

REENGINEERING – CONCEPT AND REVIEW OF LITERATURE

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Abstract: *One way to dramatically improve the performance of a company is to fundamentally redesign all of its processes. This process is called reengineering. The aim of this paper is to explain the concept of reengineering, give an overview of the related literature, and point out its financial aspects. The first section explains the definition, main ideas, principles, objectives, criticisms, and practical applications of reengineering. The second section is a review of the relevant literature that addresses reengineering. Due to the fact that profound changes in financing, costs, cash flow, investments, payments and other areas of business finance are all connected with reengineering, just as with the redesign of all business processes, the third part provides a brief look at the concept of financial reengineering and its potential tools. The conclusion provides a summary and makes suggestions for possible areas of future research, especially at the intersection of reengineering and certain areas of financial science such as financial restructuring, controlling, cost analysis, activity-based costing, and financial engineering.*

Keywords: *reengineering, management, theory, review of literature*

JEL Classification: *M15, M21*

1. INTRODUCTION: THE CONCEPT OF REENGINEERING

According to Hamscher (1994), every company can be seen as a sum of processes that respond to customer needs by creating, producing, supplying and invoicing goods and services. These processes differ between individual businesses, but in most cases the processes that organizations carry out were never meaningfully assembled, but rather occurred in response to market conditions. Business process reengineering (BPR) is a generic term that includes several different views on how to achieve radical change in an organization (Hamscher, 1994).

Hammer and Champy (1993), originators of the concept of reengineering, define reengineering as “the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical contemporary modern measures of performance, such as cost, quality, service, and speed.” (Hammer et al, 1993). Reengineering is the most radical form of change and restructuring of business processes, and if executed correctly, it should lead to a complete recovery and revitalization of a business. The objective of reengineering is not merely corporate restructuring, but a fundamental and radical remodeling of business processes and practices to immediately increase performance.

In the early 1990s when the concept of reengineering first appeared, it promised a new approach to corporate change (Hindle, 2009). Reengineering as a method or technique for fundamental corporate change begins with an analysis of central business processes, which are then evaluated, changed, and repeatedly assembled into a new and more efficient structure. The long-established processes then change, including the original, inefficient organizational structures, while the organizational units are reassembled into more effective vertical structures. BPR can also be characterized as a management discipline, where the design of existing processes and their business components is first analyzed and changed according to

criteria of efficiency, frugality, and value added to business objectives.

The essence of reengineering is a radical change in processes, which differs from the typical development of a business that is characterized by only symptomatic, gradual changes. Therefore, the defining characteristic of reengineering, when compared to other methods of change management, is that it is a radical change and not a gradual improvement of processes. BPR is the analysis and redesign of workflow within a company and between companies.

According to Michael Porter, the literature on reengineering refers to a complete change of business processes, where the term “processes” is synonymous with activities, operations, or a sum of operations of individual organizational departments. Porter states that in every case there is a considerable emphasis on the level of activity.

The originators of the principles of reengineering, Hammer and Champy, emphasized that the concept of reengineering cannot be reduced to processes alone because its principles are applied in all parts of an organization, and it has significant fundamental objectives.

Aurand (1996) surveyed 200 marketing experts about their perceptions of reengineering in their companies. He concluded that in practice, reengineering cannot be defined in “black and white” terms, but rather as a continuum of gray (Aurand et al, 1996).

According to Buzacotta (1995), the process of reengineering is a radical change in how the process systems are structured, including the abandonment of systems that apply the principles of division of labor and division of management (Buzacott, 1996).

Mechling (1994) defines reengineering as both an approach and an objective of change. But he also notes that it has a technological aspect. He emphasizes that reengineering is a fundamental, rapid change founded on information technology (Mechling, 1994).

Blancett and Flarey (1995) introduced the following defining elements of reengineering:

1. Radical change – a focus on radical change of processes and systems.
2. Constant reevaluation – including the radical abandonment of dysfunctional ways of working and thinking; the abandonment of old assumptions and rules.
3. Innovation – an emphasis on creativity and production, to go where no one has gone before.
4. Dramatic improvement – the primary command is to make many “leaps” in the set outcomes that have dramatic results, not gradual improvement in processes and systems alone.
5. Effect genesis – a birth of a new beginning, a time of creativity.
6. Multifunctionality – a synergistic process that affects multiple functions and limits of the current state.
7. Focusing on the future – an emphasis on future operations, not only on present and past operations, which requires visionary thinking and leadership.
8. Top-down processing – Reengineering requires absolute dedication and the continued support of senior management in order to be successful.
9. Focusing on the organization – Reengineering pulls in and positively affects all units of the organization. (Blancett et al, 1995).

According to Blancett, reengineering cannot be equated with gradual business improvements or restructuring. Blancett affirms that reengineering is definitively not: the implementation of gradual, partial changes; the reduction of resources that were originally full-time to lower costs; an exchange of original vendors; the introduction of competitions, slogans and various distracting tricks; support and reward initiatives to improve quality; a change of factory equipment or manufacturers; restructuring of an organization; process improvement; the development of new services; the automation of existing processes; systems improvement; reducing the quality and range of services; marketing; nor the initiation of mergers of joint ventures (Blancett et al, 1995).

Although we could describe many of these phenomena as techniques or results of reengineering, they are not its defining characteristics because reengineering only concerns changes that have an impact on the entire organization; all of its elements, processes, and systems, without exception. In their book, Hammers and Champy emphasize that reengineering leads to more immediate and manifold changes, not only changes of the business processes themselves, but also changes in the organizational structure, management systems, and the design of individual jobs. Anything that is associated with processes must be changed to become an integral part of the overall change. Reengineering is a huge effort that induces changes in many areas of the organization (Hammer et al, 1993). A characteristic, key feature of successful reengineering is a continued focus on these core features and elements of processes. Conversely, the biggest mistake that one can make is to focus on peripheral matters. In this case only confusion and frustration result, and the overall

goal of implementing radical changes can never be achieved (Blancett et al, 1995).

The objective of reengineering is to make an organization more flexible, effective, and responsive to its customers, employees, and shareholders. For the reengineering process to be successful, business priorities must change as follows: 1. Attention must shift from the manager to the customer, 2. those who carry out processes must be included in decisions; the position of the employee must change from the object of supervision to one who has decision-making authority, 3. work must be directed toward results, 4. point-awarding and various scoring systems must be replaced with leadership and learning so that everyone can measure their own progress and results, 5. it is necessary to transition from a functional (vertical) organizational structure to a horizontal structure. 6. consecutive operations must be replaced with concurrent operations, 7. complex processes must be replaced with simple processes, 8. building up empires and reinforcing the status quo must be replaced by the invention of new systems and processes that are focused on the future, and 9. visionary leadership must be put into place (Hammer et al, 1993).

According to Lillranka (1998), the advantages of reengineering come from a combination of organizational changes and information / communication technologies. They can be categorized into three areas of value creation: 1. Value perceived by the customer, 2. Cost savings, 3. Value resulting from the creation of additional business opportunities (Lillrank et al, 1998).

The following is a summary the most important results and benefits of reengineering in an organization. The result of reengineering is a demonstrable radical change of the processes, system; positive changes that are measurable, i.e. transformation. Then there is the simplification of processes and systems that have nothing to do with the complexity of the original processes, i.e. simplicity. The result is a reduction of both overall costs and individual costs that result from the innovation of processes. Reengineering results in a revival of company culture characterized by the disappearance of both fear of innovation and imposed barriers on innovation. Another result is a significant improvement in the quality of all services that a company provides where the improvement of quality is measurable, resulting in a substantial change in quality. Reengineering results in a significant improvement in the time in which a company reacts to a customer's needs; services are provided in a reasonable and timely manner. The overall satisfaction of all customers or consumers of a given company also increases, and their level of satisfaction then continues to rise. Reengineering also results in an increase in market share, because it leads to a competitive organization with an improved ability to obtain new contracts and build a network of suppliers and customers. As a result of reengineering, a company becomes clearly focused on the consumer, and an unreserved dedication to the provision of services to consumers is achieved. The result is enhanced viability of the company, i.e. the establishment of a company that is financially healthy and clearly directed toward achieving future success (Blancett et al, 1995:33).

The purpose of this paper is to provide detailed review of literature on reengineering. This is the content of the second part. The third part aims to apply concept of reengineering on corporate finance. Last part is conclusion.

2. OVERVIEW OF THE LITERATURE ON REENGINEERING

The idea of reengineering appeared for the first time in 1990 in the Harvard Business Review under an article entitled "Reengineering work: don't automate, obliterate", by Michael Hammer, then a professor of science and information technology at the Massachusetts Institute of Technology (MIT).

In 1993, Hammer and Champy developed the idea of reengineering in a monograph entitled "Reengineering the Corporation: A Manifesto for Business Revolution." They assert that a radical change and business reorganization is necessary for costs in a business to be reduced and for the quality of services to increase, and that the key prerequisite of these radical changes is information technology. They base this claim on the fact that the workflow design in the largest corporations was based on assumptions of technology, people, and organizational objectives that were no longer sustainable. Accordingly, they suggested seven principles of reengineering that lead to the streamlining and simplification of workflow in order to achieve a significantly higher level of quality, time management, and cost reduction. They are: 1. organization according to outcomes rather than according to tasks, 2. identification of all processes in a given organization followed by prioritization, 3. integration of information processes directly into the activity being carried out, 4. handling geographically dispersed processes as though they were centralized, 5. linking parallel activities in workflows instead of just integrating their results, 6. placement of decision making where it is implemented and incorporated into the control of processes, 7. obtaining information only once and directly from the source.

The publication of these works was followed by works that stress the close link between reengineering and the application of information technology in business processes (Davenport, 1993). This relates with Robinson's view that information systems departments should end their tradition of automated business and apply reengineering. (Robinson et al, 1991). Similarly, Lillrank emphasizes the close link between reengineering and the use of potential information and communication technologies, and the subsequent reduction of costs and new value creation (Lillrank et al, 1998). Chan also affirms that reengineering is linked with the use of information technology (Chan et al, 1999).

Reengineering as an approach took hold in practice when many companies in the private sector applied its principles and procedures to institute radical change. Reengineering as a method was put into practice by Hallmark, for example, which completely changed its development processes and introduced new products to market. Kodak, another reengineered company, completely changed its production of film and shortened the time in which the business reacted to new customer orders (Hindle, 2009). The literature presents case studies of businesses such as IBM Credit Corporation, Ford Motor Company (Blancett et al, 1995), and Cigna Corporation (Caron et al, 1994). Earl characterizes other cases of the application of

principles of reengineering in practice (Earl et al, 1995). Hall describes the successful implementation of reengineering in Banca d'America e d'Italia, AT&T, and Siemens Nixdorf Service (Hall et al, 1993). Principles of reengineering have also been applied in various sectors of industry (Newman et al, 1994).

Several authors state that the principles of reengineering can be applied in practice not only in the private sector, but also in conjunction with radical changes in the public sector (Hale et al, 1994), (Claude, 1993), (Libbey, 1994). Mechling presents several cases of the implementation of radical change in the public sector in the USA and Canada: Naval shipyards, MAGIC in Merced County, New York City, Ontario Ministry of Revenue ESPRIT Project, Iowa Communications Network, and Child Support in Massachusetts (Mechling, 1994). Lillrank described three cases of the application of reengineering in Finland (Lillrank et al, 1998). Hesson described the application of reengineering in an urban planning case study (Hesson et al, 2007).

Reengineering has emerged as a successful method for complete sector reform, specifically health care, which has significant implications for the change of organizational structure, cost management, and efficient provision of quality health care. Reengineering in health care was described by Blancett (1995), Hall (1999), Scheikhurt (1996), and Waltson (1997, 1999, 2000).

The principles, methods, and overall concept of reengineering can be applied not only in the full-scale change of businesses in the private sector and public sector, but also in specific aspects of business. For example, Sagner elaborated the principles and procedure of reengineering cash flow (Sagner, 1997).

The importance of reengineering in an era of increasing globalization is reflected in another collection of major worldwide reengineering projects (Champy et al, 2005). Springer Publishing reflected the challenges of globalization and potential reengineering, when Reengineering of products and processes. How to achieve global success in the changing marketplace was published in 2012. Adeymi analyzed the impact of reengineering on business performance through an econometric analysis (Adeymi et al, 2008).

The inventors of the concept of reengineering themselves recognized that the problem of reengineering as a full-scale change of business processes and organization is that managers are happy to apply these changes to others, but not to themselves. According to Hammer, unrealistic expectations, resistance to change, and the absence of the consistent interest of managers caused setbacks in the implementation of reengineering in several businesses. In the prior literature, efforts to identify preparedness for reengineering have emerged so as to minimize the risk of failure in the implementation of its principles (Abdolvand et al, 2008). Hall analyzed the frequent causes of failure of reengineering and identified factors that are necessary for the transformation of a short-term business improvement into a long-term gain. According to Hall, reengineering must be based on costs or value for the customer and a prerequisite of success is the investment of time and energy by executive managers (Hall et al, 1993). Clemons confirmed

the importance of behavioral factors for the success of business reengineering (Clemons et al). Using a questionnaire, Burke studied the opinions of 2,514 employees of different businesses that provided financial services. He found that men, employees in higher positions, and employees who worked for the business for a longer period had a more positive attitude toward the implementation of reengineering in their organizations (Burke, 2004).

Critics of reengineering argue that reengineering is nothing more than a mechanical return to the views of Frederick Winslow Taylor, and others maintain that behind the lofty concept lies only an intellectual term for organizational changes that are associated with layoffs. Davenport, for example, denies the novelty of reengineering when he shows that all of its characteristics which are claimed to be breakthroughs have existed in management practice and theory (Davenport et al, 1994). Forty-four articles on reengineering were published by Prentice Hall by the title xxx (Sethi et al, 1998).

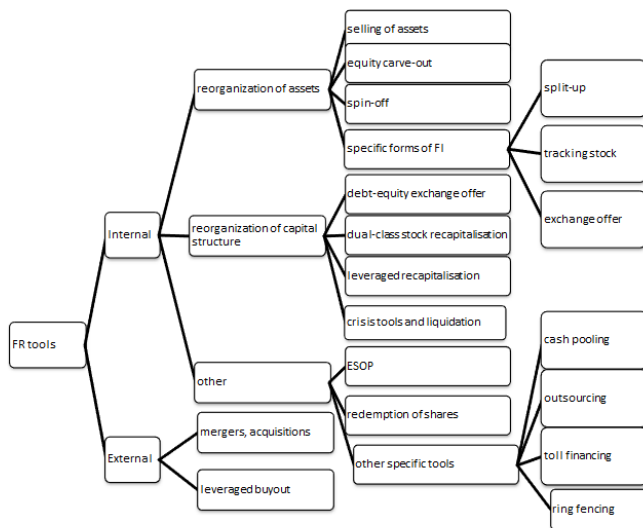


Figure 1 Financial reengineering tools

Legend: FR is financial reengineering; FI means financial investments; ESOP is Employee Stock Ownership Plan.

Source: author’s own compilation based on [16]

3. FINANCIAL REENGINEERING AND ITS TOOLS

We have already stated that reengineering is neither a gradual improvement nor a partial restructuring in one area of a company, but it is a total change that affects all parts, processes, services, and areas of management in a company, as well as the relationship of the company with its environment. Therefore, reengineering necessarily affects the finances and business financing, and change in this area should also be radical. These radical changes in finances and business financing should be termed financial reengineering due to their direct connection with other radical business changes.

According to Duval, “We understand the term reengineering to mean a sum of fundamental and radical changes in the process of corporate financial management in order to achieve a significant improvement in its approach toward sources of corporate financing, costs for financial resources, efficiency of financial management, and effective restructuring of all its resources throughout the

lifetime of a business” (Duvala, 2009). Figure 1 presents an overview of the tools of financial reengineering as presented by Duval.

In our opinion, the objectives of financial reengineering should coincide with the objectives, principles, and procedures of reengineering for a given business. Financial reengineering can be characterized as a radical change of finances, financing, cash flow, investment, remuneration, analysis and cost control, budgeting, and overall financial management of a business, which coincide with the processes of business reengineering. Financial reengineering must also be compatible with the objectives, principles, and procedures of given company, and must also contribute to the achievement of the company’s reengineering objectives, especially a dramatic increase in its performance. Finally the entire process of reengineering is an integral part of the overall changes of a given business; it adapts to them, it is their reflection, means, and consequence. At the same time, it effectively helps to achieve total full-scale changes in a business and its processes by its own instruments.

4. CONCLUSION

In this paper we dedicated our attention to establishing a thorough definition of reengineering, its definitive attributes, principles, procedures, objectives, and results. We introduced the historical milestones of its origins and development, cases of its application in practice, and its criticisms. We also provided an overview of the main authors of the relevant literature dedicated to theoretical issues and practical applications of reengineering.

In the prior section we dealt with the concept of financial reengineering, which we defined as a radical change of finances, financing, cash flow, and financial management, which is subjected to the processes of business reengineering. It coincides with the objectives, principles, and procedures of business reengineering, and it contributes to the achievement of objectives by its own instruments and is an integral part of the total full-scale changes of a given business. Overall, it not only adapts to them, but it is also their reflection, means, instrument, and consequence. Their tools effectively help to achieve total full-scale changes in internal business processes and in the relationship of a business to its environment.

In our opinion, further research will be necessary to compare the concept, design, tools, principles, procedures, objectives and methods of financial engineering with the concept, tools, principles, procedures, objectives and methods of other sub-disciplines of finance, in particular with the theory and practice of financial restructuring. It will also be necessary to note the common and contrasting attributes, methods, and objectives in both.

Another related discipline that may be of further interest is controlling and activity-based costing.

Reengineering typically includes an initial analysis of all business processes, their reevaluation, redesign, and even the use of engineering and information technology. This is where a space opens for the comparison of financial reengineering with another field of financial science – financial engineering.

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