FOURTEEN PROCESSES DEFINING COMPETITIVE ADVANTAGE OF BRAZILIAN TRADE CONTRACTORS

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Abstract
Brazilian Trade Contractors (TC), or Subcontractors and Specialty Contractors, are main players in the Brazilian Building Industry competitiveness. They are part of a highly fragmentized and informal chain, with a great diversity in their value propositions and in their organizational forms. Nonetheless, despite their heterogeneity, most of them are SMEs lacking resources, capabilities, and other assets. This lack of assets and a competition led by the lowest bid offering produces the bankruptcy of 50% of them in their fourth year of operation, with negative consequences in the competitiveness of the whole Industry. Hence, understanding the causes of that performance is an important issue to improve TC management practices and, consequently, their performance. This paper focuses on internal factors, specifically, on the internal processes that allow Trade Contractors to achieve a good performance in their specific competitions. For this purpose, data were gathered from a qualitative research in 24 Trade Contractors with good performance and in 7 other agents that hire them, mainly in Sao Paulo - Brazil. Two are the main results: First, fourteen processes conducted by TC were identified. Second, those processes are performed in different configurations in accordance with different value propositions and size of the TC.

Keywords: Trade contractors, subcontractors, competitiveness, process, Brazil.

INTRODUCTION

The Construction Industry is a fundamental sector of the Brazilian economy. It is composed of agents that perform construction activities, industrial activities associated with it (suppliers of raw materials and equipment for the construction process) and support services (CBIC, 2001). In it, the construction activity accounts for 61.2% of the GDP in the industry - or US$ 76 billion - and 69.3% of its workforce (Abramat, 2010). The main agents that perform the activity are the construction companies and Trade contractors (TC), known as subcontractors and specialty contractors (Oviedo Haito, 2010).

Between these two agents, TC is very important for its systemic impact on the sector performance. This importance can be illustrated by the fact that they have a significant

participation in the sector with over 350,000 companies operating in it (Cardoso et al., 2007), which are mostly micro, small and medium businesses - SME, 93% have less than 29 workers (Cardoso et al., 2007). Their participation is paramount in the production process of the 'building product'; besides, TC are important to projects success (Haltenhoff, 1995; Love, 1997) and also increase the sector competitiveness requires to update TC technological and managerial capacity (Cardoso, 2003).

Despite this importance, in Brazil, 50% of TC go bankrupt in their fourth year of operation (SEBRAE-SP, 2008), due to deficiencies in internal and external factors.

Oviedo Haito (2010) summarized the deficiencies related to internal factors of TC. The lack of resources and competences or even the the lack of strategic assets (Amit and Schoemaker, 1993); understanding them as "a firm-level factor that has the potential to contribute economic benefits [to the company]" (Galbreath, 2004, p. 106). One of such assets is the Organizational Capital, and also the processes performed by the firm.

In a related research, as an external factor, Oviedo Haito (2010) found that a general perception in TC is that the agents that hire them impose predatory conditions for their survival in the market, being the relationship with its contractors antagonistic (Hinze and Tracey, 1994; Kumaraswamy and Matthews, 2000) and paradoxical, since their contractors impose high requirements, but hire TC at the lowest price (Pereira, 2003), and the poor conditions provided for many prime contractors at the construction site prevent TC from achieving the desired results.

In this context, those requirements are expressed in terms of quality, scope, time and cost (Kale and Ardity, 2003; Kormaz and Messner, 2003), while the adverse working conditions in construction sites refer mainly to the physical space for production, the means and space to transport materials and workers, the unfinished products of other trades, and changes in technical sequences of site works (Oviedo Haito, 2010).

In this Brazilian TC context, how do they organize in order to achieve a good performance in their specific competitions?
The aim is to contribute to fill the gap of TC's organizational knowledge and to discuss which processes TC of good performance deploy in Brazil. Due to the importance of this matter, other organizational dimensions are out of scope.

THE PROCESS APPROACH OF A FIRM PERFORMANCE

Mastering the factors that determine a firm's success is every manager's dream. Activity-based view as in Porter's 5 forces (Porter, 1980) and Barney's resource-based view (Barney, 1991), are the main conceptual theorizations of how firms attain success in the market (Ramos-Rodriguez, Ruiz-Navarro, 2004). In those theories, a superior performance, the so-called competitive advantage (Porter, 1985) or the Sustainable competitive advantage (Hoffman, 2000) results from different sources, such as the activities they conduct, or from what the firm have to do to reach their results.

On the other hand, as it occurs also in Brazil (SEBRAE-SP, 2008), Schaufelberger (2003) argue that the Construction Industry has the third highest rate of bankruptcy among all industries in the United States. Moreover, Thornhill and Amit (2003) outlined the value of

studying businesses failures as a source of knowledge about firms performance, and not only from studying their success. In this sense, among others, works by Schleifer (1987), Russel (1991), Kale and Arditi (1998) and Schaufelberger (2003) converged on some internal and external factors related to the failure of the Construction Industry firms, specially Main contractors and Trade contractors.

Based on those works, among the internal factors, Oviedo Haito and Cardoso (2009) pointed out as weaknesses in their business and production management, lack of resources, oversight relationship with customers and other agents involved in their external environment, and limited bargaining power caused by the large number of TC and their lack of associative forms, as in unions. Among the external factors, Oviedo Haito (2010) outlined the conditions of construction sites and the conditions of competition imposed on TC. Also, Kale and Arditi (1998) discussed that organizations are open systems with the mission of transforming inputs into outputs in an efficient and effective manner. Those authors highlighted two factors, or key processes to the firm survival: 1) to receive enough inputs from their environment (external processes) and 2) to have the capacity to transform those inputs into outputs (internal process).

But TC compete in building different trades and, thus, in different competitions. Based on Porter's work (Porter 1980), Kale and Arditi (2003), and Kormaz and Messner (2003) described that the competitive positioning of the firms of the Construction Industry is determined by mode (cost, time, quality and innovation) and by the scope of their specific competition (segment, mix of products and clients, etc.). Hence, different factors are required for different competitive positioning.

In addition, Oviedo Haito (2010) discussed that TC are service firms. To Vargo and Lusch (2008), service firms reach the value of the service with the co-production of their clients. This is applicable to TC, because their performance in cost, time, quality or innovation depends on adequate conditions such as: well finished previous trades, adequate information about the work done, an adequate supply of materials, and so on; provided by other agents involved in the production process.

Because of that, TC can only propose a potential performance, a promise that the firm makes to clients to deliver a particular outcome (Bititci et al., 2004). That promise is the value proposition of the firm. Oviedo Haito (2010) discussed that, to TC, that value proposition is composed of several factors such as resources, competences, activities and performances that are part of the firm and that can be delivered to their customers for the production of their specific trades.

Therefore, what factors must be considered to analyze TC performance? Porter´s (1985) activities or Barney's (1991) resources? Alternatively, Ray, Barney e Muhanna (2004, p.35) stated: "*Activities, routines, and business processes are the mechanisms through which resources and capabilities get exposed to market processes where their ultimate value and ability to generate competitive advantages are realized*".

Hence, a process approach to studying firms, such as TC, is useful to investigate TC performance. It also has another advantage; the analysis of firms on a process-based view (Gruchman, 2009) allows linking other factors such as resources, competences and activities for each process identified.

For a Main contractor, Lu, Shen and Yam (2008) concluded that a good performance is related to mastering factors such as Project Management, Organizational Structure, Organization Resources, Competitive Strategy, Relationships, Bidding Techniques, Marketing and Technology.

For Parung and Bititci (2006) and to Galbreath (2004), factors such physical assets, financial assets, organizational capital, relationship capital, human capital and reputational assets, are factors generating value to the firm. By developing a model to understand construction firms performance, productivity specifically, Thomas et al. (1990) analyzed construction firms as open conversion systems, relating factors such as labor, capital, material, equipment, organizational structure, products and projects, among others, with three generic stages: input factors (e.g. physical resources), internal environment factors (e.g. organizational competences), and output factors (e.g. performance, reputation).

One can thus say that factors such as physical assets, financial assets, organizational capital, relationship capital, human capital and reputational assets can be used to represent that a firm has to reach a certain performance and, from this, to represent their value proposition.

Specifically, based on works by Shimitzu (2003) and Pereira (2003), Cardoso (2003) found nine processes performed by Brazilian TC, namely: Planning and Management, Commercial, Design, Production Planning, Human Resources, Occupational Safety and Technical Assistance.

Nevertheless, according to the works by Schleifer (1987), Russel (1991), Kale and Arditi (1998), Stewart et al. (2003), Schaufelberger (2003), Lu, Shen and Yam (2008), and Maneschi and Melhado (2010) - in Construction Industry - and the works by Amit and Schoemaker (1993), Eisenhardt and Martin (2000), Thornhill and Amit (2003), and Flamholtz e Hua (2003) - in management science-, firms success depends on how firms can capture more resources from their external environment and, in an efficient and effective manner, transform them into outputs to meet the requirements of their specific competitions.

For that, as a way of improve their performance, Oviedo Haito (2010) discussed the importance of TC to execute functions such as: Information Technology (Stewart et al., 2003), Financial and Accounting, Research and Development (R&D), Marketing (Slack et al., 1996), and to divide the design process into Product Design and Design for Production (Maneschi and Melhado, 2010).

Consequently, Oviedo Haito (2010) outlined the importance of managing 13 processes, namely: Planning and Management, Commercial, Information Technology, Technical Assistance, Marketing, Financial and Accounting, Procurement, Product Design, Design for Production, Production Planning, Human Resources, Occupational Safety, and Production Process. Table 1 shows a summarized description of these processes. It is important to mention that processes such as legal, R&D, among others, are important. Nevertheless, they are not always feasible for Brazilian TC, specially for SMEs, as discussed by Oviedo Haito (2010).

Process	Description
Planning and Management	Management of strategy, objectives, division of labor and bussines management indicators (physical and financial)
Commercial	Management of contracts life cycle of building trades, from bidding,

	formalization, execution and closing.
Information Technology	Management of a support system for decision-making and management of the documentation of their information
Technical Assistance	Management of customers´ satisfaction related to the product built and its performance
Marketing	Management of the relationships of TC with their external environment (e.g. customers, suppliers, etc.) as to assets development
Financial and Accounting	Management of financial transactions, accounting and tax issues related to TC business and operation
Procurement	Management of internal and external logistic efforts (acquisition of goods and services, transport and distribution of materials on site, etc.)
Product Design	Management of the design defining physical attributes for the trade to be built
Design for Production	Management of the design defining the main characteristics and conditions of what the trade will build
Production Planning	Management of the strategy for the execution of trades and management of its requirements in terms of resources and competences
Human Resources	Management of people in the firm
Occupational Safety	Management of safety and health at work and its suitability with existing regulations in force
Production	Management of the conditions and of the organization for the execution of the trade, as well as its conservation and the preservation of other existing trades

Table 1: *Identified Processes for Brazilian Trade Contractors (OVIEDO HAITO, 2010)*

Therefore, assets composing value proposition and processes performed by TC are used to understand some TC sources of competitive advantage.

RESEARCH METHOD

For this research, we had a main question: how is good performance in TC are? In order to approach it, we studied what processes TC perform and their relationship with a number of factors. The research method used was a qualitative research involving twenty four TC and seven other agents that hire TC. All of them were selected by purposeful sampling (Coyne, 1997), specifically, by Intensity sampling (Patton, 1990) from good performance TC. Data was collected in open and in semi-structured questionnaires.

The research has two main stages. First, we inquired seven agents who hire TC, being one Construction Project Manager, two Construction Quality Managers, a Construction Technical Manager –all of them from top Brazilian Main Contractors–, a consultant on SME issues, a Product Manager from a Construction Mortar manufacturer, and a representative of an association of laminated flooring manufacturers. They were questioned on: 1) What good performance characteristics do TC have? and 2) What building trades are best performed in São Paulo?

Analyzing their answers, we got a list of 18 building trades, and we understand that there is not a convergence about what characteristics define good performance for a TC. Even more, we understand that the factors they use to evaluate good performance are primarily related to cost, time, quality and scope, and on what assets TC have to build their trades, case by case.

In the second stage, we associated those assets to what Parung and Bititci (2006) and Galbreath (2004) considered as strategic assets and, in order to choose what TC to research, we sought acknowledged TC for their good performance in their specific trade. Then, TC were questioned about what processes they deploy to perform their specific trades. We interviewed TC representatives from company directory, such as the owner or a representative who knows how the firm works. As not all of the TC representatives interviewed had higher education, they were not asked directly about what processes they deploy. Instead, they were questioned about some activities related to some of the processes studied. For example, for the production planning process, they were questioned about what kind of preparations they have before the execution of their specific trades.

Interviewed TC were asked about the identified factors: assets that compose their value proposition (Parung and Bititci, 2006; Galbreath, 2004; Bititci et al., 2004), the age of the firm (Kale and Arditi, 1998), the size of the firm, the time they spend in producing their building trades; and asked about the processes they deploy (Oviedo Haito, 2010).

Data gathered were tabulated, and the identified factors were compared against the 13 processes proposed by Oviedo Haito (2010).

As a result, we interviewed 24 TC that build trades included in the 18 building trades recommended by the agents that hire them. Table 2 shows the data collected.

RESEARCH ANALYSIS AND RESULTS

Firm	Building Trade	Firm Age (years)	Number of employees	Production Time (month of 22 days)	Firm Size	Physical Assets	Financial Assets	Organizational Assets	Human Capital	Relational Capital	Reputational Assets	Quantity of assets	Procurement	Human Resources	Production	Commercial	Technical Assistance	Financial and Accounting	Production Planning	Occupational Safety	Planning and Management	Marketing	Design for Production	Information Technology	Product Design
TC_09	External coating and Concrete structures	20	1250	16	BIG	A	B	C	D		F	5	1	1	1	1	1	1	1	1	1	1	1	1	
TC_23	Masonry, internal and external coating, and subfloor	15	500	6	BIG	A	B	C	D	E	F	6	1	1	1	1	1	1	1	1	1	1	1		1
TC_07	Foundations	75	400	2.5	BIG	A	B	C	D		F	5	1	1	1	1	1	1	1	1	1	1	1	1	1
TC_05	Masonry	4	376	4	BIG	A	B	C	D	E	F	6	1	1	1	1	1	1	1	1	1	1	1		
TC_24	Masonry	11	350	8	BIG	A	B	C	D	E	F	6	1	1	1	1	1	1	1	1	1	1	1	1	1
TC_02	Masonry, internal and external coating, and subfloor	12	295	15	BIG	A	B	C	D		F	5	1	1	1	1	1	1	1	1	1	1		1	
TC_01	Masonry, internal and external coating, and subfloor	15	200	16	BIG		B	C	D			3	1	1	1	1	1	1	1	1	1		1		
TC_08	Water proofing systems	26	200	6	BIG	A	B	C	D		F	5	1	1	1	1	1	1	1	1	1	1	1	1	1
TC_10	Water proofing systems	17	180	8	BIG	A	B	C	D		F	5	1	1	1	1	1	1	1	1	1	1	1	1	1
TC_22	Dry Wall	1	100	5	BIG	A	B	C	D	E	F	6	1	1	1	1	1	1	1	1	1	1	1		
TC_03	Masonry, internal and external coating, and subfloor	3.5	96	16	MED	A	B		D		F	4	1	1	1	1	1	1		1		1			
TC_04	Fenestration, doors, frames and hardware	2	46	8	MED	A	B	C	D		F	5	1	1	1	1	1	1	1	1	1	1	1		1
TC_15	Laminate flooring	5	41	0.045	MED		B		D		F	3	1	1	1	1	1	1	1		1	1			
TC_16	Dry Wall	4	37	8	SMALL	A	B	C	D	E	F	6	1	1	1	1	1	1	1	1	1	1			
TC_17	Dry Wall	2.5	30	7	SMALL	A	B		D	E	F	5	1	1	1	1	1	1	1	1	1	1	1	1	
TC_19	Fenestration, doors, frames and hardware, glazing, and metal panels	7	29	12	SMALL		B	C	D	E	F	5	1	1	1	1	1	1	1	1	1	1			
TC_21	Fenestration, doors, frames and hardware, glazing, and metal panels	37	24	10	SMALL	A	B	C	D	E	F	6	1	1	1	1	1		1	1	1	1	1		1
TC_14	Gypsum Plaster	16	22	3	SMALL	A	B		D		F	4	1	1	1	1	1	1	1	1	1	1			
TC_11	Laminate flooring	13	17	0.045	SMALL	A	B	C	D		F	5	1	1	1	1	1	1	1	1	1	1	1		
TC_13	Laminate flooring	18	12	0.09	SMALL	A		C	D		F	4	1	1	1	1	1	1	1	1			1		
TC_12	Masonry, internal and external coating, and subfloor	6	12	4.5	SMALL				D			1	1	1	1	1	1	1	1	1	1	1			
TC_06	Electrical wiring and communications	17	10	1.59	SMALL	A	B	C	D	E	F	6	1	1	1	1	1	1	1	1	1	1	1		
TC_20	Laminate flooring	8	6	0.045	MICRO			C	D		F	3	1	1	1	1	1	1	1	1	1				
TC_18	Electrical maintenance	3	2	0.23	MICRO		B		D		F	3	1	1	1	1	1	1	1	1	1				
						18	21	18	24	9	22		24	24	24	24	24	23	23	23	22	20	15	7	7

Note: SEBRAE-SP (2008) criteria for firm size: Large (> 100 employees and turnover > US$ 1.33 million), Medium (99 < employees < 50 and turnover < US$ 1.33 million), Small (49 < employees < 10 and turnover < US$ 133.333), Micro Small (employees < 10)

Table 2: *Characteristics of 24 TC studied (Adapted from Oviedo Haito, 2010)*

By analyzing data from Table 2, we found:
a) Even for TC that perform the same building trade, the factors investigated (firm age, firm size, firm assets / value propositions and firm production time) vary without an identified pattern, showing the heterogeneity of TC in what do they do and the heterogeneity in their proposal of assets to build their trades. Despite this disparateness, we found that TC perform different configurations of the 13 processes investigated.

b) Regardless of the different factors studied, we only found that there is some relationship between the 13 processes and the size of the TC, identifying a tendency that the more employees the firm has, the more processes they perform.

Another issue we found is that the frequency of the processes identified varies, and we can classify the sample studied into four categories:

1) Processes always performed by TC (Procurement, Human Resources, Production, Commercial, Technical Assistance); related to the core of the production capacity of TC, from gain a bid, procure the people and resources, produce it, and to the warranty of the building trade.

2) Processes almost always performed by TC (Financial and Accounting, Production, Planning, Occupational Safety); associated to a major concern of TC with regard to the consequences to the people of the company and their performance to their external environment. Those processes are strongly linked to the production process.

3) Processes frequently performed by TC (Planning and Management, Marketing, Design for Production); related to a major concern about the firm organization, about the relationship of the TC with their competitive environment, and to the improvement of their results through implementing support activities.

4) Processes not often performed by TC (Information Technology, Product Design); being other support activities, and their practice is not generalized among TC. They are related to the necessity of formalize the communication across the organization and, mainly, with the production team through more detailed specifications.

So, we can say that Brazilian TC have four organizational stages: 1) oriented to control their production capacity; 2) oriented to control the impacts of their production on their interested parties; 3) oriented to control the impacts of their production in front the performance expected by their external environment; and 4) oriented to control the firm organization and, mainly, to control the quality of the information across the organization.

Therefore, despite this heterogeneity in TC characteristics, one can say that there is a core of processes performed by TC (Procurement, Human Resources, Production, Commercial, and Technical Assistance) and, from them; the TC deploy others in order to meet their competitive environmental demands.

Now, by analyzing supply of strategic assets, we understood:

There is no relationship between the firm size and the scope traded, or the age and scope of the company marketed. It depends on the strategic positioning of TC.

Despite the difference between the assets they offer, all the studied TC offer the manpower to produce their building trades. The second scope, reputational capital, was the most supplied, which indicates that most of TC are hired by references to their good performance in previous services. The third element commercialized corresponds to the financial asset, which indicates that the TC prepare their bids based on their ability to finance their own production.

Fourthly, we have the organizational capital and physical assets. This lower amount of the supply of those assets can mean that many TC are hired just to perform their building trades, and the contractor provides the physical means necessary for production. In the case of organizational capital, one of the reasons identified for the TC not providing such capital was that the Main Contractor assumes all production management, subcontracting only the provision of means of production that will be managed directly by them. An example is TC12, which expressed that he only recruits and provides manpower to perform masonry walls

The asset less provided by these companies is the relationship capital. Some causes were identified as the lack of bargaining power, lack of collaboration in networks or trade unions, and lack of support obtained from external agents.

Thus, by analyzing the variation of assets and processes owned by TC, we understood that those elements are not randomly configured, but they are established to meet the requirements of their competitions. That response can be delivered or undelivered, and we also understood that the configuration of value proposition in TC is a response that can be managed within another process. Hence, the core of the response given by TC to their environment (in terms of what assets they offer to build their trades) is defined in the 14th process, the Strategic Process.

CONCLUSION

Researching organizational issues, especially TC, is a major challenge. This is mainly due to the heterogeneity of the trades built by TC and because of the diversity in the set of resources and competences needed by TC to build their trades. Nevertheless, 14 processes defining TC performance are found, specifically: Strategic Process, Planning and Management, Commercial, Information Technology, Technical Assistance, Marketing, Financial and Accounting, Procurement, Product Design, Design for Production, Production Planning, Human Resources, Occupational Safety, and Production Process.

Also, the process approach used to analyze different types of TC was useful to identify some patterns. In this sense, despite the TC specific trades built, our approach allowed finding:

- What TC do, in terms of processes deployed, to build their trades;
- What kind of TC their clients want, as a function of what do they do;

Thus, by studying the TC processes, four processes profiles were found, essentially related to the size of the TC analyzed.

Different sets of processes were understood to be related to different value propositions and that the value proposition of TC is defined, in a manner delivered or not, by a Strategic process. In addition, it was understood that TC are heterogeneous. Hence, the fact of their

developing more processes or of offering more assets in their value proposition, does not mean that they are more capable, but more adequate to compete in their specific competitions.

As in other countries, Brazilian TC are mostly SME and face similar challenges to its worldwide peers. One of them is the challenge of growing. Consequently, we can say that issues as the organizational development is a similar one. By analyzing the set of processes a TC deploys is a way to approach this issue.

So, in order to improve their results and their competitiveness as a consequence, TC must set a determinate set of processes, in order to equilibrate their organizational development stage with the requirements of the specific competitions they participate. That equilibrium can be reduced to two aspects: 1) to produce, and 2) guarantee the adequate quality of their (larger) production scale.

This paper limited the discussion to the processes performed by TC. Related issues such as the resources, competences and specific activities identified in the TC studied are out of the scope of this paper. In spite of that, we encourage the development of that kind of research, mainly because those elements allow TC to deploy their processes, in a competitive manner. Another limitation is the scale of our research, which affects the consolidation of the profiles of processes deployed by TC.

REFERENCES

Abramat, *Perfil da Cadeia Produtiva da Construção e da Indústria de Materiais,* 2010, (available online http://www.abramat.org.br/ [Accessed on 09/27/2010]). (*in portuguese*)

Amit, R., Schoemaker, P., *Strategic assets and organizational rents,* Strategic Management Journal, v. 14, p. 33 – 46, 1993.

Barney, J. B., *Firms resources and sustained competitive advantage*. Journal of Management, v. 17, No.1, 99-120, 1991.

Bititci, U., Martinez, V., Albores, P., Parung, J., *Creating and managing value in collaborative networks*, International Journal of Physical Distribution & Logistics Management, v. 34, n. 3/4, p. 251-268, 2004.

Cardoso, F. F. et al., *Capacitação e certificação profissional na construção civil e mecanismos de mobilização da demanda,* In: EPUSP, ABRAMAT e OIT (Org.) São Paulo, 2007. (*in portuguese*).

Cardoso, F. F., *Certificações 'setoriais' da qualidade e microempresas. O caso das empresas especializadas de construção civil*. Tese (Livre-docência) - Escola Politécnica, Universidade de São Paulo - EPUSP. São Paulo. 2003. (*in portuguese*).

Cardoso, F. F., *Estratégias empresariais e novas formas de racionalização da produção no setor de edificações no Brasil e na França. Parte 1*, Est. Econ. da Construção, SindusCon-SP, São Paulo. 1997. (*in portuguese*).

CBIC - Câmara brasileira da indústria da construção, *Macrossetor da construção*, 2001, (available online http://www.cbicdados.com.br/files/textos/037.pdf [Accessed on 06/02/2008]) (*in portuguese*).

Coyne, I.T., *Sampling in qualitative research. Purposeful and theoretical sampling; merging or clear boundaries?* Journal of Advanced Nursing, v. 26, pp. 623–630, 1997.

Eisenhardt, K., Martin, J., *Dynamic capabilities: what are they?* Strategic Management Journal, v.21, pp. 1105 – 1121, 2000.

Flamholtz, E., Hua, W., *Searching for competitive advantage in the black box*. European management journal. v. 21, n. 2, pp. 222-236, 2003.

Galbreath, J. T., *Determinants of firm success: a resource-based analysis*. Curtin University of Technology. Sydney, 2004.

Gruchman, G. *The Process-based View of a company: Principles and Applications – Part I*. 2009. (available online: < http://www.businessprocesstrends.com/publicationfiles/01-09-ART-Process-BasedViewOfCompany-Guchman.doc-final.pdf > [Accessed on 04/28/2009]).

Haltenhoff, C. E., *Discussion: The contractor-subcontractor relationship: the subcontractor's view*, Journal of Construction Engineering and Management, 121: 332-333, 1995.
Hinze, J., Gambatese, J., *Factors That Influence Safety Performance of Specialty Contractors*, Journal of Constr. Eng. and Management 129: 159- 164, 2003.

Hinze, J., Tracey, A., *The contractor-subcontractor relationship: the subcontractor's view*, Journal of Construction Engineering and Management, v. 120, n. 2, pp. 274 - 287. June, 1994.

Hoffman, N., *An examination of the sustainable competitive advantage concept: past, present and the future*. Academy of Marketing Science Review. No.4, 2000. (available online: <www.amsreview.org/articles/hoffman04-2000.pdf> [Accessed on 04/02/2009]).

Kale, S., Arditi, D., *Business failures: liabilities of newness, adolescence, and smallness*, Journal of Construction Engineering and Management, v. 124, n. 6, pp. 458 - 464, 1998.

Kale, S.; Arditi, D., *Differentiation, Conformity, and Construction Firm Performance. Journal of Management in Engineering*, v. 19, n. 2, pp. 52- 59. April, 2003.

Korkmaz, S., Messner, J., *Competitive positioning and continuity of construction firms in international markets*. Journal of Management in Engineering, v. 24, n. 4, pp. 207 - 216. November, 2008.

Kumaraswamy, M. M., Matthews, J. D., *Improved subcontractor selection employing partnering principles*, Journal of Management in Engineering, v. 16, n. 3, pp. 47 – 56, 2000.

Love, S., *Subcontractor partnering: I'll believe it when I see it* Man. in Eng. 13: 29- 31. 1997.

Lu, W., Shen, L., Yam, M., *Critical success factors for competitiveness of contractors: China Study*. Construction Engineering and Management, v. 134, n.12, pp. 972 – 982, Dec., 2008.

Maneschi, K., Melhado, S., *Scope of Design for Production of Partition Walls and Facade Coverings*, Architectural Engineering and Design Management, Vol. 6, N. 1, 3-17(15), 2010.

Oviedo Haito, R. J. J., Cardoso, F. F., *Competitividade para a sobrevivência das subempreiteiras de obra*, In: VI Simpósio Brasileiro de Gestão da Economia da Construção - O desafio das novas competências organizacionais e profissionais na construção civil (SIBRAGEC 2009), 2009, João Pessoa-PA. 10pp. (*in portuguese*).

Oviedo Haito, R., J. J., *Caracterização das empresas executoras de serviços de obras baseada nos seus ativos estratégicos*. Dissertação (Mestrado) - Escola Politécnica, Universidade de São Paulo. São Paulo, 2010. (*in portuguese*).

Parung, J., Bititci, U., *A conceptual metric for managing collaborative networks*, Journal of Modelling in Management, v. 1, n. 6, pp. 116-136, 2006.

Patton M.Q. Qualitative Evaluation and Research Methods. 2nd edn. Sage, Newbury Park, California. 1990.

Pereira, S. R., *Os subempreiteiros, a tecnologia construtiva e a gestão dos recursos humanos nos canteiros de obras de edifícios*. Dissertação (mestrado) – EPUSP, São Paulo. 2003. (*in portuguese*).

Porter, M., *Competitive Advantage*, Free Press, New York, 1985.

Porter, M., *Competitive Strategy*, Free Press, New York, 1980.

Ramos-Rodriguez, A. R, Ruiz-Navarro, J.,*Changes in the Intellectual Structure of Strategic Management Research: A Bibliometric Study of the Strategic Management Journal, 1980-2000*. Strategic Management Journal, v. 25, n. 10, pp. 981-1004, 2004.

Ray, G., Barney, J. B., Muhanna, W. A. *Capabilities, business processes, and competitive advantage: choosing the dependent variable in empirical tests of the resource-based view*. Strategic Management Journal, v. 25, n.1, pp. 23-38. 2004.

Russel, J, *Contractor Failure: Analysis*, Journal of Performance of Constructed Facilities, v. 5, n. 3, pp. 163 - 180, 1991.

Schaufelberger, J., *Causes of Subcontractor Business Failure and Strategies to Prevent Failure*. ASCE Construction Research, 2003, 120, 71, 2003.

Schleifer, T. C., *A contractor's survival guide managing with confidence*, Asian Press, McLean, Va., 1987.

SEBRAE-SP, *Onde estão as micro e pequenas empresas em São Paulo?* 2008. (available online http://www.biblioteca.sebrae.com.br/ [Accessed on 09/10/2008]) (*in portuguese*).

Slack, N. et al., *Administração da Produção*. São Paulo: Editora Atlas, 1996. 727pp. (*in portuguese*).

Stewart et al., *Sustainable development of construction small and medium enterprises (SMES): it impediments focus*. 2003. (available online http://itc.scix.net [Accessed on 08/31/2008]).

Thomas, H. R. et al., *Modeling Construction Labor Productivity*. Journal of Construction Engineering and Management, v. 116, n. 4, pp. 705-726. Dec, 1990.

Thornhill, S., Amit, R., *Learning from failure: Organizational mortality and the resource-based view*, Organization Science, v. 14, No. 5, September–October, 2003.

Vargo, S., Lusch, R., *Why "service"?* Journal of the Academic Marketing Science. v.36, pp. 25–38, 2008.