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Abstract

Benchmarking is nowadays a powerful management tool that stimulates innovative improvement through exchange of corporate information, performance measurement, and adoption of best practices. It has been used for years to improve productivity and quality in leading manufacturing organizations. More recently, companies of different sizes and business sectors are getting involved in benchmarking activities. Despite the differences of benchmarking practices between smaller and bigger organizations, a successful benchmarking project could also enhance small business competitiveness. The participants in this empirical study are small companies from many different sectors, located in Northern Greece. As far as benchmarking is concerned, the perceptions of small companies and the methods they adopt have been delineated herein. Some noticeable findings of this study are: i) best performers in the same industry are mainly chosen for benchmarking by small companies, ii) benchmarking subjects seem to relate to business sizes, and iii) benchmarking is not considered particularly time-consuming and expensive process for small companies.

Key words: benchmarking, small business competitiveness, performance assessment, business practices

Introduction

As management of change and continuous improvement have become the foremost business issues of the 21st century, appropriate tools and techniques need to be adopted by firms in order to survive and prosper in a particularly competitive environment. Fast paces of change force businesses to be committed in continuous improvement through performance monitoring, goal setting and knowledge acquisition. Today’s successful businesses are outward looking, market oriented and knowledge driven. An approach that many companies adopt to align with these characteristics and obtain sustainable advantages over their competitors is benchmarking.
The term ‘benchmark’ originally comes from the land surveying terminology, where a mark is used as a reference point. Benchmarking could be defined as “the process of improving performance by continuously identifying, understanding and adapting outstanding practices and processes found inside and outside the organization and implementing the results” (American Productivity and Quality Center, 1997). However, prior to that definition Xerox Corporation had suggested the term ‘competitive benchmarking’ in 1979 to describe a process “used by the manufacturing function to revitalize itself by comparing features, assemblies and components of its products with those of competitors” (Camp, 1989). Since then benchmarking has not been restricted to manufacturing operations, but it has been extended to include areas like service operations, marketing, finance and human resources management. The ever-growing literature on benchmarking indicates a wide spread of benchmarking applications across geographical and industrial borders (Jarrar and Zairi, 2001). It has also become one of the most popular management tools in the world as a primary instrument in firms’ total quality management, knowledge management and process improvement efforts (Vorhies and Morgan, 2005; Rigby, 2001; Anderson, 1999; Garvin, 1993).

The main objectives of benchmarking include performance assessment, goal setting and the study of best practices. Once a business has measured its performance, comparisons have to be made with some kind of standards. Using historical standards, a company compares its current against past performance measures. However, with the competition getting more and more intense, reaching or exceeding those standards does not necessarily mean that current performance can be regarded as satisfactory. Benchmarking involves the comparison of a company’s achieved performance to the corresponding performance of its competitors. In this way, a firm can determine the level of its competitive abilities. Looking at the competitors’ performance, companies can also set realistic goals. If benchmarking is carried out by looking at best-in-class companies, these goals are likely to lead to a considerable improvement in performance and learning (Roth et al, 1994). The success of benchmarking however depends strongly on the ability of a company to learn lessons about how best performance is accomplished. Rather than merely measuring best performance, benchmarking is a means of identifying and understanding the practices needed to reach new goals. By identifying ways that superior companies organize their processes, a company could try to adopt and adapt these practices (Voss et al, 1997). Therefore benchmarking is both a means by which new practices are discovered and understood, as well as a goal setting process (Camp, 1989).

Although large firms were the first practitioners and are responsible for the latest advances in benchmarking, the role of small-and medium-sized enterprises should not be underestimated. According to the European Commission, SMEs constitute 99.8 percent of all companies, provide 66 percent of total employment and attain 65 percent of business turnover in the European Union (European Commission, 1995). SMEs have the most to gain from benchmarking since analysis of the performance gap helps them sustain a competitive advantage (Balm, 1996).

The objective of this paper is to examine benchmarking process from a small company’s point of view and identify the main differences of benchmarking between small and leading organizations. Relevant literature on this topic is reviewed in the second section, while the third section focuses on the description of the research methodology. The research findings are presented in the fourth section, and finally the conclusions of our study are discussed in the fifth section.

**Literature Review**

Several types of benchmarking methods exist but all these fall into four main categories: internal, competitive, functional and generic (Zairi and Leonard, 1994; Camp, 1989). A company may well choose to study data or practices from different departments or factory sites that belong to its own total organization. This process is called internal benchmarking. In competitive benchmarking, comparisons are made between companies that are direct competitors. In contrast, functional benchmarking involves the study of practices that are used by businesses which do not directly compete in the same markets.
When Motorola was trying to speed the delivery process of its cellular phones, it paid visits to Domino’s Pizza and Federal Express (Hollings, 1992). The most typical example of functional benchmarking is the comparison of picking and packing functions between Xerox Corporation and L.L. Bean, which activate in completely different industries. Finally, generic (or innovative) benchmarking is an extension of functional benchmarking, but differs from it in that the search is not restricted to a common application. Instead, it looks to adopt a method or practice that someone employs for doing something completely different (Tenner and DeToro, 1997).

The popularity of benchmarking in recent years has led to an increasing number of conferences, associations, and journals devoted to this subject. As a result, a lot of research work has been undertaken with the aim of providing answers to key questions concerning the area of benchmarking. Methodologies are also proposed to assist companies in implementing this approach. Using sample data from over 600 European manufacturing companies, Voss, Ahlstrom, and Blackmon (1997) have proposed a relationship between learning, benchmarking, understanding, and performance, as shown in Figure 1. Benchmarking is a vital part of the learning company’s repertoire for performance improvements and learning organizations will be more likely to use benchmarking. In addition to that, benchmarking promotes higher performance directly through helping a company to identify practices and set challenging performance goals. Benchmarking also increases a company’s understanding of its strengths and weaknesses in relation to the competitors. This understanding in turn benefits performance, since improvement agendas will be focused on real needs.

**Figure 1:** Relationship between learning, benchmarking, understanding, and performance.

![Diagram](image-url)

Many attempts have been made to find out the extent to which firms have adopted benchmarking. Companies that use benchmarks within their own organization or business group are considered to attain average levels in terms of benchmarking activities. In contrast, the best practitioners of benchmarking are those who use regular and documented benchmarks against their competitors but also against world class standards from other industries. An interesting common conclusion coming from these attempts is that benchmarking is strongly associated with an organization’s learning orientation, confirming Voss and his colleagues’ research model. This means that companies which are...
outward looking and committed to organizational learning are more likely to employ benchmarking methods.

Another key question concerns the existence of a relation between business size and benchmarking. According to some authors, small-and medium-sized businesses do not seem to engage in benchmarking activities to a large extent, claiming that benchmarking is expensive and time consuming (Micklewright, 1993). Small-and medium-sized enterprises are therefore reluctant to participate in benchmarking practices due to the lack of time, financial and personnel resources (Nelder and Skandalakis, 1999). Recent global studies however are opposed to the above statement, finding a clear spread of benchmarking world-wide and across various industries and business sizes (Jarrar and Zairi, 2001).

Companies less familiar with the practice of benchmarking usually regard the way they do things as uniquely suited to their operations and dismiss findings not invented in-house. They also support that their operations are unique and therefore not comparable to those of benchmarked units (Stauffer, 2003). When Siemens started benchmarking in the ‘80s, they were not willing to accept the results. They said “there are cost differentials, but we are better” (Heinrich von Pierer, Siemens CEO, 2005). Managers need to recognize that all operations, no matter how well managed, are capable of improvement (Slack, Chambers and Johnston, 2001).

A procedure for implementing benchmarking has been proposed by Dawar, and Vandenbosch (2004). The selection of variables, which have to be monitored and measured, is the first step of the procedure. Issues of importance to customers have to be seriously considered in the selection process. The authors claim that the choice of variables deserves considerable thought, not just because it will determine the success of the benchmarking process, but also because there is a first-mover advantage to capturing the most salient measures. Data collection on variables follows and constitutes a difficult and time-consuming task. The next step involves data aggregation and analysis, where comparisons can help diagnose problems and adjust internal processes and systems. Correlation measures and models based on key variables can also be obtained to enable simulation of possible outcomes according to different decision variables. In the deployment step, the solutions developed through data analysis are adapted and applied to the company processes. Finally, feedback and updating are employed to ensure that the whole process is designed to learn and adapt. Otherwise its value will vanish after the first suggestions are delivered. Continuous feedback from the application of solutions and updating of the benchmarking data are required in order to develop a sustainable competitive advantage. Attention should be paid to all the aforementioned steps, since they require a lot of effort in order to be planned and implemented.

Various benchmarking approaches have been adopted by industry leaders (for example, Motorola, Bristol – Myers, AT&T), but they mainly differ only in the number of stages involved. The most widely accepted approach has been proposed by benchmarking’s leading authority, Dr. Robert Camp (1995). It includes the following ten steps: 1) identify the benchmark subject, 2) identify benchmark partners, 3) collect data, 4) determine the gap, 5) project future performance, 6) communicate results, 7) establish goals, 8) develop action plans, 9) implement plans and monitor results, and 10) recalibrate benchmarks. The first three steps refer to the planning phase, the 4th and 5th to the analysis phase, the 6th and 7th to the integration phase, and the last three to the action phase.

A major issue that will affect benchmarking in the future is the advances in IT. The concept of benchmarking is strongly related to the exchange of corporate information, which is greatly facilitated by the use of information systems and the Internet. Significant advances in information technology make benchmarking more effective and available to smaller organizations. A study (Jarrar and Zairi, 2000) reported that there are currently over 500 Internet sites devoted to benchmarking education and best practices spread and transfer.
Research Methodology

The research methodology enabled the extraction of information regarding the application of benchmarking practices in small sized companies. The main issues of concern were how these companies perceive and apply benchmarking methods. Based on relevant literature an attempt was made to find relationships between variables of interest by testing a number of hypotheses:

H1: Benchmarking is the most important practice for improving a small company’s competitiveness.

H2: Benchmarking is a particularly time-consuming and expensive process for small companies.

H3: Small companies mainly apply competitive benchmarking methods, preferring competitors from the same industry.

H4: Benchmarking subjects relate to business sizes (how important a benchmarking subject is for a small company relates to its business size).

H5: All the implementation steps of a benchmarking project for a small company have the same degree of difficulty.

The statistical population in our research consists of the entire set of small companies functioning in Northern Greece (for reasons of convenience in accomplishing personal interviews) and employing some of the benchmarking methods. The sample size is 94 companies, which are classified as follows: 19 percent (18/94) are companies with primary activity in the manufacturing industry, 18 percent (17/94) handicrafts, 17 percent (16/94) wholesalers, 20 percent (19/94) retailers, and finally 26 percent (24/94) are companies dealing with services provision. Attention has been paid for all aforementioned industries to be equally represented in our sample. The business sizes of the sample are listed below, on the basis of the companies’ annual turnover per employee:

- 0 – 99,000 € → 50 percent (47/94)
- 100 – 199,000 € → 31 percent (29/94)
- 200 – 299,000 € → 8 percent (7/94)
- 300 – 399,000 € → 5 percent (5/94)
- ≥ 400,000 € → 6 percent (6/94).

The survey has been carried out by means of personal interviews with senior managers of the companies sampled for a period of approximately four months, starting in January 2005. Close-ended questions (i.e. predetermined choices in each question) have been included in the questionnaire and the variables used have been mostly qualitative – ordinal-scaled, since the respondents have been asked to rank the importance degree of these predetermined choices.

Research Findings

Benchmarking was assessed as the most important practice for a small company to improve its competitiveness, getting an 88.5 percent (as “very important” and “quite important” practice) [1] of the respondents’ preferences. It is worth to point out that the managers of the companies sampled were given a great number of possible practices for improving a company’s competitiveness, as it is shown in Figure 2. Our intention was not only to assess benchmarking as a business tool for achieving a sustainable competitive advantage, but mainly to compare it with the most typical contributing factors to that purpose [2]. The respondents classified training programs (76.9 percent as “very important” and “quite important” practice), upgrading of technological equipment (74.4 percent), and improved staffing systems (71.8 percent) to the second, third, and fourth position respectively. Consequently, benchmarking is believed to be the most reliable choice in today’s competitive environment, confirming the hypothesis H1.
Regarding the hypothesis $H_2$, the statement that benchmarking is a particularly time-consuming and expensive process for small companies is not in agreement with the findings of this research. It was found that benchmarking is applicable by any organization, irrespectively of its size. Because the above statement is considered as a main difference of benchmarking between smaller and bigger organizations, it was compared in the framework of our research with some other main differences, and the results were as follows: the possibility for a big organization to have specialized personnel for benchmarking was assessed as the most important difference between small and bigger enterprises (87.2 percent as “very important” and “quite important”), as illustrated in Figure 3. The fact that big organizations usually apply their own benchmarking models (84.6 percent) and the possibility for them to establish competitiveness prizes for the personnel (75.5 percent) were also considered important differences.
to develop co-operations aiming at information exchange (78.2 percent) are classified in the second and third position respectively. The fourth difference in order of importance is the fact that benchmarking is a continuous process for bigger organizations (71 percent), whereas the hypothesis H2 gathered only 60.3 percent (as “very important” and “quite important” difference) of the respondents’ preferences. Additionally, in order to retest our hypothesis, correlation analysis was carried out. The variables examined were i) the statement that benchmarking is a particularly time-consuming and expensive process for small companies, and ii) the annual turnover per employee, categorized as mentioned in the “Research Methodology” section. The dependent as well as the independent variable is ordinal, so the correlation coefficient Spearman $r_s$ was used. No relation between the two variables was found ($r_s=-0.071, p=0.534 > a=0.05$) [3], leading to the rejection of the hypothesis H2.

**Figure 3:** Assessment of the differences of benchmarking between smaller and bigger organizations.

Where:

1=big organizations apply their own benchmarking models, while small companies do not
2=big organizations have specialized personnel for benchmarking, while small companies do not
3=big organizations can more easily develop co-operations aiming at information exchange
4=benchmarking is a continuous process for big organizations, while small companies employ it occasionally
5=benchmarking is a particularly time-consuming and expensive process for small companies

Companies considered as being best performers in the same industry, meaning that their products, services or practices have the broadest acceptance in that industry, are chosen for benchmarking by the majority of the companies sampled (51 percent). The companies of relative business size in the same industry are classified in the second position (26 percent), whereas the companies with the greatest market share in the same industry are classified in the third position (15 percent). Perusal of Figure 4
reveals that only direct competitors are chosen for comparison, while companies from different business sectors seem to be ignored, as far as the benchmarking process of small companies is concerned. Small enterprises are therefore engaged in competitive benchmarking, which confirms the hypothesis H3. As shown in the Figure, foreign companies are not used as standards of comparison by small companies, and this is another point that differentiates benchmarking between bigger and smaller organizations. This leads to the conclusion that although small companies are engaged in some kind of benchmarking activities, they only attain average levels in this field, meaning that they do not use benchmarking as a strategic tool and they do not fully exploit it.

**Figure 4:** Groups of companies which are chosen for benchmarking.

Where:

1=companies with the greatest market share in the same industry
2=companies considered to be the best in the same industry, in relation with their products, practices etc.
3=companies of relative business size in the same industry
4=companies applying similar processes, but activating in a different industry
5=foreign companies in the same industry
6=foreign companies in different industries

The challenge for the benchmarking team of a small company is to select the subject for which benchmarking can provide the most significant advantage. This is, because the number of benchmarking projects that could be accomplished by a small company is particularly limited. Figure 5 depicts the percentages of the most likely benchmarking subjects, in order of importance for a small company. All respondents agree that quality of delivered products or services is a “very important” or “quite important” subject, whereas strategy development, process performance, and product/service pricing also attained high percentages (94.8, 93.6, and 92.3 percent respectively) as “very important” and “quite important” subjects. The ranking order of the rest subjects is as follows: 5) technological
equipment (80.8 percent), 6) financial performance (79.5 percent), 7) information system (76.9 percent), 8) staff training (75.6 percent), 9) promotional activities (73.1 percent), 10) staff expertise (70.6 percent), and finally 11) innovation development (65.4 percent). The hypothesis H4 is concerned with the relation of benchmarking subjects to business sizes, meaning that the importance of the subject for a small company depends upon its business size. The prerequisites for testing this hypothesis are the same as in the case of the hypothesis H2 (both variables are qualitative, ordinal-scaled), so the correlation coefficient Spearman $r_s$ was used again. Based on nonparametric correlation measures, strategy development relates proportionally [4] to business size ($r_s=0.341$, $p=0.038 < a=0.05$). In addition to that, promotional activities ($r_s=0.24$, $p=0.003 < a=0.05$), staff training ($r_s=0.274$, $p=0.027 < a=0.05$), and staff expertise ($r_s=0.356$, $p=0.019 < a=0.05$) relate proportionally to business size, as well. On the contrary, innovation development relates inversely proportionally to business size ($r_s=-0.256$, $p=0.024 < a=0.05$), implying that a smaller and therefore more flexible organization is more likely to conceive and convert a new idea to an innovation. No relation between the remaining benchmarking subjects and business sizes was found.

**Figure 5:** Assessment of benchmarking subjects.

Where:

1=strategy development 7=promotional activities
2=product/service quality 8=staff training
3=product/service pricing 9=staff expertise
4=process performance 10=technological equipment
5=financial performance 11=information system
6=innovation development

The managers of the companies sampled were asked to grade the five steps of the benchmarking procedure [5], as it has been proposed by Dawar and Vandenbosch. The selection of this procedure is due to the limited number of steps, the simplified description of the procedure which leads to a
complete understanding of the comprising steps, and the fact that it is not only applied to a specific organization. Figure 6 shows the mean values of grades of benchmarking steps. The application of solutions to the company (mean value: 3.33) and selection of variables (3.32) are the steps requiring the most possible attention in order to be carried out. The third step in terms of difficulty order is data analysis / comparisons (3.09), whereas feedback and updating of data (2.87) seems to have been underestimated, according to the respondents’ preferences. Finally, data collection during the benchmarking procedure (2.37) is rather considered as a time-consuming but not difficult task to be carried out. Therefore, the hypothesis H5 has to be rejected.

**Figure 6:** Assessment of the steps of the benchmarking procedure.

![Figure 6](image)

**Conclusions**

The practice of comparing a company’s products, services or processes to those of competitors has been mostly used by big organizations. However, this could also be a particularly beneficial tool for small companies. According to the findings of our survey research, benchmarking is considered to be the most important practice for enhancing a small company’s position in today’s competitive environment. Even though a long list of practices leading to superior performance was given to senior managers of the companies sampled, benchmarking is recognized as the best practice that could improve small business competitiveness.

Considering the time and resources required to complete a benchmarking project, the researchers’ opinions are quite different. It is not clear whether such a project is affordable for a small company’s capabilities. The statement that benchmarking is a time-consuming and expensive process was compared in our research with some other main differences of benchmarking between smaller and bigger organizations. Our findings reveal that the possibility for bigger organizations to have specialized personnel for benchmarking and apply their own benchmarking models are much more important differences than the above statement. Nevertheless, sixty percent of the responding managers argue that lack of time and limited resources characterize benchmarking in smaller organizations.

Another noticeable point of this paper is that only competitors from the same industry are chosen for benchmarking by small companies. However, it is a fact that looking outside one’s own industry to organizations performing similar activities could assist small companies to obtain a more integrated image of their business environment. Of course, this does not mean that competitive studies should be
skipped. The benchmarking subjects chosen by small companies range from issues of strategic consideration to more common business issues. The importance of a subject for a small company seems to be dependent upon its business size, with strategy development, promotional activities, staff training, and staff expertise to be preferred by more substantial firms.

Small companies do not develop their own benchmarking models. Instead, they apply methods that could be described in general terms by the procedure proposed by Dawar and Vandenbosch (see “Literature Review”). Indeed, selecting the variables to be measured, collecting data, analyzing them, applying the solutions to the company, and finally updating the data are the basic stages involved in a typical benchmarking project. The research findings reflect the application of solutions to the company and the selection of variables as the most difficult stages to be accomplished, whilst data collection seems to be the easiest part of a benchmarking project. Managers of small companies need to understand the whole process and focus on the benchmarking steps which are more difficult to achieve and require more resources.

References
Footnotes
1. The respondents were asked to classify 12 predetermined practices for improving a small company’s competitiveness, according to the following scale of four categories: “very important”, “quite important”, “somewhat important”, and “not important”.
2. Apart from the predetermined choices, there was also the possibility for an open-ended choice.
3. A level of significance $a=0.05$ was accepted in the hypothesis test.
4. As the business size increases the importance of strategy development also increases.
5. The managers who participated in the survey research had to assign 5 points to the step which is considered the most difficult to be accomplished, up to 1 point to the easiest step.