-type: none"> ● Easy to identify partners ● Help your competitive edge ● Use as a marketing feature if you are the ‘Benchmark’ <p>Within the same industry;</p> <ul style="list-style-type: none"> ● often links already exist with potential partners ● speak the same language; share issues and concerns <p>Different Industry;</p> <ul style="list-style-type: none"> ● potential for innovative ideas ● No competitor problems

Disadvantages	<ul style="list-style-type: none"> ● Doesn't identify overall best practice ● Can be 'blinker' 	<p>With competitors;</p> <ul style="list-style-type: none"> ● Care needed with competition law ● some potential partner maybe resistant <p>Different Industry;</p> <ul style="list-style-type: none"> ● Can be difficult to identify potential partners
---------------	--	--

You may choose to work with one partner or a number of them. You could join a benchmarking club where you will have a range of potential partners to choose from. Your trade association or benchmarking organizations sometimes offer this service. You can use different ways to find partners. For management processes you will have a wider choice of partners, as these processes are common across industries. When you agree a partnership there needs to be mutual benefit - 'give and take '. You should be prepared to give your partner something in return. You should also be aware of the Benchmarking Code of Conduct and check you work within it. This is particularly important if you are planning to benchmark with a competitor, as it will help to ensure you keep within competition law (Boxwel, 2007).

Decide whether you will need to visit your partner's work place. Sharing information by phone may be enough. It is usually best to meet, so you can see for yourself, and talk to relevant people. If you decide to visit, involve your managers and safety representatives in the visit because they are the ones who will be helping to put in place any improvements you identify.

STEP 4: Working with your partner

With the right planning and preparation (Steps 1 to 3), this stage should be straight forward.

- Be realistic - don't try to do too much in one go.
- When exchanging information you need to make sure it's comparable - 'apple with apples'. For example, you may try to compare statistics, but if you record this data in different ways it won't be a valid comparison.
- 'Respect your partner'. Remember confidentiality, give and take equally, keep to agreed topics, do your homework in advance, show awareness of the Benchmarking Code of Conduct, keep to timescales and send a message of thanks.

During contact with partners make sure you really understand what they do, how they do it and why it's better. This is the information you will need to learn. Rather than focus on modest improvements, benchmarking focuses on making major structural changes to everyday with the goal of substantially improving productivity, efficiency, quality or customer satisfaction.

STEP 5: Learning and acting on lessons learned

This is a key step - if you don't get this right, all the work you've done so far will be lost! Remember the purpose of benchmarking is not to copy but to learn from others, learn more about yourself and, as a result, take action to improve. Devise an action plan, based on your findings. It's important to make sure your plan fits in with the 'culture' of your organization otherwise, the plan doomed to failure. Your partner may have a very different culture, and the language and methods they use may need to be adapted for your organization. Make your action plan SMARTT (Specific, Measurable, Agreed, Realistic Track able and Time bound).

Identify what you need to do, who should do it and when. Make sure you get senior management and employee commitment to the action plan. Implement your action plan and regularly review progress with it. Are you where you want to be? If there are problems it may be useful to contact your partner(s) again to see if they can help you overcome them. Remember continuous improvement – keep an eye out to see if standards have moved on. If they have, reset your benchmark and you can start from Step 1 again. As in any other area of business, you shouldn't stand still.

Change Strategy

Goals focus on what, while strategies focus on how

The term “strategy” has been used for years in military planning and tactics in wars. Nowadays business strategy is so popular that it seems to be the secret of being successful. Although managers who have planned strategy can't always be seen at the zenith of their business but there is evidence to show that organizations which undertake strategic planning do tend to perform better than those who don't. Fred. R. David (2007) defines strategy as “the means by which long-term objectives will be achieved”. He also states that “strategies are potential actions that require top management decisions and large amount of firm's resources”. According to Chris Jeffs (2008) “business strategy is the management of organisation's resources and competences in order to match the aim of the organisation and the threats and opportunities in the environment”. He also considers strategy as interdisciplinary subjects to encourage practitioners make use of other knowledge such as finance, marketing, supply chain logistic and human resource management.

There is a debate about whether business strategy is a science or an art. One who reviews the development of strategic management can find that the initial focus on scientific method of management has led to a rational perspective in analyzing the environment. During the 1980s and dramatic change in the world economy nature some flexible approaches whose emphasis was more on internal potentials to make the old approaches consistent with unforeseen events was developed.

What makes strategy so valuable for managers is the belief that strategy has to do several things simultaneously. Considering strategy as a purposeful attempt to achieve an objective, these items has identified by Anne Sigismund Huff and others (2009);

- Communicate a compelling purpose or vision to others
- Connect organizational strengths with environmental opportunities
- Exploit current success while exploring new opportunities
- Generate more resources than it uses
- Coordinate and guide activities
- Respond to new conditions over time

Different approaches toward changes

As mentioned in different changes theories, we have 3 general approaches to change:

- Change strategies as adaption or selection: looking at change from the outside
- Change strategies as transportation and evolution: looking at change from above
- Change strategies as natural evolution or social dynamics: looking at change from inside

Change strategies as adaption or selection

From the post World War II to the late 1970s changes was deliberately mentioned as growth and development in an optimistic view. As Demerse (2007) says; “During that period, change is more or less explicitly conceived as a process of gradual adaptation. Except for a small group of scholars who view change as emergent, the dominant view is that adaptation is largely controlled by management reacting to either internal or external pressure”. In the other words there is a belief that everything is possible. “Growth is therefore seen as the normal evolutionary path for organization, because larger size is associated with economies of scale, higher profits, and higher survival rates, as well as more prestige, power and job security for executives. But among researchers who explain organizational development and growth in term of internal forces there are three trends.” (Demers, 2007, p. 5)

First there is a group of theories that called rational adaptation approaches. These theories focus on organizational change in very different from one perspective to another but they all agree that organizations can change to pursue goals that are adaptive. The second approach is Organic adaptation. Cyert and March (1963), characterizing the firm as adaptively rational system rather than omnisciently rational system, propose a decision process theory that seeks to explain how organizations adapt. The last approach is life-cycle theory that developed by Cameron & whetten (1993), Chandler (1962) and Stopford & wells (1972). The life-cycle model gains popularity in organization and management theory in the early 1970s. In this theory change is a progressive, natural evolution through a series of fundamental transitions from birth to adolescence. This period of optimism ends with a recession brought about according to most accounts, by the 1973 oil embargo. Two approaches stand out as being particularly important (Demers, 2007, pp. 5-19): population ecology (Aldrich, 1979; Hannan & Freeman, 1977, 1984) and neo institutional theory (DiMaggio & Powell, 1983; Meyer & Rowan, 1977).

Change strategies as transportation and evolution

In 1980s real change is seen as a period of discontinuity, of disruption; it is talked about in terms of transformation and revolution. There is recognition that change does not always follow a path of cumulative, gradual adaptation; episodes of transformation and radical change now take center stage. During this period more attention is given to defining what a transformation and radical change is, as opposed to an incremental or gradual change, to examining the process by which such a change is realized. This shift in tone occurs while environmental uncertainty and turbulence initiated by the 1970s oil crisis. There are four approaches to change in this view (Demers, 2007, pp. 43-58); configurational, cognitive, cultural and political approach.

The configurational approach displaced contingency theory as the dominant perspective in the literature on change in the 1980s. This perspective explores the concept of radical change, in term of both its content and dynamics. Cognitive and cultural approaches view organization as archetype or integrated wholes. This conception reinforces the monolithic top-down view of change as a radical transformation. Thus, the cognitive school draws attention to the importance of transforming the worldview of organizational members, starting with top management, to achieve profound change. According to cultural approach, fundamental change involves a deliberate attempt by management to change the basic, taken-for granted assumptions and values that guide collective action. And finally the authors of the political view, who adapt a managerial point of view, consider that organizations are pluralistic entities and change process leading to radical change as piecemeal and incremental.

Change strategies as natural evolution or social dynamics

At the end the 1980s, alongside the dominant conception of change as an episode, a view of change as process without clear beginning or end became increasingly prevalent. In fact the opposition between continuity and change itself starts to be questioned. With globalization, due among other factors to the advent of new information technologies, there comes an acceleration of economic cycles driven by fierce competition. The transformation of the world economy results in layoffs and increasing insecurity in western world. New organizational forms, labeled the virtual, modular, or postmodern organization, are heralded as providing the flexibility required to succeed in this new era. In this context the process view of organizational change take center stage. While a preoccupation with the link between strategy and environment remains strong, strategic change starts being viewed less as a matter of radical transformation than as a long term process of organizational renewal, often defined in terms of learning and associated with innovation. The idea promoted is that change is not only something that is done to the organization by visionary manager; rather, it is something that the organization does itself, in which all members are involved.

From the 1990s, the topic of change including anything concerned with organizational process is subsumed under variety of labels, such as learning, evolving, innovating, narrating and etc. Under these labels approaches are presented that look at organizational change as behavioral learning, evolving, and emerging. In the behavioral or adaptive learning approach developed by March and his colleagues, the generative mechanism is behavior modification as a result of experience. In contrast to the cognitive approach, which describes organizational learning as a change in the dominant coalition's mental frameworks, organizations are conceived as adaptive systems that learn from trial and error and that encode and retain learning in routines.

Organizational learning is without doubt the success story of the 1990s. In this view, organizations are adaptively rational systems directed toward the attainment of goals, whose behavior is generated by rules and procedures that allow them to react to performance feedback. Performance feedback rules - problem –driven search and choice rules – are the basic building blocks of organizations as experimental learning systems. In other words experience leads organizations to develop relatively fixed rules that allow for considerable changes in behaviors. (Demers, 2007, pp. 115-123)

How learning embodies the change?

Organizational learning

The field of organizational learning explores ways to design organizations so that they fulfill their function effectively, encourage people to reach their full potential, and, at the same time, help the world to be a better place. Before proposing organizational learning main approaches, it's necessary to mean what is the concept of learning in the organizational literature.

Learning, we propose, is the process of technical change achieved by diffusion (in the perspective of technology absorption) and incremental innovation. In other words, learning is the absorption of already existing techniques, i.e., the absorption of innovations produced elsewhere, and the generation of improvements in the vicinity of acquired techniques (Viotti, 2001). Learning is best described through the 'learning organization' concept, which Senge (1992, p. 14) describes as 'an organization that is continually expanding its capacity to create its future'. Generally, one can distinguish between two different processes of organizational change that are associated with organizational learning (OL): adaptive learning and proactive learning.

Adaptive learning it is assumed to involve a lower degree of organizational change. It is seen as a process of incremental changes, more automatic and less cognitively induced. The limitations of adaptive learning in comparing to proactive learning are also expressed by the different labels which have been used to describe these two types of OL: “Single-Loop versus Double-Loop Learning” (Argyris and Schn, 1978), “Adaptive versus Generative Learning” (Senge, 1990).

Cognitive learning turned to the individual's mental processes. In other words, it is concerned with cognition: the act or process of knowing. It was regarding to residing in the heads of individuals; social, cultural, and technological factors have been relegated to the role of backdrops or external sources of stimulation (Salomon, 1993, p. xii)

Balanced Scorecard (BSC)

In response to the question “how balanced scorecard companies thrive in the new business environment”, Robert S. Kaplan and David P. Norton (2001) in their book, “Strategy-Focused Organization” explain that how Adopters of Balance Scorecard throughout the world include large and small, manufacturing and service, mature and rapid-growth, public and private, and for-profit and not-for-profit organizations achieved remarkable results. Many evidences from companies like Mobil Oil Corporation’s North America Marketing and Refining Division (Mobil NAM&R), CIGNA Corporation’s Property & Casualty Insurance, Chemical (chase) Retail Bank, Nova Scotia Power Inc, and Brown & Root Energy Services’ Rockwater Division and others can be regarded as a reasonable proof for their claim that this program is really a change project.

They believed that one main reason for organizations that had difficulty implementing well-formulated strategies was that strategies – the unique and sustainable ways by which organizations create value – are changing but the tools for measuring strategies have not kept pace. To overcome this problem, they suggested a new approach to managing a strategy-focused organization. The balanced scorecard provided a framework to look at the strategy used for value creation from four different perspectives (Kaplan & Norton, 2001):

1. Financial - the strategy for growth, profitability, and risk viewed from the perspective of shareholder.
2. Customer – the strategy for creating value and differentiation from the perspective of the customer.
3. Internal business processes – the strategic priorities for various business processes, which create customer and shareholder satisfaction.
4. Learning and growth – the priorities to create the climate that supports organizational change, innovation and growth.

We believe that the most important perspective to make a better understanding of the strategy and hence provide long term competitive advantage and profitability is the last one. That’s why the learning and growth perspective serve as the foundation for strategies in different types of organizations. If the strategy focused organization use the balanced scorecard, strategy improvement will be possible rather than tactics, by a new feedback system and learning method.

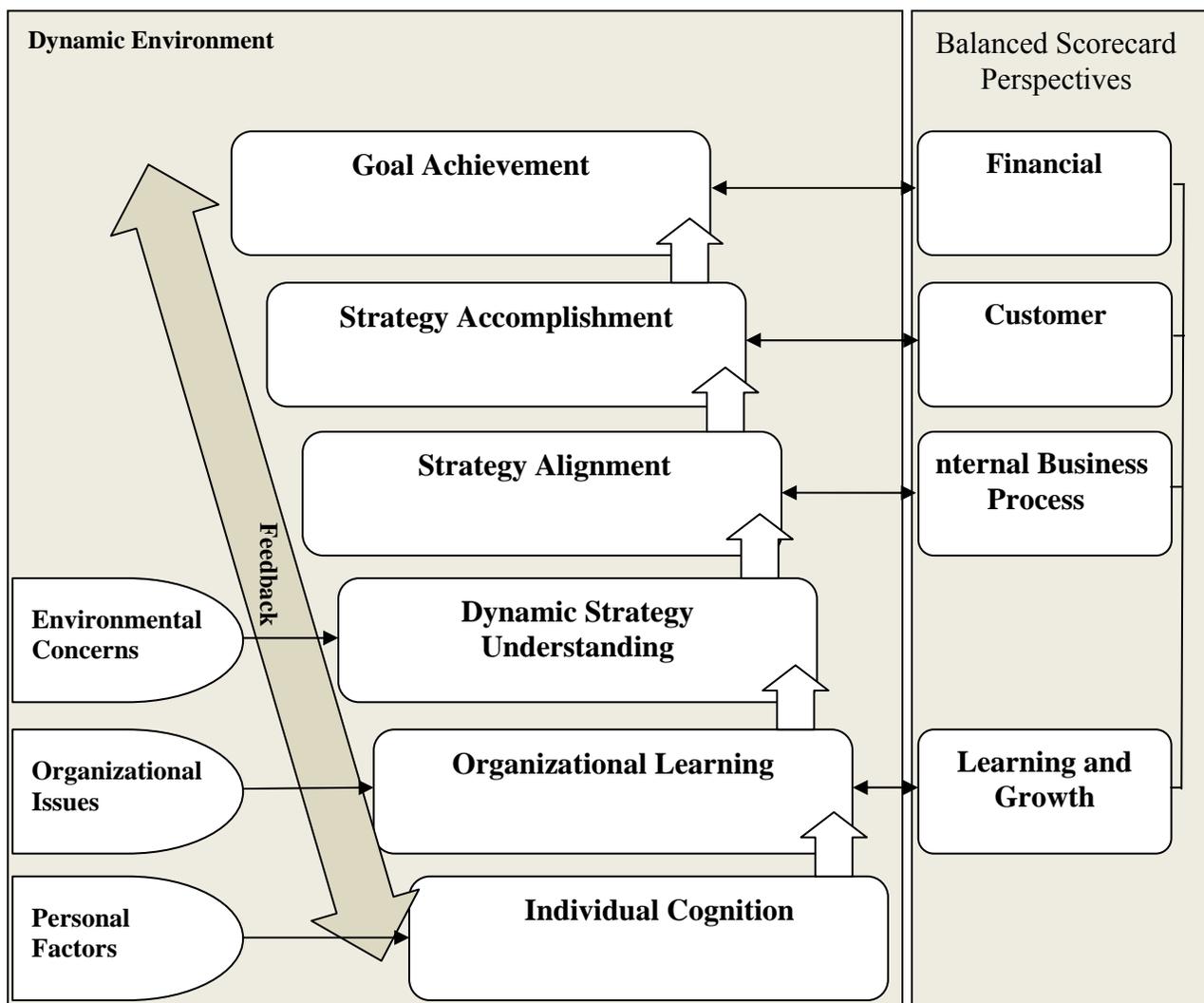
A modified model for successful strategy accomplishment

We suggest that learning is the best starting point to achieve a long term, sustainable change strategy. Maybe the low consensus about defining and proposing a model makes it harder to address. A genius design of a model which connect learning strategies to other elements offer an opportunity for executives to align their limited organizational resources including human

resources, financial resources, information technology and so on. What is proposed here, take a look at Balanced Scorecard as a necessary but not sufficient tool in its first perspective; Learning and Growth!

A nearer look to the organization reveals that managers have to deal with human behaviors. Although there is usually one person in charge, the managers interact with others in problem solving. So we have to start our course of action from individuals. The process of decision making in an uncertain dynamic environment, where the information are ambiguous and incomplete about future, requires cognition as defined by Stephen K. Reed (2007) as both the acquisition and the use of knowledge. Organizational learning as discussed before includes cognitive learning. Contrasting to the personal life decisions that we all face, organizational goals will guide the group decision making. Some factors like threatening mistakes, competing goals, and changing environment makes it necessary to improve the strategy over the time and hence a dynamic strategy will exist. With both individual cognition and systemic organizational learning, it is likely to have a better perception on what the organization is intended to do; what is labeled as dynamic strategy understanding.

Modified Model for Strategy Implementation



Creating synergy is also important to find valuable combination in which the whole is greater than the sum of its parts. By strategy alignment, cooperation and coordination of different Strategic Business Units (SBU's), more integrated solutions will be found to enhance strategy accomplishment. Finally there is a considerable need for feedbacks. Strategy awareness (internal adaptation) and making adjustment to business ever-changing environment can never occur except to have an immediate feedback system. What you can find as a double-loop learning system in related literatures is covered here. By the wide-ranging feedback system a direct communication make the analysis of happenings easier to perform and understand, participation of different organizational level will be enhanced, the budget and resource allocation will be adjusted corresponding to the dynamic environment, and finally goal achievement will be measured simultaneously.

Conclusion

Strategy is a matter of concern for managers. In the rapid changing environment it's impossible for organizations to adapt the environmental uncertainty. On the other hand if the organizations choose a strategy, they will need to provide a clear understanding of strategies to align its resources directed to the goal achievement. What we proposed in this paper is a modified model for strategy implementation. Our findings show that Balanced Scorecard chooses a proper foundation, but it should be considered that individual cognition stands before organizational learning.

A better understanding of strategy needs both personal cognition and organizational level perception of happenings. It is also a must to have a dynamic strategy in changing environment. If the strategy does not meet the early objectives defined in strategy map, it should be adjusted corresponding to the external and internal alteration. By a wide-ranging comprehension of strategy, aligning resources leads to a great accomplishment. What is planned as feedback has a key role in overall awareness. It makes learning a continuous process which spreads all over the organization. Using this modified model managers can ensure they set genius strategies which works both in poor and good times to have a long standing well-run organizations.

Reference

- Axson, D. A. J., (2006). Best practices in business performance management: from data to decisions. New York: John Wiley & Sons, p. 59.
- Johnston, Jr. RE., & Bate, JD. (2003). The power of strategy innovation: a new way of linking creativity and strategic planning to discover great business opportunities. 3. New York: AMACOM;
- Parker, S. (1996). Measuring up: Size is No Obstacle to Benchmarking for Competitive Advantage, Rochester Business Journal, 8.
- Mollae, N., Rahimi, R., & Tavassoli, S. (2009). Conforming Benchmarking to Project Management. Proceeding book of the 5th International Conference on Innovation and management, UNU-MERIT, Maastricht, pp. 526–534.
- Camp R. C. S. (2006). Benchmarking: The Search for Industry Best Practices That Lead to Superior Performance, Productivity Pr Inc.
- Bogan, C. (1994). Benchmarking Best Practices, McGraw Hill.

- Bendell, T., Boulter, L., & Kelly, J. (1993). *Benchmarking for Competitive Advantage*, London: Pitman Publishing.
- Carey, C. (1995). *Benchmarking Simplified*, London: World Business Publications Ltd.
- Andersen, B., & Pettersen, P. (1996). *The Benchmarking Handbook: Step-by-step instructions*, London: Chapman & Hall.
- Mollaei, N., & Rahimi, R. (2009). *New Method for Effective Benchmarking in Health, Safety & Environment Management*. Proceeding book of the Environment 2009 seminar, Abu Dhabi.
- Boxwel, R. J. (2007) *Benchmarking for Competitive Advantage*, Published by McGraw-Hill, 1994, Original from the University of Michigan, Digitized Nov 5.
- David, F. R. (2007). *Strategic management – concept and cases*, 11th ed, p. 13. New Delhi: Prentice Hall.
- Jeffs, Chris. (2008). *Strategic management*, p. 12. New Delhi: Sage publication.
- Huffs, A. S., Floyd, S. W., Sherman, H.D., & Terjesen, S. (2009). *Strategic management: logic and action*, p. 6. New York: John Wiley & Sons.
- Demers, C. (2007). *Organizational change theories; a synthesis*, California: Sage publication.
- Viotti, E. B. (2001). *National Learning Systems: A new approach on technical change in late industrializing economies and evidences from the cases of Brazil and South Korea*. Science, Technology and Innovation Discussion Paper No. 12, Center for International Development, Harvard University, Cambridge, MA.
- Senge P. (1992). *The Fifth Discipline: The Art & Practice of the Learning Organization*. Random House Australia: Milson Point, NSW.
- Argyris, C., & Schön, D. (1978) *Organisational learning: A theory of action perspective*, Reading, Mass: Addison Wesley.
- Senge, P. (1990) *The Fifth Discipline. The art and practice of the learning organization*, London: Random House.
- Salomon, G. (1993) *No distribution without individual's cognition: A dynamic interactional view in G. Salomon (ed.), Distributed cognitions—Psychological and educational considerations (pp. 111-138)*. Cambridge: Cambridge University Press.
- Kaplan R. S., & Norton, D.P. (2001). *Strategy-Focused Organization: how balanced scorecard companies thrive in new business environment*, Boston, Harvard business school press.
- Reed, S. K. (2007). *Cognition: theory and applications*, 7th ed, p. 2. Belmont: Thomson Wadsworth.

Acknowledgements

We would like to express our sincerest appreciation to our professor in Change Management course, **Dr. Mahdi Mortazavi** for whatever he has taught us, and his kind encouragement. We are also thankful to our professor, **Dr. Behzad Mashali**, head of MBA department, for his valuable advice and constant support. Devotion such as theirs allows us to have some idea in learning and change topics. We send them our best wishes.