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# **Economic and Financial Benchmarking as a Strategic Planning Tool**

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#### **ABSTRACT**

This paper aims to propose a new model for estimating companies benchmarking. The model has been applied to the media sector (identified by Industry Classification Benchmark with the code 5500 and composed by three subsector with codes: 5553 - broadcasting and entertainment, 5555 - Media Agencies and 5557 - Publishing). The model is based on the analysis of the financial and economic area of enterprises that together contribute to the elaboration of a total benchmark. We collected data for 217 listed companies for a time horizon of 10 years (2006-2015). The results show that most of the analyzed companies belong to the best or worst class. Deepening the analysis, the subsector 5555 - Media agencies has contributed most to the positive performance of the media sector while the subsector 5553 - broadcasting and entertainment is the worst. The model, applied to the media industry, can be extended to other sectors and unlisted companies.

Keywords: Benchmark, Strategy Planning, Finance

JEL Classification: G

#### 1. INTRODUCTION

In recent times the context in which companies operate has undergone a profound change due to globalization. This process has two direct effect: (a) The widening of the market, and (b) the increase of the competitiveness. With regard to point (a), globalization has had the effect of liberalizing markets: In this new context each one has more information about others and behaviors tend to be more uniform. Furthermore, globalization also caused a rise in competitiveness (b) through the formation of strategic alliances and the propagation of information networks. Companies operate in an increasingly competitive and internationalized environment. Therefore they need to provide systematic information about the competitive environment and its dynamics, to know its competitive level but also that of the system, the sector in which they operate as well as the features of competitors in the same sector. Companies must also identify the causes of the gap with the best practice and implement the excellent practices used by other companies. A tool which responds to these needs is benchmark.

The paper is structured in four parts. Section 2 is about the review of literature on the argument and the identification of the different types of benchmark. Section 3 contains the illustration of data and methodology. Section 4 is relative to the analysis and the representation of the results. Finally, section 5 shows the conclusions of the study.

#### 2. LITERATURE

Benchmark's origin dates back to the late 1970s. According to some authors the benchmark is related to Oriental culture. In particular it comes from the Sun Tzu's rule. The Chinese general affirms that "If you know your enemy and you know yourself, than you won't have to worry about the results of hundreds of battles." Furthermore benchmark derives from "Dantotsu," a Japanese term which means "to strive to be the best of the best." The birth of the benchmark is commonly attributed to Camp (1989). He was the Director of Logistics Operations at the "Xerox Corporation," a US company that produces printers and copiers. In 1979 the company lost its primacy in the industry; so, Camp was called to define a project for the identification of the causes of the crisis and the possible solutions.

Camp changed the society's modus operandi: Until then, Xerox Corporation planned its strategies based on the results achieved in the past. Camp (1995) conducted a comparison of products and operating processes of the major companies belonging to the same market area. He found that the most successful competitors were the Japanese ones: They were operative in the market practicing a price equal to the production cost supported by Xerox. However this companies didn't register losses. In addition, the human resources employed by Xerox in the development and design area were 5 times as high as compared to Japan's competition. So, Xerox Corporation redefined its core strategy considering the results achieved by competing companies as their goals to attain. In this way, company abandoned the traditional strategic planning approach based on the past goals. The Xerox's benchmark model was articulated in ten steps divided in five stages:

- 1. Planning;
- 2. Analysis;
- 3. Integration;
- 4. Action;
- 5. Maturity.

The first phase included the research of best practice/competitors to emulate, the process and the product to be benchmarked and data collection. In the second phase, data collected were analyzed. This stage aims to know the competitors' strengths and how adapt them to their own activity. The integration phase is based on the problem solving method: After analyzed the features of competitors, this must be received by the company. This must align their own goals with best practice. In this stage management provide an action plan based on the analysis conducted. After this phase, planning actions must be implemented and periodically update. It is necessary to monitor the way company is achieving its objectives. Finally, the maturity stage helps the company in understanding if benchmark process has been useful and if it is an integral part of its organization. Soon Xerox recuperated the lost market share and in 1983 the benchmarking process became a technique of analysis to identify customer needs both inside and outside the company. Furthermore it was extended to all business processes. Camp defined benchmark as "a basis for establishing rational performance goals through the search for industry best practices that will lead to superior performance." The Xerox Corporation's CEO defined benchmark as "the continuous process of measuring products, services, and practices against the hardest competitors or those companies recognized as industry leaders." Since then, various benchmark definitions have been produced. Some Authors defined benchmark as a procedure of constant progress which provides the comparison with the best practice (McGeorge and Palmer, 1997). According to the American Productivity Quality Center, benchmark is a procedure where it is important to compare and measure an organization respect others in order to obtain information useful to improve its performance. The benchmark process is adopted in various companies such as AT and T, 3M, and Ford.

In literature we can find various studies focused on benchmark. Jain and Yadav (2006) studied the use of benchmark for the food processing industry. The objective was to identify the opportunities for an improvement of the activity and how to

translate these opportunities in actions to improve the business. They found that companies could learn from the comparison with competitors. Baltacioglu et al. (2007) conducted a study to recognize and measure performance and develop the supply chain in the healthcare sector. In particular, he developed a new model of supply chain which define the managerial activities such as information and technology management, customer and supplier management, order process management to be pursued for an efficient supply chain management. The study demonstrated that companies which adopt this model of supply chain were able to face in a more effective way the changes in the sector. Other Authors found that companies implement high level of profitability and performance with the implementation of practices connected to the quality management (Narasimhan and Kull, 2010). According to some literature, benchmark can be saw as an important tool that encourages businesses to reflect on the surrounding changes and to think about improvement strategies (Dattakumar and Jagadeesh, 2003). The benchmark process can be used not only in big companies: Indeed, Hwang and Lockwood (2006), Singh et al. (2008) and Meybodi (2009) support the use of benchmarking process in small and medium enterprises. Also other writers focused their study on small and medium enterprises: They developed a measurement method for performance of this typology of companies based on the analysis conducted by a diagnostic expert system (Delisle and St-Pierre, 2006). Denkena et al. (2006) tried to develop a model for analyze the performance based on knowledge. Cabral and Ribeiro (2006) suggested in their analysis the use of a model for measure of performance for companies operating in the metal casting sector.

#### 3. DIFFERENT TYPES OF BENCHMARK

There are different types of benchmark. In particular we can identify two main typologies: The external benchmark and the internal benchmark. Regarding the external benchmark it refers to the process in which performance are compared with that of industry peers; using the internal benchmark, comparison regards performance and practices within an organization. Furthermore, benchmark can be classified in process benchmark, performance benchmark, strategic benchmark, benchmark one to one, generic benchmark, competitive benchmark, functional benchmark.

In particular, process benchmark makes use of research on the web and survey. It is a valuable tool to support business decisions and it is based on the analysis of a specific process in the best performing companies and the comparison of this with other companies. Performance benchmark is about to compare performance measures (such as price, quality, types of products and service) in order to investigate where the company is positioned. Strategic benchmark aims to individuate the winning strategies adopted by the major performing companies. Benchmark one to one refers to the comparison of two companies, active in the same sector but also in different sectors. Generic benchmark has the purpose of identifying the best practices not realized within a sector. Competitive benchmark is about to compare a company with the best direct competitors. Functional benchmark refers to comparison of companies with comparable practices in the same function.

There are some benefits for companies which adopt benchmarking process. The major can be found in:

- The identification of weaknesses and strengths of competitors;
- Allows to measure the company performance;
- Helps the identification of strategic plans to recover competitiveness;
- Permits to facilitate the company's restructuring.

The main disadvantages refer to the need to review the interventions as they are implemented and every time the review is required by the evolving circumstances. In addition, the benchmarking process takes time to be implemented; therefore, in the short term we cannot see all the benefits of the process.

#### 4. DATA AND METHODOLOGY

Data analyzed in this paper refer to companies listed in the European markets and active in the media sector. This sector is defined by the code 5500 of the Industry Classification Benchmark. According to this classification, the code 5500 is composed by three subsector (identified by these codes: 5553 - broadcasting and entertainment which includes Producers, operators and broadcasters of radio, television, music and filmed entertainment [the subsector doesn't includes movie theatres, which are classified under Recreational Services]; 5555 - Media Agencies that refers to companies providing advertising, public relations and marketing services and includes also billboard providers and telemarketers; 5557 - Publishing which refers to publishers of information via printed or electronic media). Data collected refers to a total of 217 companies. We consider a time horizon of 10 years, from 2006 to 2015. We identified different measures for the economic benchmark and for the financial benchmark. These measures are represented as the mean of the 10 years. Regarding the economic benchmark, we have chosen return on investment (ROI), return on equity (ROE) and return on sales. In reference to the financial1 benchmark we identified the leverage (computed as the total shareholder's equity/ total liabilities and shareholder's equity ratio), the current ratio and the interest coverage ratio. Correlation analysis was performed between the variables in order to identify the most significant ones. Once the significant variables have been identified, it is necessary to set the threshold values that define the classes for both economic and financial benchmark. Using the tertiles division, we can find three classes for each selected variable. These classes are named: Best, average and worst. The model developed in this study can be included within the type of competitive benchmark. In particular, each class defined above is computed as follow:

- First level or best benchmark for companies which belong to one of the classes: Best variable 1 best variable 2; best variable 1 average variable 2; average variable 1 best variable 2;
- Second level or average benchmark for companies that belong to one of the classes: Average variable 1 average variable 2; best variable 1 worst variable 2; worst variable 1 best variable 2;

• Third level or worst benchmark for companies which belong to one of the classes: Average variable 1 - worst variable 2; worst variable 1 - worst variable 2 - worst variable 2.

Where variables 1 and 2 refer respectively to the variables of the economic and the financial benchmark.

Combining the economic and financial benchmark, we can obtain a total benchmark defined as:

- First level or total sector best benchmark for companies of one of the following classes:
  - Best financial benchmark best efficiency benchmark; best financial benchmark-average efficiency benchmark; average financial benchmark - best efficiency benchmark;
- Second level or total sector average benchmark for companies that belong to one of these classes:
  - Best financial benchmark worst efficiency benchmark; average financial benchmark-average efficiency benchmark; worst financial benchmark - best efficiency benchmark;
- Third level or total sector worst benchmark for companies which belong to one of the classes:
  - Average financial benchmark worst efficiency benchmark; worst financial benchmark - worst efficiency benchmark; worst financial benchmark - average efficiency benchmark.

#### 5. ANALYSIS AND FINDINGS

We collected data for 217 companies active in the media sector. Of these companies, 68 belong to the sector identified by the code 5553 - broadcasting and entertainment, 76 to the sector with code 5555 - Media Agencies and 73 companies belong to the sector identified by the code 5557 - Publishing. After collecting data, we compute the necessary variables to define the benchmark. In particular, we identified different variables for both economic and financial benchmark. Regarding the first one, we chosen as representative variables the following:

- ROI: Calculated as the Ebit/total liabilities and shareholders' equity ratio, it refers to the gain or loss generated by an investment;
- 2. ROE: Calculated as the net profit/shareholders equity ratio, it measures the profitability of the shareholder's investments;
- 3. Revenue per employee: Calculated as the revenue/number of employee, it is a measure of the productivity of a company and its use of the resources.

For the financial benchmark we initially identified:

- Leverage: We compute it as the total shareholder's equity/ total liabilities and shareholders' equity ratio, in this way it expresses the weight that equity owns in the financial structure;
- Current ratio: Calculated as the ratio current asset/current liabilities, it is a measure of the company's ability to face short and long term obligations;
- Interest coverage ratio: It is computed as the ratio Ebit/interest expense and it represents how many times the company could pay its actual interest with its earnings.

<sup>1</sup> Leverage represents one of the most important measures that affect the financial area of the enterprises (Intrisano et al., 2016). Other important measures for the financial area are current ratio and interest coverage (Intrisano et al., 2016).

Table 1: Economic benchmark: Variables correlation

	Revenue per employee	ROE	ROI
Revenue per	1,000000000		
employee			
ROE	-0,019973646	1,000000000	
ROI	0,099553048	0,075375363	1,000000000

ROE: Return on equity, ROI: Return on investment

Table 2: Financial benchmark: Variables correlation

	Current ratio	Leverage	Interest
			coverage
Current ratio	1,000000000		
Leverage	0,120140111	1,000000000	
Interest coverage	0,131124309	0,048651323	1,00000000

**Table 3: Economic benchmark** 

Tertiles	Revenue per employee	ROE
1° - worst	[0; 151,71)	$[-\infty; -7,55)$
2° - average	[151,71; 228,17)	[-7,55; 9,33)
3° - best	[228,17; 1)	$[9,33; +\infty)$

ROE: Return on equity

**Table 4: Financial benchmark** 

Tertiles	Leverage	IC
1° - worst	[0; 0,3098)	$[-\infty; 4,01)$
2° - average	[0,3098; 0,5094)	[4,01; 19,36)
3° - best	[0,5094; 1,00)	$[19,36; +\infty)$

Correlation analysis was conducted to identify the most significant variables. The results are summarized in the Tables 1 and 2.

For the economic benchmark we identified as most significant variables the "Revenue per employee" and the "Roe" as they have a lower correlation index. In the same way, for the financial benchmark we choose the variables "Leverage" and "Interest coverage" as most representative. After, we compute the tertiles distribution for the selected variables. The threshold values are given in Tables 3 and 4.

Combining the economic and financial benchmark, the total benchmark was achieved (Table 5).

In particular, focusing the analysis on the financial benchmark the results are given in Tables 6 and 7.

As we can note from the Table 8, 85 companies belong to the tertile "best," 46 belong to the tertile "average" and the remaining 86 belong to the tertile "worst."

Particularizing the study on the subsectors that form the media sector in order to find the most performing one, we obtain the following results in Table 9.

Comparing data from the Table 9 with that of table about financial benchmark of all the sample it can be seen that the subsector which has the best performance is the 5555 - Media agencies.

Table 5: Financial, economic and total benchmark

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Companies	Financial Economic Tota		Total	
•	benchmark	benchmark	benchmark	
1	Best	Best	Best	
2	Average	Best	Best	
3	Average	Average	Average	
4	Worst	Worst	Worst	
5	Best	Worst	Average	
6	Worst	Best	Average	
7	Average	Best	Best	
8	Best	Worst	Average	
9	Best	Average	Best	
10	Worst	Best	Average	
11	Average	Worst	Worst	
12	Best	Best	Best	
13	Worst	Average	Worst	
14	Worst	Worst	Worst	
15	Average	Best	Best	
16	Best	Best	Best	
17	Average	Best	Best	
18	Worst	Worst	Worst	
19	Worst	Average	Worst	
20	Best	Average	Best	
21	Best	Best	Best	
22	Best	Best	Best	
23	Best	Best	Best	
24	Average	Average	Average	
25	Worst	Worst	Worst	
26	Average	Worst	Worst	
27	Best	Worst	Average	
28	Worst	Average	Worst	
29	Best	Average	Best	
30	Average	Worst	Worst	
31	Best	Best	Best	
32	Best	Average	Best	
33	Worst	Average	Worst	
34	Best	Worst	Average	
35	Worst	Average	Worst	
36	Best	Average	Best	
37	Worst	Best	Average	
38	Average	Average	Average	
39	Best	Average	Best	
40	Best	Worst	Average	
41	Average	Worst	Worst	
42	Average	Worst	Worst	
43	Worst	Average	Worst	
44	Average	Best	Best	
45	Worst	Worst	Worst	
46	Worst	Worst	Worst	
47	Best	Best	Best	
48	Best	Average	Best	
49	Best	Worst	Average	
50	Best	Best	Best	
51	Best	Best	Best	
52	Best	Best	Best	
53	Average	Best	Best	
54	Worst	Worst	Worst	
55	Best	Best	Best	
56	Average	Average	Average	
57	Best	Average	Best	
58	Best	Worst	Average	
59	Best	Worst	Average	
60	Best	Best	Best	
61	Worst	Average	Worst	
62	Best	Average	Best	
63	Worst	Best	Average	
0.5	110131	Desi	rvciage	

(Contd...)

Table 5: (Continued)

Table 5: (Continued)

Companies	Financial	Economic	Total	Companies	Financial	Economic	Total
	benchmark	benchmark	benchmark	Pulling	benchmark	benchmark	benchmark
64	Worst	Worst	Worst	128	Worst	Average	Worst
65	Best	Average	Best	129	Best	Best	Best
66	Average	Best	Best	130	Best	Average	Best
67	Best	Best	Best	131	Best	Average	Best
68	Best	Average	Best	132	Worst	Average	Worst
69	Average	Worst	Worst	133	Best	Best	Best
70	Worst	Average	Worst	134	Best	Best	Best
71	Best	Average	Best	135	Worst	Worst	Worst
72	Worst	Worst	Worst	136	Best	Best	Best
73	Worst	Average	Worst	137	Best	Best	Best
74	Worst	Worst	Worst	138	Worst	Worst	Worst
75	Best	Best	Best	139	Best	Best	Best
76	Average	Average	Average	140	Worst	Worst	Worst
77 77	Worst	Worst	Worst	141	Average	Average	Average
78				141	Worst	Worst	Worst
70 79	Average Worst	Average Worst	Average Worst	142	Worst	Best	
79 30							Average
	Best	Best	Best	144	Worst	Average	Worst
31	Average	Best	Best	145	Worst	Best	Average
32	Best	Worst	Average	146	Best	Best	Best
33	Best	Average	Best	147	Best	Best	Best
4	Worst	Worst	Worst	148	Worst	Worst	Worst
35	Best	Best	Best	149	Worst	Best	Average
36	Average	Worst	Worst	150	Worst	Best	Average
7	Average	Best	Best	151	Average	Best	Best
8	Average	Average	Average	152	Worst	Average	Worst
9	Best	Best	Best	153	Average	Best	Best
00	Average	Best	Best	154	Best	Best	Best
1	Average	Worst	Worst	155	Average	Average	Average
2	Best	Average	Best	156	Average	Average	Average
13	Best	Best	Best	157	Worst	Worst	Worst
94	Worst	Worst	Worst	158	Worst	Best	Average
95	Average	Average	Average	159	Worst	Average	Worst
06	Average	Worst	Worst	160	Worst	Best	Average
7	Average	Worst	Worst	161	Worst	Average	Worst
98	Average	Average	Average	162	Worst	Best	Average
9	Worst	Worst	Worst	163	Best	Worst	Average
00	Best	Worst	Average	164	Best	Worst	Average
01	Worst	Worst	Worst	165	Best	Average	Best
.02	Best	Best	Best	166	Worst	Worst	Worst
.03	Best	Best	Best	167	Best	Best	Best
.04	Average	Worst	Worst	168	Worst	Worst	Worst
.05	Worst	Average	Worst	169	Average	Worst	Worst
06				170	-		
	Best	Best	Best		Average	Best	Best
07 08	Worst	Worst	Worst	171 172	Best	Best	Best
	Worst	Average	Worst		Worst	Best	Average
09	Average	Worst	Worst	173	Best	Average	Best
10	Average	Worst	Worst	174	Average	Worst	Worst
11	Best	Average	Best	175	Worst	Best	Average
12	Best	Worst	Average	176	Worst	Worst	Worst
13	Best	Average	Best	177	Worst	Average	Worst
14	Best	Best	Best	178	Best	Average	Best
15	Best	Best	Best	179	Worst	Best	Average
16	Worst	Worst	Worst	180	Best	Average	Best
17	Worst	Average	Worst	181	Worst	Worst	Worst
18	Worst	Worst	Worst	182	Average	Worst	Worst
19	Worst	Average	Worst	183	Worst	Average	Worst
20	Best	Best	Best	184	Worst	Worst	Worst
21	Worst	Average	Worst	185	Best	Best	Best
22	Best	Best	Best	186	Worst	Worst	Worst
23	Average	Average	Average	187	Best	Best	Best
24	Worst	Worst	Worst	188	Worst	Worst	Worst
-				189	Average	Worst	Worst
25	Average	Average	Average	107			
25 26	Average Best	Average Best	Average Best	190	Worst	Worst	Worst

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Table 5: (Continued)

Table 5. (Commueu)					
Companies	Financial	Economic	Total		
	benchmark	benchmark	benchmark		
192	Average	Best	Best		
193	Worst	Average	Worst		
194	Worst	Worst	Worst		
195	Worst	Worst	Worst		
196	Worst	Best	Average		
197	Worst	Worst	Worst		
198	Average	Best	Best		
199	Best	Average	Best		
200	Best	Average	Best		
201	Best	Average	Best		
202	Best	Best	Best		
203	Worst	Worst	Worst		
204	Worst	Worst	Worst		
205	Worst	Average	Worst		
206	Average	Average	Average		
207	Average	Worst	Worst		
208	Worst	Best	Average		
209	Worst	Average	Worst		
210	Worst	worst	Worst		
211	Best	Worst	Average		
212	Worst	Worst	Worst		
213	Best	Average	Best		
214	Best	Average	Best		
215	Worst	Worst	Worst		
216	Worst	Worst	Worst		
217	Best	Best	Best		

Table 6: Financial benchmark, number of companies per range

Tertiles	Average (%)
Best	84 (38.71)
Average	48 (22.12)
Worst	85 (39.17)
Total	217 (100.00)

Table 7: Economic benchmark, number of companies per range

8-	
Tertiles	Average (%)
Best	74 (34.10)
Average	68 (31.34)
Worst	75 (34.56)
Total	217 (100.00)

In fact in this subsector we have 50.00% of companies with best benchmark respect to 38.71% with best benchmark in total sector. Conversely the worst subsector is 5553 - broadcasting and entertainment with 50.00% of companies included in the worst range.

Comparing data from the Table 10 with that of table about the economic benchmark of all the sample we can see that the subsector 5553 - broadcasting and entertainment has the best performance with 39.71% of companies with best benchmark respect to 34.10% with best benchmark in total sector. Conversely the worst subsector is 5557 - publishing with 39.73% of companies included in the worst range. This percentage is higher than that of all the sample (34.56%).

Table 8: Total benchmark, number of companies per range

Tertiles	Average (%)
Best	85 (39.17)
Average	46 (21.20)
Worst	86 (39.63)
Total	217 (100.00)

Table 9: Financial benchmark, details per sector

Tertiles		Sector	
	5553	5555	5557
Best (%)	29.41	50.00	35.62
Average (%)	20.59	23.68	21.92
Worst (%)	50.00	26.32	42.47
Total	100.00	100.00	100.00

Table 10: Economic benchmark, details per sector

Tertiles		Sector		
	5553	5555	5557	
Best (%)	39.71	30.26	32.88	
Average (%)	30.88	35.53	27.40	
Worst (%)	29.41	34.21	39.73	
Total	100.00	100.00	100.00	

Table 11: Total benchmark, details per sector

Tertiles			
	5553	5555	5557
Best (%)	33.82	43.42	39.73
Average (%)	20.59	25.00	17.81
Worst (%)	45.59	31.58	42.47
Total	100.00	100.00	100.00

Comparing data from the Table 11 and data of total benchmark of all the sample we can find which is the best subsector. The subsector 5555 - Media agencies shows an higher percentage of best performing companies than the percentage of best companies in the total sample (43.42% vs. 39.17%). This information reflects the trend of financial benchmark. In the other hand, the worst subsector is 5553 - broadcasting and entertainment (45.59% vs. 39.63%).

#### 6. CONCLUSION

Benchmark has become increasingly important due to the changes that affected the overall economic and financial system. Companies have seen increasing the need for competitors information and consequently they should have a tool to parameterize the formulation of winning strategies. We analyzed data for 217 companies, listed in various European markets and active in the Media sector. We calculated different indexes which are necessary to develop the benchmark. These are represented by ROE, ROI and revenue per employee for the economic benchmark and by current ratio, leverage and interest coverage ratio for the financial benchmark. Later, a correlation analysis was conducted to select correctly the variables: We select ROE and revenue per employee

for the economic benchmark and leverage and interest coverage for financial benchmark.

For both types of benchmark we defined three classes and the corresponding limit values. Companies should tend to be placed in the best and average range of each variable. Combining the economic and financial benchmark we found the total benchmark. About the total benchmark our results show that the most of companies have best or worst benchmark. So, we have investigated which are the best and the worst subsector. In particular, the subsector 5555 - Media agencies is the one that has contributed most to the positive performance of the media sector. Conversely, the worst subsector is 5553 - broadcasting and entertainment. Future extensions of the research could concern the analysis of successful benchmark application.

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