



BUILDING INNOVATION CAPABILITY FOR LIBYAN FIRMS, TAKING ADVANTAGE OF POLISH FIRMS' EXPERIENCES

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Abstract:

Big changes observed on the market nowadays are forcing companies to choose to innovative solutions aimed at reducing the time of delivery, efficiency and quality. This is essential for the survival of these companies. For this reason, there is a need for continuous assessment of the strengths and weaknesses of the company as well as improve its capability to innovate at the operational level. In this paper we discussed an example of the use of a method called Complex Solutions Operations (Total Operations Solutions), [2] the ability to self-assessment in selected Libyan companies using the experience of Polish enterprises.

Key words: Total Solutions Operations, self-assessment, capability to innovate in the enterprise, comparisons.

INTRODUCTION

Evaluation of the company's capabilities is essential to identifying an organization strategies, strength and weaknesses, to determine the requirements which lead to improvement and innovation. The huge changes that constantly impact commerce have forced companies to innovate with increasing speed, efficiency, and quality. In turn, this has made new product development one of the most complex and difficult business functions. However, firms must innovate in order to survive; a firm's new product development efforts are shaped by its size, as well as the nature of the industry in which it operates [9, 10, 13].

The economic success of manufacturing firms depends on their ability to identify the needs of customers and quickly create products that meet these needs and expectations while being produced at low cost. Achieving these goals is not solely a marketing problem, nor is it solely a design or manufacturing problem; it is a product development problem involving all of these functions. The business today is experiencing obvious changes and improvements. The strategic logic for addressing changes includes providing space for innovations, improving flexibility, reducing risks, concentrating on the internal capabilities and capabilities of external entities, also focusing on the activities based on the inherent strengths of the organisation. It is an attempt for continuous improvements and developments, and strategic innovations. The underlying theoretical foundation is based on the perspective of achieving outstanding performance in the short term and building new capabilities, technologies, and products for the future [15]. If a process of continuous improvement is to be sustained and its pace increased, it is essential that an organization monitors its operations, using an appropriate performance measurement system to assess on a regular basis what activities are going well, which has stagnated, what needs to be improved.

In this research will be implement the Total Operation Solution (TOS) method [2] as a self-assessment tool, in both Libyan and Polish enterprises and evaluate the status of the Libyan enterprises by benchmarking with Polish enterprises. Furthermore, will classify the enterprises into against world class by attaining excellence in both performance and practices. Achieving world class status proves not to be an easy process as it requires total operations and high capabilities. Based on the results of the analysis can be determine what has to be done in order to decrease the gap and improve the performance of Libyan firms. The purpose of the analysis is to establish where the weaknesses are and to consider what actions are necessary to act to improve the situation in order to improve the necessary capabilities to stimulate innovation.

Some Definitions: Innovation is the mechanism by which organisations enable to develop value through new products, processes, and systems that are needed to respond to changing markets, technologies, and modes of competition [1, 6, 8, 17]. Innovation can be defined in many ways. Innovation is commonly understood as novelty leading to value creation on the market. Joseph Schumpeter (1883-1950) had a broad vision of the concept as that covering new products, new production processes, new markets, new raw materials, and new forms of organisation. For the researcher, the common thread between all these changes is that they involve "carrying out new combinations", which are qualitatively important and introduced by dynamic business leaders [7].

The innovation literature further recognises that there are differences in the nature of an innovation implemented. Organisational units attempting to improve their efficiency or effectiveness may attempt to innovate either their process or their product, or both.

To define categories of innovations, technological innovations can be classified into 'Radical innovations' and 'Incremental innovations' based on the perception of newness to technology and market. The terms of Radical and Incremental Innovations are defined by [11]:

'*Radical Innovations*' are defined as innovations that embody a new technology that results in a new market infrastructure. The radical innovations result in discontinuities on both a macro and micro level. Radical innovations often do not address a recognized demand, but instead create a demand previously unrecognized by the consumer [3]. This new demand cultivates new industries with new competitors, firms, distribution channels, and new marketing activities. '*Incremental Innovation*' can easily be defined a products that provide new features, benefits, or improvements to the existing technology in the existing market. An incremental new product involves the adaptation, refinement, and enhancement of existing products and/or production and delivery systems. Incremental innovations are important on two counts: first as a competitive weapon in a technologically mature market; and second, because streamlined procedures based on existing technology can help alert a business in good times to threats and opportunities associated with the shift to a new technological platform.

According to the "Oslo Manual", 3rd edition 2005, an innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations.

Product innovation: is a continuous process that involves integrating a growing number of different competencies and capabilities inside and outside the organisational boundaries. Simply put, it is the process of transforming business opportunities into tangible products [5]. Product innovation means different things to different people, implies difference and uniqueness.

Process innovation: with the rise of the quality and continuous improvement processes process innovation has become an important topic, organisations focus recently their attention directly on change management, organisational learning, and knowledge management. The strategies of different firms can vary depending on what competitive advantage they would like to gain [4]. Firstly, enterprises may aim to improve the quality of products or to assure that products or production processes meet new legal requirements. Secondly, enterprises may install new technologies simply to be able to produce a new commodity. Lastly, process innovations may be also intended to promote rationalisation in terms of reducing average production costs [14].

Organizational innovation: Organizational innovation refers to new ways work can be organized, and accomplished within an organization to encourage and promote competitive advantage. It encompasses how organizations and individuals specifically, manage work processes in such areas as customer relationships, employee performance and retention, and knowledge management. At the core of organizational innovation is the need to improve or change a product, process or service. All innovation revolves around change, but not all change is innovative [12]. Organizational innovation encourages individuals to think independently and creatively in applying personal knowledge to organizational challenges.

Learning Organisation: Learning Organisations are seen as adaptive to their external environment and continually enhancing their capabilities to change and to adapt. This could be achieved by developing collective as well as individual learning and by using the results of learning in order to reach better results. Therefore, "Learning Organisations are those that have in place systems, mechanisms and processes, that are used to continually enhance their capabilities and those who work with it or for it, to achieve sustainable objectives for themselves and the communities in which they participate" [9]. Senge (1990) defines Learning Organisation as "an organisation that is continually expanding its capacity to create its future" [16]

Description of the Selected Method: Total Operational was developed by [2] as a self assessment model to systematically measure all aspects of an organization, including both the internal functions and external relationships. Moreover, to build on strengths and to understand where weaknesses are, so that corrective action can be taken to gain a competitive advantage. Moreover, through the study of this model, it was realised that the total Operation Model is a comprehensive model Represents the company's innovation capabilities that can be used as an assessment method in overall the organisation, to evaluate these capabilities.

"Basu and Wright (1997) showed that Total manufacturing defined to include all the interactions between the conversion process inside a 'factory' with all other business processes, including marketing, research and development, supply chain management, financial and information management, and human resource management also with external factors such as environmental concerns, customer care and competition" [2].

The reason of chosen the TOS method to assess the innovation capabilities of the organisations, is that TOS method meet all the criteria of the innovation that firms can improve the existing capabilities that enable the firms to compete and survive

Research Method and Methodology: This thesis introduces a self-assessment method to assess innovation capability and to identify critical success factors for product innovation. Generally, capability assessments are methods to evaluate the capability innovation of enterprises. Precisely, they are made for the identification of organizations' strengths and weaknesses and also for sustainable improvement in their potentials, and the innovation capability.

In order to achieve the desired effects of the research and fulfil the purpose of this thesis:

- On the one hand, the theoretical frame of references where in a number of methods with current emphasis will be described in order to evaluate the business environments, culture and leadership.
- On the other hand, we use a model called Total operations solutions (TOS), it is process of self-assessment to systematically measure the aspects of an organisation, but the most important to concentrate on enhancing innovation capabilities. This includes both internal functions and external relationships of the organisation. The model is based on six pillars and twenty foundation stones, and it is the aspects of the organisation, that we plan to assess.
- To collect the data, there are ten questions for each of these twenty foundation stones, two hundred questions in total. The survey designed for self-

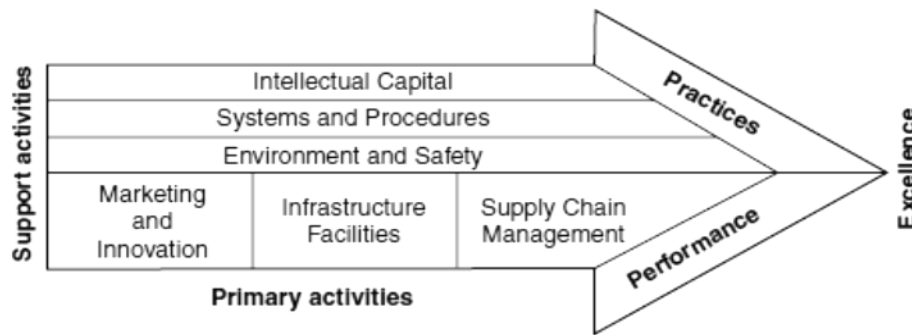


Fig. 1 Value chain

Source: Own contribution based on M. Porter, R. Basu & J.N. Wright [3]

assessment of the organization’s foundation stones, the questions may be easily adaptable to conditions of any organization. The model has been implemented in Libyan companies to assess the capabilities of Libyan companies, and Polish companies as well to compar. In order to analyze the collected data, an advanced software called ASK 2 (Advanced Self-Analysis Kit) was used. It was designed to incorporate guidelines into 200 questions and to enable a self-assessment with world class standards.

Performance vs. practice analysis: The combination of performance and practices gives excellence, as depicted in “Total Operations Solution Model”. As in Porter’s model, one can focus the business needs by analyzing the relative value of each pillar and the reason for its existence with regard to the business. In “total operations solution” model the pillars of primary activities are profit-driven and the aim is the achievement of higher performance standards. The pillars of secondary activities are service driven and the aim

is for achieving best practices. Although not essential, it is helpful to obtain published reports on outstanding or ‘world class’ performance achieved by other companies in your organization’s area of interest. It is not necessary to search for a world class company to be a benchmarking partner.

Continuing the value chain approach, as shown in Figure 1, we can classify the six pillars and their associated foundation stones into two groups:

- Performance pillars (primary activities)
- Practice pillars (support activities)

There are 11 foundation stones for the performance pillars accounting for a maximum score of 55. Similarly the nine remaining foundation stones constituting practice pillars contain a maximum score of 45. In order to achieve and sustain a leading competitive advantage, an organization must show ‘very good’ or ‘excellent’ results in both performance and practice indices.

Table 1
Data collection for LY firm

Company identification data for LY2	
Business type	Manufacturing, Building materials
FOUNDATION STONES	SCORE
Understanding the market place	3.6
Understanding the competition	3.3
Product and process innovation	2.6
Enterprise Resource Planning	1.8
E-Supply Chain and Supplier Partnership	3.2
Distribution Management and Working with Customers	3.7
Product safety	2.8
Occupational Safety and Health	3.3
Environment and Resource Management	2.8
Sourcing strategy	3.1
Appropriate Technology	2.6
Flexibility and Lean Processes	2.6
Reliability and Maintenance	3.3
Performance Management and Balanced Scorecard	3.7
Quality Management	3.4
Financial Management	3.1
Information and Communication Technology	2.5
Leadership and Organization Capital	3.9
Human Resource Policies and Human Capital	3.5
Knowledge Management and Information Capital	2.8
OPERATIONAL EXCELLENCE FACTOR	61.6

Table 2
The Roadmap of Libyan Firm

The Pillars	Strong foundations in PL company comparing with LY company	Improvement suggestion for Libyan firm (LY)		
		Big change	Medium change	Correction
Market and innovation	Understanding the market place Understanding the competition Product and process innovation		5 P's of Marketing	SWOT analyse
supply chain management	Enterprise resource planning	ERP (enterprise resource planning)		
safety and environment	Environment and resource management	ISO 14001		
Infrastructure facilities	Sourcing strategies			Balanced Scorecard (BSC)
system and procedure	Financial management		JIT	
Intellectual capital	Information and communication technology Knowledge management and information capital		(Just In Time)	

Data analysis: To analysis data in order to bring out the scores for the 200 questions:

Operational Excellence Factor (OEF), as shown in Table 2.

- Spider' diagram, as shown in Figure 2.
- Performances vs. Practice analysis, analysis firm's status for LY

A high proportion of company fall into this category. Its local strategies have shown good results in specific areas but it lack a coherent and potent leadership to benefit from the best practices of each unit. We have found that it is not uncommon to observe world class manufacturing lines alongside less efficient lines in the same manufacturing site. Another example is supply organization that has its own high street retailers. This organization has an admirable policy of seven day stock turn in the retail outlets but the balance sheet showed that they held eight months of finished goods in their distribution warehouses, and a further seven months of pre-paid raw materials at the factories or with suppliers. Plodders will require radical changes in both performance and practices to progress towards the leaders league. In addition to retaining the pockets of excellence the improvement strategy for 'plodders' should include:

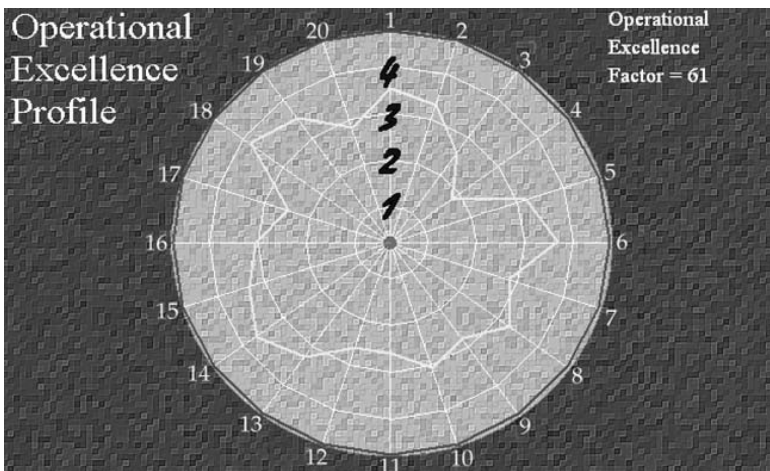
- The recognition and removal of inhibitors so that their own people skills and best practices can be developed to their full potential

- Retention of the core values of the company, and a selective but aggressive application of business process re-engineering in the critical areas of the business
- Encouragement of networking and promotion of best practices within the organisation.

CONCLUSION AND ANALYSIS THE COMPARISON

The Figure 4 shows comparison between Libyan and Polish company in Building materials manufacturing, clearly presents where the gaps and differences in performance.

The graph as shown in Figure 3, indicates, however, that there are areas where disparities are higher, thus, require analysis of the reasons underlying such situation. The Polish company scored very high score in the understanding the market category, while the Libyan company remains behind, but still reaching average result. The competition on the Polish market within the building materials has been very high and in fact seen constant growth. With the near saturated market, the businesses are forced to provide not only the best products, but also to monitor the market regularly for trends in customer tastes, undertake market research in order to establish prices that reflect the expectations of the specific market segments and enable identification of niches of which competitive advantage can be taken.



Maximum Score: 3.9
Human Resource Policies and Human Capital

Minimum Score: 2.5
Information and Communication Technology

Fig. 2 Operational excellence profile for LY firm

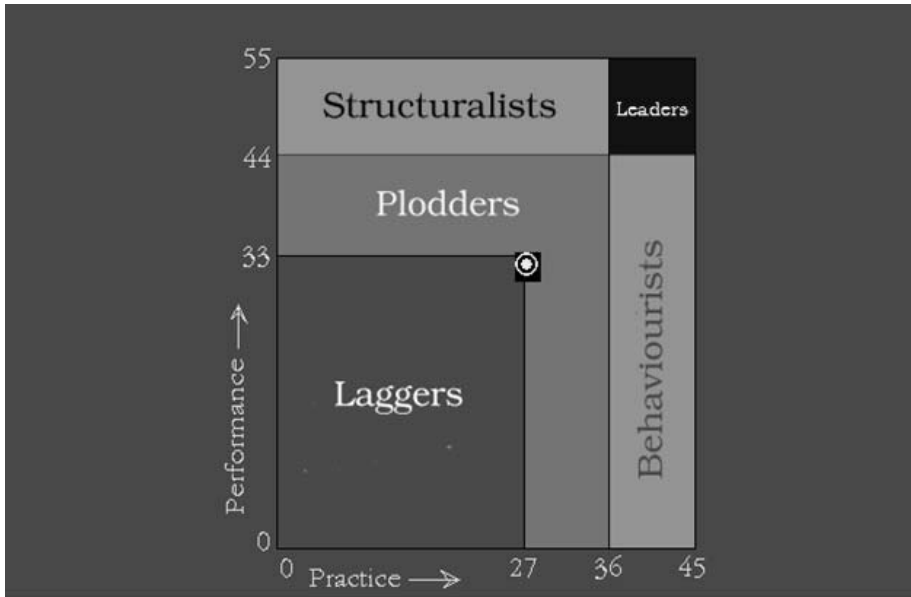


Fig. 3 Performance vs. practice analysis and status of LY Building
Source: Material firm

Laggers. This company achieved in both performance and practices (28) and performance (33.5) constitute the category of Laggers. The company in this group may possess pockets of excellence in both performance and practices, but its overall strengths are not good enough to compete in a global market

The Libyan company shows lower understanding of the market in which it operates, which is partially caused by the fact that the market is still ready to welcome competition, the rules guiding the market are very flexible with lack of necessary regulations or standards in place.

Another significant gap between the Polish and Libyan companies is identified in the enterprise resource planning where the Polish company achieved a high score while the Libyan company achieved fairly average result. The resource planning is strongly connected with the organisation of work, environmental and human resources regulations, costs involved with inappropriate exploitation of resources. While Polish company seems to have maximised the firm's internal and external processed in order to utilise its resources most effectively, the Libyan example shows a number of drawbacks in its resource planning. The lack of necessary regulations and policies on the governmental level as well as inappropriate managerial control and inadequate implementation of procedures affects the overall distribution and planning of resources.

The disparity between the Polish and Libyan companies in the environmental resource management criteria, the results clearly show the negative effect of the lack of regulations set by both external and internal management as well as the general misunderstanding of the efficient environmental resource management and the benefits of their proper exploitation both for the company and the environment in which it operates. Introduction of European environmental laws forced Polish companies to implement systems and procedures to improve the quality of the environmental resource management.

The sourcing strategy depicts the largest disparity between the two investigation companies, where the Polish company is scored high score in the scale. The ability to source materials and other resources is much higher on the Polish market as it gives easier access to information and higher level of protection. The sourcing strategy therefore is less developed in Libya where many processes are not advanced and developing a consistent long-term strategy is not considered important.

Financial management is another area where imbalance between the Libyan and Polish case is significant. While the Polish company proves to manage its financial resources effectively, the Libyan company struggles to achieve similar results. One of the reasons is for such differences are the accounting procedures that are much stricter in Poland than in Libya. Invoicing is popular yet not as widely implemented as in Poland. Majority of Libyan companies still use cash for most operations, which hampers financial control and allows irregularities to occur.

The Polish company surpasses the researched Libyan company in the Information and Communication Technology domain. The Libyan company does not utilise the information using all modern means of communication, while the Polish company makes attempts at following the newest communication solutions and constantly upgrading the systems to meet the new requirements of employees and customers.

Table 2, shows the roadmap of Libyan firm to improve weaknesses sides of the foundations, that can enhance the Libyan organization's capabilities in this industry.

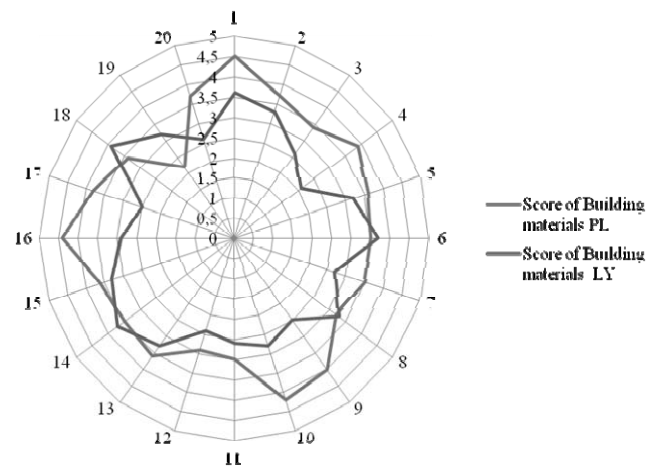


Fig. 4 Comparison of Building materials manufacturing Branch, LY and PL firms

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