FROM STATIC PRIORITY TO DYNAMIC PRIORITY IN MANAGING BUSINESS PROCESSES

PhD Student **Georgiana CIOANĂ**
The Bucharest Academy of Economic Studies, Romania

ABSTRACT

The purpose of this article is to emphasize the importance of distinguishing between static priorities and dynamic priorities when having to deal with business processes in a continuously changing economic environment. The focus of the business process in an era of continuous improvement of the company's performance should be on priorities, whether they are physical constraints (equipments, raw materials, workers) or policies (the implementation of a technological innovation, a strategy for entering new markets, for approaching new customers). In this sense, an essential method for working on priorities and concentrating the efforts on how to tackle them is represented by the set of managerial tools that managers can use in their day to day activities. The next important emphasis is on addressing the problems with the right tool and establishing which methodology is more efficient and delivers the most relevant results when analyzing static and dynamic priorities. Therefore these tools used to identify the core causes of problems are the guiding lines for managers in the decision making process and the success of the attempt to improve the performance of the business activity depends on their appropriate implementation.

KEYWORDS: *static priority; dynamic priority; constraint; managerial tools; continuous improvement*

Introduction

For many years companies have experienced different managerial systems and policies and have learned many lessons from the implementation of those methodologies in their permanent attempt to improve their business processes. One of the most important lessons to be taken into consideration is the one that supports the idea that it is not only necessary to do things right, but it is also vital to ensure that one is doing the right things. It is not just important to work hard and work smart, but also to work smart on the right things. In other words to focus the effort on what is essential as compared to the objectives the company or the organization has established, to identify what is critical to change inside the organization when the environment signals a need for business process reengineering and to deal with the necessary changes that lead to the real improvement of the current state.

The overwhelming flow of information forces busy managers to seek focusing methods that allow for efficient utilization of limited time resources. Among these methods are the well-known theory of constraints (TOC), which advocates the detection of critical resources (bottlenecks), and total quality management (TQM), which advises focusing on resources and activities imperative for quality. In this context, the Pareto methodology is one of the most important managerial tools that can be used to identify factors worthy of attention. (Scavarda, Bouzdine-Chameeva, Meyer Goldstein, Hays and Hill, 2004) However, it is mainly designed for the analysis of systems at a certain moment in time and

it evaluates the individual effects that each branch, each component, has on the performance of the system as a whole.

The literature relating to TQM is vast: Deming (1985) and Juran (1988) are the ones that contributed to the development of a conceptual framework in this field. The ''complete kit principle'' is described in Ronen (1992) and Grosfeld-Nir and Ronen (1998).

The static approach of priorities

A static priority could be defined as a constraint in the organizational system that limits the performance of one of the system's components, when analyzing the system as a sum of its independent parts. The way these priorities are handled is crucial. When analyzing priorities from a static point of view, managers have at their disposal a set o tools comprising:

- 80/20 Rule – the Pareto Principle
- Cause and effect diagram – Ishikawa diagram
- The 5 Why's methodology

A widely used instrument to organize the activity according to the importance of priorities in an organization is the Pareto diagram. Early in the 20th century, the economist Vilfredo Pareto stated that 20% of the population possesses 80% of the wealth. This basic 80/20 principle was then adopted in describing other realities; and, later, enhanced to the ''A'', ''B'', ''C'' classification, in which the ''A'' group (the ''vital few''), consisting of approximately 20% of the attributes (items), accounts for 80% of the phenomenon; the ''B'' group, i.e. the next 30% of the items, accounts for 10% of the phenomenon, and the ''C'' group (the ''trivial many''), which contains 50% of the items, accounts for only 10% of the phenomenon.

Many researchers model managerial scenarios according to this principle: approximately 20% of the projects generate 80% of the revenues (namely profits); 20% of the clients generate 80% of a firm's sales; 80% of the costs recorded by a company from poor quality come from 20% of the causes related to the errors encountered in their processes. The Pareto principle suggests that most effects come from relatively few causes. In quantitative terms, 80% of the problems come from 20% of the causes (machines, raw materials, operators etc.). Consequently, the effort should be aimed at the right 20% in order to solve 80% of the problems.

There are different examples given in many areas of management, including business, marketing, finance, human resources, production and logistics.

Ronen et al. (2005) suggested and explored a ''Pareto focusing methodology'' that consists of three steps:

- Classification – sort out symptoms (attributes) of a phenomenon to build a Pareto diagram and organize them into classes according to their importance.
- Differentiation – set a specialized policy for each class.
- Allocation – assign resources accordingly.

From the statistical point of view, the Pareto chart is simply a frequency block diagram displaying the relative frequency of different attributes in descending order. This classification is an essential step that must precede taking the corrective measures of differentiation and allocation, structuring the capacity and the resources available by analyzing the degree of necessity.

But when splitting the causes into classes it is very difficult to measure which cause has a greater impact inside the class which it belongs to, so the differentiation and the identification of the source of the most devastating effect is somehow ambiguous from this perspective. There is a clear distinction between the vital few and the trivial many, but those vital few are not seen as a chain of interrelated links, so if there is one sub-cause that lies underneath a main cause, its impact can be very easily overlooked.

Another useful methodology to prioritize the items on which management's efforts should be concentrated is the cause and effect diagram (CED) or the Ishikawa diagram or the "fishbone". The purpose of designing the CED was to sort the potential causes of a problem and to establish the causal relationships in order to have a systemic view of the phenomena. Professor Kaoru Ishikawa developed this tool in 1943 to explain to a group of engineers at Kawasaki Steel Works how various manufacturing factors could be categorized and interrelated. The original intent of the CED was to solve quality-related problems in products caused by statistical variation, but Ishikawa quickly realized it could be used for solving other types of problems as well. The tool later came into widespread use for quality control throughout Japanese industry. As its use spread to other countries, it became known as the Ishikawa diagram, or more informally, the "fishbone". Some researchers assert that the CED helps a team focus on the content of the problem, not on the history of the problem or differing personal interests of team members. Other opinions consider that the CED is an easily applied tool used to analyze possible causes to a problem, or a highly visual technique which aids the process of defining the elements of a problem or event and determining how it occurred. In both situations the fishbone is a very good method of identifying the causes of a problem that arises in the system, it goes profoundly into the matter by taking the possible causes on each branch (bone) and splitting them into sub-branches until the root cause is revealed. But from the point of view of making the links between sub-branches on different levels of the fishbone there is still a lot to be improved. Hence, the CED diagram does not offer the exact state of the problem, and the solution found by applying this methodology might only be temporary. On the long run, if the system is observed in continuous change, the decision will probably not be valid anymore.

To solve the issue of finding the very root cause, another methodology could be used, in order to ensure that all the sub-causes have been exhausted - the 5 why's - asking "why" until the final root cause has been reached. However there is a tendency to isolate a single root cause when in fact it could influence others in the chain, each question leading to many different root causes. The same inconveniences incurred with the use of the other tools previously mentioned could arise when enforcing the "5 why's" technique.

The dynamic approach of priorities

When seeing the system as a collection of dependent variables, we speak about dynamic priorities - the system's components influencing one another in a dependent relationship. Dynamic priorities therefore can be seen as those constraints, those links in the organizational chain that restrain the process from achieving its maximum result. The dynamic approach takes into consideration the aspects mentioned earlier in this article: are all the components of the organizational system equally important, or are some more instrumental than others in striving for the goal of the system? In most organizations, people act as if all components are equivalent. For example, everybody is considered an "equal member of the team." But is this really the case? Does every component contribute equally to the system's success? As George Orwell concluded in his classic novel, Animal Farm, "all animals are equal—but some are more equal than others."

The dynamic approach takes these managerial instruments to a higher level of exactness.

The corresponding but more refined tool for the Pareto-rule is Goldratt's 99/1 principle which states that when talking about maximizing profitability, the elements contributing to profitability are related. In this case the 80/20 principle still applies, but it is too broad. Because the contributors of profitability are related, the largest contributor will have a much greater impact than all the remaining contributors. This is due to the statistical

fact that dependent contributors add up as the sum of their squares. By squaring each contributor, the largest one ends up being closer to 99% of the sum of the squares. This largest contributor is the constraint – it's the cause that limits the company's profitability most.

Most companies have one or few constraints. The number depends on the number of independent processes. If all processes are somehow dependent on each other, then the system will have to deal with only one constraint. Hence, focusing on the constraint is where the greatest leverage on business's profitability will be. (Ask doctor Lisa – The occasional newsletter, 2004, < http://www.scienceofbusiness.com>)

Ishikawa's CED is a simple technique but, as can be expected, the simplicity renders it the least valuable for the purpose of deciding upon priorities. The current reality tree (CRT) and the Theory of constraints on the ideas of which it is based could be better used to analyze and simulate complex systems in this instance. The technique of current reality trees has the advantage that it scrutinizes whether a specific combination of causes are sufficient to lead to a specific effect. It reflects the most probable chain of cause-and-effect factors that contribute to a specific set of circumstances. The CRT assumes that all systems are subject to interdependencies among the factor components. Therefore, related causes must be identified and isolated before they can be addressed, managing priorities in the order of the impact they have on the system's output. Since the output is the result of a business flow, there is a need for an analysis of priorities in terms of system's dynamics. The focus should be on the upstream process(es) that influence the downstream activities according to their capacity, schedule and allocation of resources. Goldratt proposed the five focusing steps methodology which helps organizing the flow based on the weakest link in the system that settles the pace and must be exploited to its maximum. This theory also suggests that after identifying and eliminating the weakest resource, the system's dynamic is such that, most probably, sooner or later, another resource will govern the output of the entire process. Therefore, the previous analysis and the whole prioritization process should be conducted all over again in order to plan the investment decisions not only for the short term, but taking into consideration all possible future events.

Conclusions

Inside their processes managers focus on dealing with the priorities they are familiar with in their day-to-day activity. The management of priorities could be seen as a routine activity, knowing the key points and how to tackle them, managers only need to follow some procedures. This theory is valid if the organization would perform in a vaccum and if it was to consider the processes from a static perspective. But the degree of importance and value of priorities is given by the client, either it is internal or external. Needs and necessities change on a very non-constant basis, consequently the importance and the value placed upon these priorities change. Hence the hierarchy of priorities changes without following a certain pattern. This is the dynamic perspective, when organizations act in a dynamic environment dealing with uncertainty and dependent phenomena.

The complexities of modern business require approaches that are more sophisticated. A popular view is that if enough minds are put to the task, an answer to the problem will be found. The static perspective is useful when dealing with independent processes. However, in a rapidly changing business environment this approach is no longer the rule. Therefore a dynamic approach should be taken into consideration, where the emphasis is on dependent processes and the way they aggregate their effects to create the outcome of the entire business system.

This paper tried to make a review of the root cause analysis tools that can be used to manage the priorities in organizations, presenting the advantages and disadvantages of each of them. Most of the literature in this field of interest describes the three tools discussed herewith independently and there is no evidence on the distinction between the static and the dynamic approach of business processes. Consequently, further research should be conducted to provide information on how these methodologies could be combined in order to better address both static and dynamic priorities.

References

1. Goldratt, E. M., 1994, *It's not luck*, North River Press, Great Barrington, Mass.
2. Smith, D., 2000, *The measurement nightmare: How the theory of constraints can resolve conflicting strategies, policies, and measures*, St. Lucie Press, Boca Raton, Fla.
3. Doggett, A. M., 2005, "Root Cause Analysis: A Framework for Tool Selection", *Quality Management Journal,* Vol. 12; Issue 4, pp. 34-45
4. Grosfeld-Nir, A., Ronen, B. and Kozlovsky, N., 2007, "The Pareto Managerial Principle: When Does It Apply?", *International Journal of Production Research*, Vol. 45, No. 10, pp. 2317–2325
5. Grünberg, T., 2004, "Towards a Method for Finding and Prioritising Potential Performance Improvement Areas in Manufacturing Operations", International *Journal of Productivity and Performance Management,* Vol.53, No.1, pp.52-71
6. Plenert, G., 1999, "Bottleneck allocation methodology (BAM): an algorithm", *Logistics Information Management,* Vol. 12 , No. 5, pp. 378-385
7. Ronen, B., Spiegler, I. and Kozlovsky, N., 2005, *The use, misuse and abuse of the Pareto principle,* Working paper, Tel Aviv University, Faculty of Management
8. Scavarda, A.J., Bouzdine-Chameeva, T., Meyer Goldstein, S., Hays, J.M. and Hill, A.V., 2004, "A Review of the Causal Mapping Practice and Research Literature", Second World Conference on POM and 15th Annual POM Conference, Cancun, Mexico.
9. Ask doctor Lisa – The occasional newsletter, volume 2, number 2, 2004, available from <http://www.scienceofbusiness.com> [10 November 2009]
10. Berge, J., 2006, The Pareto Principle at Work, available from <http://www.management.about.com> [10 November 2009]
11. Detmerr, W., 2006, Systems and Constraints: The Concept of Leverage, available from < http://www.goalsys.com/systemsthinking/documents/Part-6-Systemsand Constraints.pdf> [10 November 2009]
12. Learn Lean Manufacturing - Learn lean manufacturing concepts, techniques and share lean stories, 2009, 5 Why? Simple and Effective Lean Tool, available from <http://www.learnleanblog.com/2009/10/5-why-simple-but-effective-lean-tool.html> [10 November 2009]