

**The influence of institutional environment in the execution of  
complex projects for accessing the base of the pyramid: a case study of  
brazilian utilities services organizations**

**A influência do meio ambiente institucional na execução de projetos  
complexos para acesso à base da pirâmide: um estudo de caso de  
organizações de serviços de utilidades brasileiras**

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**Abstract:** World population shall reach 9 billion by the end of 2050 (United Nations DESA, 2014). The demand for basic services like energy, water and sanitation will increase, particularly for those at the base of pyramid. The challenge for the utilities services organizations in Brazil is how to deal with an ever-changing institutional environment in order to fulfill its social objective in an operational and economic efficiency. Organizations will have to innovate in their strategies to access the base of the pyramid, as they are different from developed market. These innovations will be implemented through projects. Understand the complexities of these projects is fundamental for the strategies' implementation. This research answered the question “*How does the participation of the State in utilities services organizations impact the execution of complex projects created to serve the base of pyramid markets?*”. It is based

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on a multiple case study, with a qualitative and exploratory nature. Two utilities service organizations were selected and data collected based on semi-structured interviews. A software was used for content analysis to analyze the propositions of this study. Complexities dimensions for project execution were identified, the State influence on these projects and organizational strategies. This research contributes to a better understanding of the variants of the institutional elements with an impact on the organizational strategies. It reveals the need for a better understanding and definition of specific business model to attack the market opportunities at the base of pyramid. Our findings may be used by organizations to establish specific strategies for this market.

**Keywords** – Strategies; Complex Projects; Base of the Pyramid; Institutional Environment; Project Management.

**Resumo:** A população mundial deve chegar a 9 bilhões até o final de 2050 (United Nations DESA, 2014). A demanda por serviços básicos como energia, água e saneamento aumentará, especialmente para aqueles na base da pirâmide. O desafio para as organizações de serviços públicos no Brasil é como lidar com um ambiente institucional em constante mudança a fim de cumprir seu objetivo social com uma eficiência operacional e econômica. As organizações terão que inovar em suas estratégias para acessar a base da pirâmide, uma vez que são diferentes do mercado desenvolvido. Estas inovações serão implementadas por meio de projetos. Entender as complexidades desses projetos é fundamental para a implementação das estratégias. Esta pesquisa respondeu à pergunta “Como a participação do Estado nas organizações de serviços de utilidade pública impacta a execução de projetos complexos criados para atender o mercado da base da pirâmide?”. O estudo se baseia em um estudo de casos múltiplos, com caráter qualitativo e exploratório. Duas organizações de serviços utilitários foram selecionadas e os dados coletados com base em entrevistas semiestruturadas. Um *software* foi utilizado para análise de conteúdo para analisar as proposições deste estudo. Dimensões complexidades para a execução do projeto foram identificadas, a influência do Estado sobre esses projetos e estratégias organizacionais. Esta pesquisa contribui para uma melhor compreensão das variantes dos elementos institucionais com impacto nas estratégias organizacionais. Revela a necessidade de um melhor entendimento e definição de modelo de negócio específico para atacar as oportunidades de mercado na base da pirâmide. Nossas descobertas podem ser usadas pelas organizações para estabelecer estratégias específicas para esse mercado.

**Palavras-chave** – Estratégias Organizacionais; Projetos Complexos; Base da Pirâmide; Ambiente Institucional; Gerenciamento de Projetos.

### Introduction

The world population is growing, totalizing 7.2 billion in 2014. By the end of 2050, 9 billion will be living in our planet. Population growth, urbanization and city growth impose clear challenges for

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government and agencies as the complexities of these phenomena faces the difficulties of economic situation and institutional environment (United Nations DESA, 2014). Access to basic services, like energy, water and sanitation, may be highlighted as an example of the current and future concerns of the society. This concern affects all the population and especially those at the base of pyramid (BoP). In order to access those at the BoP, organizations will have to innovate their products and services as the BoP market has different specificities when compared to the developed market (Rivera-Santos & Rufín, 2010).

The base of the pyramid market (BoP) presents impressive numbers. It is the “biggest untapped business opportunity” (Kacou, 2010, p. 17). Around the world, the BoP citizens account for 4 billion with an income of less than USD 2,000 (Prahalad & Hart, 2002), with a purchasing power of USD 5 trillion consumer market. The citizens at the BoP market are dominated by the informal economy resulting an inefficient and uncompetitive market (Hammond, Kramer, Katz, Tran, & Walker, 2007). Rather than addressing this market as an aid program to eradicate poverty, the 4 billion citizens need to be seen as potential consumers by organizations.

In Brazil, 26,8% of population who live in house, have a per capita income of less than half of minimum wage per month considering the year 2012 (IBGE, 2013). This represents an average annual per capita income of USD 1,900 with 52 million potential consumers. If the average annual per capita income raises to USD 3,800, this population adds up to 107 million. In terms of value, it is a USD 99 billion market for the average income of USD 1,900 (IBGE, 2013).

Basic services shall be provided by Utilities Services Organizations (USO). In this context, at least three major components have the potential to influence their strategies: the institutional environment, the specificities of the BoP and the complexities of projects. The institutional environment is a major contributor to the organization structure and the establishment of the organization's strategies (Friedland & Alford, 1991; Hennart, 1994; Meyer & Rowan, 1977; North, 1990; Orr & Scott, 2008; Peng, Sunny, Brian, & Hao, 2009; Scott, 1987, 2005).

The challenges to serve the BoP market are not simple. In order to develop successful strategies to reach the BoP, organizations have to understand that the environment and conditions at the BoP are substantially different from the developed market (Rivera-Santos & Rufín, 2010). This difference has implications to business strategies: new logistics and distribution processes, new production system, new

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sales strategy just to name a few (Prahalad & Hart, 2002) with innovations implemented through projects (Shenhar & Dvir, 2007). The internal and external environment in which these projects are developed have the basic characteristics of complex projects.

Some assumptions about the BoP market made by organizations may be questioned. The poor are not the target of the organizations because organization cannot reach them in a cost effective way. They cannot afford the products and services sold in developed markets. Poor people are not entitled to use new technologies – these are examples of wrong assumptions made by organizations in general. The access to the BoP will “require radical innovations in technology and business models” (Prahalad & Hart, 2002, p. 3). These innovations will be deployed through projects where different complexities dimensions will be present. The improvement of live standards of the population in general, and particularly to those in the BoP depends on the success of these projects (Scott, Levitt, & Orr, 2011).

Another factor is the impact of the State on how services utilities organizations are structured. Regardless of the level of the State participations in SOEs, its capacity to influence the economy is strong. The control of gasoline prices in Brazil through Petrobras and its impact on the performance of the oil company (leviathan as a major investor), the change of the VALE’s CEO in 2009 (leviathan as a minor investor) are recent examples of the power of the State to influence the way organizations establish their strategies (Musacchio & Lazzarini, 2014).

On the other hand, the current literature regarding BoP is concentrated on the market characteristics, business networks, opportunities and solutions to access the BoP market segment (Anderson & Markides, 2007; Kacou, 2010; Prahalad & Hammond, 2002; Rivera-Santos & Rufin, 2010). The question on how these required innovations are deployed to the BoP market considering the institutional environment, however, have not received the attention of academics and practitioners. The research question was “*How does the participation of the State in utilities services organizations impact the execution of complex projects created to serve the BoP markets?*”.

In utilities services organizations, where the function of the organizations is not only to reach an adequate level of economic efficiency but also to fulfill a social function, this influence is even stronger. Furthermore, the levels of State organization (Federal, State or Municipal) and its different responsibilities help to produce a continuous change of the institutional environment due to political aspects. The example

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of the drought in Sao Paulo, and the postponing of the water rationing due to the elections for governor in 2014 demonstrated the political influence of the State in organizations at the public utilities services organizations. Understand how this institutional environment and its correlation to the BoP are shaped considering the complexities of project execution is an important aspect of any successful business model.

As far as the authors are aware, the connection of the BoP market and the realization of projects have not been explored by researchers. This research fills this lack of studies by exploring the influence of the institutional environment on the realization of projects to reach the BoP. The research methodology had a phenomenological focus with an exploratory objective, employing an inductive approach (Yin, 2010). It was used a multiple case study approach, focusing on projects (unit of analysis) performed by two selected USO (nicknamed Alpha and Beta) to access the BoP market. We performed semi-structured interviews and we use a software to support the content analysis.

This paper contributes to the academia by highlighting the factors influencing the execution of projects by USO to access the BoP market. In doing so, we contribute to the construction of the grounded theory on project management, particularly considering the complexities involving the access to the BoP. Organizations intending to explore this market may use the results to improve their strategies to reach and explore the BoP not in a social and distorted view. The advantages of the social aspects of exploring the BoP market are a consequence an economic perspective of identifying the BoP market as a business opportunity. The result of our study indicated the need to the development of specific business model adapted to the characteristics of the BoP. In opposition to Anderson and Markides (2007), our study indicated that the reality seems to be more complex than an adaptation of the existing products and services.

As a result of this research, it was observed that the regulative element of the institutional element has a stronger impact for the USO, being the State a major investor or not. It can be stated that in order to access the BoP market, the complexities dimensions of project management will be present. For Alpha, the complexities are related to structural, dynamics and pace dimensions. For Beta, the only dimension considered to affect the project execution relates to the dynamic dimension. Last, State influence on project execution is minimum after a project is decided.

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This paper is structured as follow. Section 1, Introduction, provides a presentation of the research theme and the context in which the research was performed. The research question, objectives and the justification of the research are also discussed. Section 2, Literature Review is focused on the fundamental pillars of the study – institutional environment (IE), the base of the pyramid (BoP) concept and the management of complex projects. Although the BoP market cannot be considered a theory, an analysis of the concepts underlying the BoP market is presented due to its relevance to this study. Section 3 Methodology presents the design of the research, definition of the unit of analysis and the procedures for data collection and analysis. The methodology used on this research is presented and the basic research process discussed. Section 4 Presentation and Analysis of the Results presents and discuss the results of the research. On Section 5 Discussion and conclusions, the objectives of the research are evaluated based on the analysis of the results. Important findings of this research are evaluated and compared to the literature review, as appropriate. Section 6: Contributions is related to the academic and practice contributions of this research. These contributions are described as well as the limitations of the research. Finally, suggestions for future work are described.

### **Institutional Environment**

Organizations are the central core of the society. They are the means by which the society fulfills the needs of the persons. Organizations can be defined as a system by which resources are used to accomplish their objectives. Despite this simple definition, organizations are complex, contradictory: they may not be efficient and effective in using the available resources. An ongoing concern of any organization is how to achieve and sustain a competitive advantage. In the last decades, two different arguments have centralized the discussion on how this competitive advantage may be achieved and a more recent one is receiving the attention of academics, researchers and practitioners. The first two theories are known as “industry-based school” and “resource-based school” and the emerging one is the institutional theory. These are the leading perspectives in the strategic management of organizations (Peng *et al.*, 2009).

Institutional theory focuses on the aspects of the social structure. Its arguments are based on the assumption that to create order and reduce uncertainty, human beings form and change institutions. According to North (1991, p. 97), “Institutions provide the incentive structure of an economy; as that

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structure evolves, it shapes the direction of economic change towards growth, stagnation, or decline”. These institutions promote incentives for social behavior and its changes are responsible for the way social structures (political, social or economic) evolve through time (North, 1990). Institutional environment introduces the concept that organizations follow institutionalized rules not because they are perceived as a reality but because they are compensated and rewarded for doing so and, therefore, receive more resources and legitimacy, leading to a greater chance of survival. Based on the institutionalization arguments, the structure of organizations is not only the result of their technologies, or the way they transact in the market, its internal resources, and technical systems. The institutionalization concept embeds a further step on the traditional view of organization system by establishing that an organization is also a result of the institutional environment that shapes, defines and delimits social reality (Scott, 1987).

In a posterior work, Scott *et al.* (2011) proposes three fundamental pillars that comprise the institutional environment: regulative, normative and cultural-cognitive elements. The first one, regulative elements, can be understood as the more explicit rules, being the underlying compliance to them based on coercion. Actors, including organizations, are to comply with them in desire of compensation or to avoid penalties. The regulative institutional element has formal rules and they are more easily identified. Generally, law and regulatory requirements, enforces this set of elements. These elements are weaker in terms of shaping actor’s behavior, as these actors can “play the game” not internalizing its components.

The normative elements have a nature of more prescriptive expected social behavior. It can arise from internalized conceptions made by groups and reinforced by them, or they can be more consciously constructed in order to provide guidelines. The difference from the regulative element is that there is not a coercive force imposing the normative institutional element. (Scott et al., 2011). The cultural-cognitive elements is related to the “shared nature of the beliefs (culture) as well as the role they play in individual cognition” (Scott *et al.*, 2011, p. 59). The cultural-cognitive provides the most “slow-moving” and deep set of institutional elements. They are connected to assumptions “taken for granted” for their actors. They provide the foundation for the establishment of the regulative and normative institutional elements.

Institutions operates in macro, meso and micro level (De Castro, Khavul, & Bruton, 2014). Macro level corresponds to the federal set of rules. The meso level relates to the local elements like practices of the communities. Last, micro level is related to the individual elements of the institutional environment.

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Organizations are affected by the macro level at the national or regulatory institutions. The meso level institutions are “a bridge built on community values that accrete over time into a coherent and predictable set of well-known rules and taken for granted norms” (De Castro *et al.*, 2014, p. 77). At this level, institutions are closer to the expected social behavior that is supported by the normative and cognitive elements giving meaning to social order. Meso institutions may be found on local communities and are informal or formal. These meso institutions are responsive to the macro level, capturing the changes in the macro institutional environment and triggering local communities to engage in the new sense making process. Therefore, meso institutions bridge the gap between macro institutions and the micro demands of the individual.

In Brazil, institutional environment has an important element applicable to the USO. From 1996 to 2002, the State created the regulatory agencies (RA's), after the privatization process. These new entities would be characterized by an autonomy and independence from the State based on a fixed mandate of their managers, a process for reaching decision involving the interested parties, the agility to process demands from society and, finally, the establishment of the required levels of performance of the services (Pacheco, 2006). Regardless of its nature, the decisions made by the RA's influence the USO and affects its performance.

Peng, Wang, and Jiang (2008) in a theoretical paper about institution environmental in emergent countries evaluated that strategic choices are driven by firm-specific industry conditions and / or capabilities but are also a reflection of the formal and informal constraints established by the institutions. These define the "arrows" that can be triggered by organizations to implement strategies and create a competitive advantage. The authors cite numerous special publications on emerging economies involving institutional theory, demonstrating their importance in International Business research. Emerging economies are characterized by wide and deep changes in the rules of the game, called institutional transitions. Consequently, the question is how to play the game in an environment where the rules of the game are not completely clear and known and change at any moment.

Particularly in Brazil, RA's have the ability to influence different aspects of the organizations under their influence. RA's as a fundamental part of the institutional environment has the legal capability to influence the structure of the organization and their strategies. Our first proposition, therefore, is that

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IE influences the way utilities services organizations are structured. As indicated by Scott *et al.* (2011), regulative forces are more easily followed by the organizations as they are the more visible element of the institutional environment. Our Second proposition states that the regulative force has a major impact on USO.

### **Base of Pyramid**

In 2002, a new perspective of the base of the pyramid was developed by C.K. Prahalad (Prahalad & Hammond, 2002; Prahalad & Hart, 2002). This new concept states that the eradication of poverty at the “base of the pyramid” is not only a noble task but also a lucrative one. The baseline concept is an inclusive capitalism where the poor people are not seen as victims of the society but potential consumers. The problem is not how to transfer the resources from the rich to the poorest, but how to integrate these consumers at the world market economy. The numbers are outstanding: the market at the BoP is estimated to account for 4 billion people with an earning of less than USD 2,000 a year (Prahalad & Hammond, 2002).

When targeting these huge potential consumers, organizations would create jobs, opportunities, and therefore, bring new consumers to the market. The stimulation of the commerce at the BoP would improve the lives of thousands of millions of people not through charity but by this new inclusive capitalism. On the other hand, organizations face some reluctance to invest in such market. These organizations assume that the poorest people do not have enough income to purchase other products and services rather than food and habitation. They also face the difficulties regarding entry barriers in less developed countries, like institutional environment, politics, corruption, lack of stability, insecure property rights amongst other important factors (Prahalad & Hammond, 2002).

In order to access the BoP market, organizations will have to innovate in terms of business models and technology. For instance, price policing, new level of capital efficiency as the scale of distribution has to move from large quantities to few ones and small quantities to large number of people (Prahalad & Hart, 2002). Changing the rule of the game seems to be an appropriate underpinned concept to access the BoP.

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When analyzing the concepts related to the BoP based on researches from 2000 to 2009, Kolk, Rivera-Santos, and Rufín (2014) concludes that MNEs have a central role in the BoP initiatives. In terms of business models, it was observed a wide range of initiatives. The authors concluded that there is the need to further evaluate different BoP contexts as it varies across countries, products, industries and consumer needs. It seems rather clear that in order to access the BoP market, organizations have to adapt their strategies to be able to reach this potential market. Therefore, it is proposed that strategies to access the BoP market by USO are different to the ones at the ToP and that their differences require a different approach for project execution (third and fourth propositions).

Innovation seems to be a characteristic to reach the BoP. Strategic innovators are companies with a stronger capability of creating new markets as the result of the process of attacking the market leaders. They have the ability to break the rules of the game in their industry (Markides, 1997). Changing the rule of the game seems to be an appropriate underpinned concept to access the BoP. Another aspect identified by Kacou (2010) is related to an aspect named as “survival trap”. In order to succeed in the BoP market, stakeholders have to break “the survival trap”, a condition that keeps them on pursuing the same strategies, overwhelmed by their operating reality. As these strategies do not produce the expected results, they try to perform the same actions with stronger efforts. Unfortunately, those at the BoP are the most affected by the survival trap – for instance, a small entrepreneur may have to decide upon investing in their business or feed the family (Kacou, 2010).

In an exploratory 24 in-depth case studies, London and Hart (2004, p. 1) stated that “the transnational model of national responsiveness, global efficiency and worldwide learning may not be sufficient”. The authors concluded that the success of the initiatives to access the BoP market has to focus on the enhancement of the existing strengths of the market rather than focusing on their weakness. In order to accomplish this goal, strategies have to include partnership to non-traditional partners, co-inventing solutions and building new local capacity. This requires MNEs to develop a new capability in social embeddedness and network building.

Rivera-Santos and Rufín (2010) stated that in order to reach the BoP market, organizations have to understand the specificities of this market and the institutional environment in which they intend to operate. In terms of specificities, BoP market has three distinctive aspects from the ToP: first, it is the low

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income (USD 2 a day); second, it is the irregularities of their income. The last, either they are geographically dispersed (rural areas) or live in very densely populated areas. These aspects altogether lead to a stronger local cultural and less contact with “normal” consumer habits.

The BoP market imposes clear challenges to organizations, but at the same time, offers opportunities for organizations to expand their business to untapped markets. In order to expand to these markets, organizations need to create new capabilities – a new mindset where social embeddedness to weaker institutional environments and the construction of relationships shape their strategies.

### **Project Management**

Innovations are implemented through projects (Shenhar & Dvir, 2007). Projects, in simple terms, can be defined as a temporary organization established to complete specific goals (Cleland & King, 1983). Projects are seen as a key part of any organizational operation: they are the underline process used to develop new products, establish and implement client projects or to implement organizational changes. New demands for sustainable growth and innovation require organizations to invest in new technologies and infrastructure through project management (Raz, Shenhar, & Dvir, 2002; Shenhar & Dvir, 1996, 2007).

Consequently, there is an increasing “projectification” of organizations due to its importance to the operational and organizational activities. This projectification has produced fundamental changes in the way organizations develop process and products. The management of these projects presents multiple challenges to organizations as factors like time-based competition and fast technological progress are increasingly affecting the projects themselves (Söderlund, 2002). This level of complexity requires a more comprehensive literature and empirical studies in order to understand the practical implications on how to effectively use the concepts of PM (Shenhar, 2001).

The common view of project management is based on the assumption that the outcomes of the project can (and should) be determined in the early phases of planning and then, delivered as planned. The fundamental assumption is that a project methodology established on control system thinking would be sufficient for project success. As projects are subject to innumerable constraints, as an ambiguous and

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political environment and a result of human unpredictable behavior (Remington & Pollack, 2010), this mechanic view of the system is not enough to cope with current challenges of project management.

Based on a systematic review, Geraldi, Maylor, and Williams (2011) identified five dimensions of complexity – structural, uncertainty, dynamics, pace and socio-political complexity. After the screening process, 25 articles were used for the conceptualization process (see Table 1).

Dimension	Basic concept	Attributes
Structural	- Large number of distinct and interdependent elements.	- Size, variety, interdependence.
Uncertainty	- Gap between the amount of information and knowledge; - Defined in terms of variety (the probability and chance of an event) or lack of information, lack of agreement over current and future situation or ambiguity.	- Novelty (innovative technology); - Previous experience; - Availability of information.
Dynamics	- Dynamics refers to changes in projects – “outside-in” and “inside-out”.	- Change in any of the other dimensions of complexity.
Pace	- Urgency and criticality of time goals require different structures.	- Rate at which projects are (or should be) delivered.
Socio-political	- Human actors carry out projects, with potentially conflicting interests and difficult personalities; - Complexity emerges as a combination of political and emotional aspects involved in projects.	- Importance of project; - Support to project from stakeholders; - Fit/convergence with; - Transparency of hidden agendas.

**Table 1. Complexity dimension – result of systematic review**

Source: Prepared by authors based on Geraldi *et al.* (2011)

Shenhar and Holzmann (2017) performed an evaluation of the characteristics of megaprojects – instead on focusing in the reasons of the failures, the authors evaluated the common aspects of successful projects. The major ones are related to a clear strategic vision, total alignment and the capacity to adapt to complexity. Complexity is not just a matter of size, according to the authors. Organizations are becoming more complex and dealing with complex environment. By their evaluation, it is clear that the environmental (and, as a consequence, the institutional environment) are becoming more complex.

Based on the data collected regarding the context where projects are executed (BoP market), the fifth proposition is that projects at the BoP present characteristics of complex projects. The sixth

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proposition is that the management of projects to access the BoP market consider the complexity dimensions of structural, uncertainty, dynamics, pace and socio-political. The last proposition, seventh, is that the greater the participation of the State, the more difficult the project execution is.

### **Methodology**

Science is a coherent knowledge, resulting from a series of logical thinking, which refers to a specific set of observations, preceded by a theory review. Within the social science, case studies are one of the proposed methods for performing research. It is the preferable research method when the research question has “how” or “why” questions, the researcher has little control over the events and the focus is to evaluate the phenomena in their real context. Case studies are “... a research strategy which focuses on understanding the dynamics present within single settings” (Eisenhardt, 1989, p. 534).

The research methodology used in this research had a phenomenological focus with an exploratory objective. It was employed an inductive approach as there is no clear theory connecting the pillars used in this research. A multiple case study approach was used, focusing on projects (unit of analysis) performed by selected USO. Qualitative research has the objective to formulate subjective and situation related statements, based on well-founded empirical observations being relevant to social sciences. (Flick, 2009).

This research performed a multiple case study in two different organizations named Alpha and Beta. The criteria used to select the cases of this research were two folded: first, related to the organizations and second, the projects. The organizations selected were utilities services organizations (USO). In this context, USO are defined as organizations which provide a basic service to the population, like public transport, water treatment and distribution, sewage treatment, energy generation and distribution. In general, these USO provide services with some kind of authorization from the State. As already mentioned, these organizations used to be State owned enterprises (SOE). The organizations selected were from two different market segments: energy distribution (gas and/or electricity), water distribution and sewage treatment. The rationale of the selection of these segments is their importance to the economy – the figures of Sao Paulo exemplifies this significance. Investments in energy distribution in 2014 reached BRL 12.3 billion (ABRADEE, 2015). The Sao Paulo State company for water treatment and distribution (SABESP) intends to invest BRL 13,5 billion from 2014 to 2018 (SABESP, 2015a). Their revenue

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reached BRL 11,2 billion in 2014 (SABESP, 2015b). In terms of gas distribution, Comgás, a São Paulo State organization is responsible for the distribution of gas to 117 cities, reaching a revenue of BRL 7,8 billion in 2014 (Comgás, 2015).

For each of these organizations, at least one project for accessing the BoP was selected. Interviews, conducted from September 2015 to November 2015, were used as the primary source of information. Interviews were based on a semi-structured questionnaire from. A total of 10 persons were interviewed (5 for each organization). Interviews were recorded (approximately 10 hours) and transcribed to word documents. These word documents were then used as data source in the NVivo software. The number of respondents for each of the organization was considered enough for the purpose of this research, as the information provided was considered to be redundant at the fifth interviewed person. Table 2 makes a summary of the data collection.

Basic principle	Sources	Observation
Sources of evidence	Interviews (primary source of information)	Semi-structured interviews; Focused interviews (short interviews); Respondents: – Project managers, Product managers, Sales personnel and other involved in the development and implementation of projects for accessing the BoP.
	Documents and records (secondary data of information)	Business Plan; Project data (project charter, chronogram and any other associated documents); Annual financial, operational report; Records; Minutes of meetings; Evaluation studies, including feasibility for accessing BoP.
Data base for case study	Organizations and record of the data collect	A database for the case study was prepared and dully organized: – By organization name, interviews records, transcription and any other system to facilitate traceability of data.
Chain of custody of the evidences collected	The requirement to allow any external observer to follow conclusions to the research question and vice versa	Two strategies were used to trace all conclusions to research questions – formulation of the propositions and design of case study protocol.

**Table 2. Data collection summary**

Source: Prepared by authors

It has to be noted that both organizations operate in the stock market and, therefore, they have their relevant facts public available. The following data were used as secondary source of information:

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organization website, economic and financial reports, social responsibility reports, mission and vision statements, documents of the regulatory agency.

Data triangulation was obtained by using multiple sources of evidences: primary and secondary sources of documentation and the results of the interviews (Flick, 2009; Yin, 2010).

The following secondary sources of information were used. First, documents available in the organizations websites. It has to be noted that both organizations operate in the stock market and, therefore, they have their finance numbers and relevant facts public available. In terms of public available information, the following documents were used: (i) Organization website; (ii) Other websites with information about the organizations; (iii) Economic and financial reports; (iv) Social responsibility reports; (v) Mission and Vision statements, Code of Ethics; (vi) Documents of the regulatory agency. Further documents were presented during the interviews, but due to the confidential nature of them, they were used only to reinforce respondent's statements. Documents related to this source typically were project planning and financial figures, people affected by the project and its profile (social and ethnical class).

Analysis of the evidences collected was performed according to content analysis. According to Krippendorff (2012, p. 18), content analysis is "a research technique for making replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use". In order to facilitate the process, a software for content analysis was used (NVivo). The concept of *Nodes* was used to perform the analysis in a proper way. In case of this study, nodes were related to the propositions made for the study. Table 3 presents the relation of the nodes and the propositions of this study.

The quality of an exploratory multiple case study can be evaluated according to three criteria: (i) construct validity, (ii) external validity and (iii) reliability (Yin, 2010). The construct validity is defined as the identification of the correct operational measures of the concepts involved in the research. Construct validity was accomplished by using multiple sources of evidence and the establishment of a chain of evidence. In this research, the construct validity was obtained by the evaluation of the different sources of evidences. The respondent's statements were compared to the documentation public available, as already mentioned. Specific documents made available during interviews were also evaluated in order to validate respondent's statements. External validity is the identification whether the finding of the study can be

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replicated beyond the case study under evaluation. In order to answer the research question, a multiple case study was used selecting two relevant organization operating as USO. The last quality measure, reliability, is concerned with the replication of the study by another researcher. This case study followed a case study protocol and the development of a case study data base (Yin, 2010).

<b>Relevant aspects – variables</b>	<b>Nodes and hierarchy</b>
	BoP: <ul style="list-style-type: none"> <li>- BoP reasons for projects;</li> <li>- BoP Strategies to access.</li> </ul>
IE and organization characteristics Regulative, normative and cultural-cognitive elements	Institutional Elements: <ul style="list-style-type: none"> <li>- Cultural-cognitive;</li> <li>- Normative;</li> <li>- Regulative.</li> </ul>
BoP specificities Strategies to access the BoP market	Projects: <ul style="list-style-type: none"> <li>- Complex;</li> <li>- Complex dimensions;</li> <li>- Differences.</li> </ul>
Projects at the BoP Management of complex projects at the BoP	State influence: <ul style="list-style-type: none"> <li>- High;</li> <li>- Interfaces;</li> <li>- Low;</li> <li>- Organizational Structure;</li> <li>- Project Execution.</li> </ul>

**Table 3. Propositions and nodes**

Source: Prepared by authors based on NVivo features

Eisenhardt (1989) established three aspects to be explored in a case study: why, what, how. The criteria used to select the cases of this research were two folded: first, related to the organizations and second, the projects. The organizations selected were utilities services organizations (USO). In this context, USO are defined as organizations which provide a basic service to the population, like public transport, water treatment and distribution, sewage treatment, energy generation and distribution. In general, these USO provide services with some kind of authorization from the State. As already mentioned, these organizations used to be State owned enterprises (SOE). The organizations selected were from two different market segments: energy distribution (gas and/or electricity), water distribution and sewage treatment.

The rationale of the selection of these segments is their importance to the economy – the figures of Sao Paulo exemplifies this significance. Investments in energy distribution in 2014 reached BRL 12.3

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billion (ABRADEE, 2015). The Sao Paulo State company for water treatment and distribution (SABESP) intends to invest BRL 13,5 billion from 2014 to 2018 (SABESP, 2015a). Their revenue reached BRL 11,2 billion in 2014 (SABESP, 2015b). In terms of gas distribution, Comgás, a São Paulo State organization is responsible for the distribution of gas to 117 cities, reaching a revenue of BRL 7,8 billion in 2014 (Comgás, 2015).

Interviews were used as the primary source of information. Semi-structured interviews were used as there is an expectation that the respondents viewpoints are more likely to be expressed when comparing to a standard interview or the use of a questionnaire (Flick, 2009). Furthermore, interviews are considered an essential source for case studies as these types of studies are related to the human behavior and interactions. Respondents can support the identification of other sources of evidence (Yin, 2010). The following criteria for the selection of the respondents were established: (i) experience of more than 5 years at the organization, (ii) involvement with projects at the BoP. Table 4 summarizes the respondent profile.

Interviews	Alpha	Beta
Total number of interviews	5	5
Function	Coordinators, Managers	Coordinators, Managers
Age	35 to 60	30 to 45
Time within organization	More than 10 years	More than 12 years
Experience in project management	3 to 15 years	5 to 15 years

**Table 4. Respondents profile**

Source: Prepared by author

Appendix A Case Study Protocol summarize the main data collected.

## Presentation and Analysis of the Results

### Alpha and Beta Context of Operation

Alpha has more than 1.400.000 clients, with 12.000 kilometers of pipelines for gas distribution (Alpha Annual Report 2014). Its area of concession is highly populated, with a potential consumer market of almost 30 million people. Its market is segmented in residential, commercial, industrial and others. Residential represents more than 95% of their consumers. Beta is much larger in general terms. It has

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more than 25 million clients for sanitation services (water distribution and sewage collection and treatment). Its concession area covers almost 370 counties in Sao Paulo State. Their numbers include 520 sewer treatment stations, 230 water treatment stations, the distribution of water is made by 70.000 kilometers and the sewer collection reaches 48.000 kilometers. During 2014 and 2015, the prolonged drought in south part of Brazil has affected the organization business. Investments in infrastructure for improving water collection have been the focus of the organization since 2014.

Alpha and Beta operate under the requirements of the same regulatory agency – ARSESP (Regulatory Agency for Energy and Sanitation of São Paulo State). ARSESP is an independent agency established by Sao Paulo State with the objective to regulate, control and inspect the services provided by the USO in the areas of electricity, gas distribution (pipeline) and sanitation (sewer treatment, water treatment and distribution).

### **Institutional Environmental and Organizational Characteristics**

Alpha organization operates in a regulatory market with some particularities. The gas delivered by pipeline has at least two substitute products: the electricity and LPG: Liquefied Petrol Gas sold in cylinders. Furthermore, LPG price is regulated by the Union (Petrobras). Competition with these two substitute products is one of the Alpha challenges. For Alpha, the institutional environment has a strong impact on the organizational structure. This impact is identified first, by the regulations established by the regulatory agency. The influence is made by a series of aspects defined in the concession contract. First, the definition of a volume of gas to be paid even if Alpha does not sell the established volume to its market. Second, the financial aspect of the utility rate: within this context, two aspects are used by the regulatory agency – the definition of an incentive “x factor” to promote gains in efficiency and the approval of investments made by the USO in the infrastructure. Last, the definition and evaluation of key performance indicators.

The need to use the volume of gas made (model *take-or-pay*) guided the initial strategies of the USO – in order to use this volume, Alpha initially targeted the industrial market as they are clearly great consumers of gas (ceramic and glass industry, for instance). The idea was to use the available gas (fixed cost) in order to rapidly generate cash flows.

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[...] When Alpha was privatized, we had to comply with the existing contracts. The State had contracts for the consumption of gas. Alpha does not have gas extraction wells. It distributes the gas. There were contracts with Petrobras (Respondent Alpha 01).

The residential connection, as indicated in Alpha institutional presentation dated 2014, reports an increase of more than 10.000 connections whereas the industrial segment represented 15 new ones (2014 compared to 2013). These numbers indicate the importance of the residential market for company growth. Other aspect of the regulative force is related to the investments to be performed by the USO. These projects are aimed to expand the pipeline and increase the population served by the services provided by the USO. The agency does not control financial aspects of these projects. Rather, they control “the physical aspect” of the projects (for instance, kilometers of new pipelines).

The last influence on organization characteristics is the establishment of key performance indicators. These series of KPI's covers aspects of quality (pressure, losses, quality of the gas), safety (odor of the gas, time to respond to an emergency call) and quality of commercial response, amongst others. The normative aspect of the institutional elements used to have a greater impact on the organization. As they used to be part of a large corporation with clear regulations about operations and governance, Alpha was locally structured to respond to this set of requirements. The cultural-cognitive element relates to the safety of the operation. All respondents in Alpha organization pointed out the safety as a strong aspect of the culture of the organization. Nevertheless, despite the change of ownership (2012), this value remains a fundamental aspect of Alpha organization.

Beta organization is owned by the State and their influence is not only on strategies and on investments. It has also a strong impact on the financial result of the company. The model of the State as “leviathan as a major investor” established that the organization can become inefficient. (Musacchio & Lazzarini, 2015). In 2015, the impact of the political decision of reducing the rate for a lower consumption in Beta's financial performance is outstanding, at least. For the same revenue from 2013 and 2014 figures, there was a drop of 50% in the net margin. Interesting to observe that ARSESP, the regulatory agency is cited by the respondents not as a strong component of the institutional elements. This may be explained

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by the strong participation of the State as the major shareholder. The influence of the State, therefore, is direct rather than indirect.

[...] Absolutely, the State does influence (*strategies*). Basic sanitation is a public policy, and Beta, as a State company, where the State is the main shareholder, an interest party. The State's role is decisive in the infrastructure projects of Beta. The State influences these projects through the definition of the rate; the rate is regulated by a decree; it is connected to a State decision (Respondent Beta 02).

Normative and cultural-cognitive element is considered important by the respondents but their impact on organizational structure seems to be more "philosophical" rather than practical.

A comparison between Alpha and Beta organization regarding the institutional elements reveals interesting aspects. The regulative force is the strongest component of the institutional elements, although the influence is exerted in different ways. For Alpha, the influence is made directly by ARSESP using financial incentives and/or penalties during the annual and five-year utility rate revision. The targets for expansion have a clear impact on how organization defines its strategies. It can be stated that this influence is direct (because it forces Alpha to be efficient in infrastructure project selection) and, at the same time, it has indirect implications. For instance, organization had changed its structure from functional to regional in order to capture the residential market. Its sale forces used to be made by employees and now, there are indirect sales person. It seems that the agency uses a well-planned model to shape organizational efficiency.

### BOP Specificities and Strategies to Access the BOP Market

In **Alpha** organization, there is no compulsory regulation made by ARSESP to serve the BoP market.

[...] No, we do not have the obligation to provide our services for the lower classes. There is this rule to stimulate the growth, to direct the organization to this. You exhaust the expansion to the biggest clients and then, by capillarity, you reach the lowest class. This is not explicit; it is like a poker game. This access was not in the concession contract (Respondent Alpha 01).

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For Alpha organization, the strategy developed was to reach the residential market and, as a consequence, the BoP market. When argued about strategies to access the BoP market, the responses were usually directed to the strategies to reach the residential market. When analyzing the characteristics of the BoP market, some common aspects are retrieved from the respondents. For instance, the market seems to be more emotional and the approach for sale is different. It has to consider other factors rather than the utility service rate. The existent prejudice that the poor cannot afford other products or services can jeopardize sales. Their residential market at the BoP have a perception that the service provided by Alpha will bring a valorization of their house.

It has to be noted that there is no specific action made by Alpha to identify the BoP characteristics. Strategies established are developed to reach the residential market, which includes the BoP market. In this sense, strategies to reach the consumer market produced great changes to the way the organization was structured and the definition of strategies. The existence of a subsidized substitute product (LPG cylinder), has an impact on the strategies developed by Alpha organization.

As an example, it is the project named “better shower” – this project offers gas water heater, a specific showerhead developed with a partner and the hydraulic installation, with a financing of the investment in 24 times. However, these were not the only changes. A new system for distribution had to be developed, as they need to reach a great number of users. It also required a new approach to the subcontracting work – usually, for the same work at the street, Alpha used to have more than two subcontractors (for example, one to open the street, another to install the tubes, another to close etc.). For this kind of installation, only one subcontractor was used.

For **Beta**, the universalization of their water distribution services is considered to be accomplished. Beta Sustainability Report dated 2014, indicates that the “water index service” is 99% or more. For water services, a continuous concern of the organization is related to the losses of water due to leaking and theft. This is measured by an index, which considers the total volume of water “produced” and compared to the volume of water “invoiced”. In 2014, this index reached 21% (it was 26% in 2009).

Both organizations have strategies to reach the BoP market but with distinctive characteristics. The characteristics of the BoP market they serve are different. First distinctive factor relates to the targeting process or driving mechanisms to reach the BoP market. Whereas for Beta, the strategies have

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a social component, for Alpha, strategies are pure business. Beta is concerned in providing its service to the BoP market to improve their life and, at the same time, reducing its losses. Alpha, on the other hand, aims to increase their revenues. In Beta, a social utility rate and a forgiveness of the debt is the major incentive to bring more clients. For Alpha, the driving force to bring more clients is to add value to their services. Last important aspect to be noted is the lack of any direct influence of the regulatory agency on the strategies to reach the BoP market.

### **Management of Complex Projects at the BOP**

**Alpha** organization does not develop specific projects for the BoP market. Rather, their projects are developed to reach the residential market and, as consequence, the BoP market. The analysis of the project characteristics for the Alpha residential market, however, was performed as it was considered that its results can be used to better understand project's characteristics. The interference of the State in project execution is not direct, being a project for the BoP market or not. As already discussed, the State interference through ARSESP is made by the definition of expansion targets and the "x factor". The project selection to comply with these two incentive factors is an internal decision.

The projects required for the expansion of Alpha's gas pipelines can be classified into two distinctive groups. First, there are projects decided at corporate levels, with impacts on organization functions and these needs to be deployed throughout Alpha's functions. Once the expansion reached the residences, Alpha developed a series of projects to better identify "who" the customers were and their specific need. They also developed an analysis on how to add value to its service. As already discussed, the existence of substitute products required Alpha to identify specific projects to "sell" their new existent capacity to households.

Differently from Alpha organization, Beta does perform projects specifically for the BoP, according to the respondents. The main objective of these projects was not only to provide water services to the BoP market but also regularize the water connections, reduce the water losses due to the illegal and low-quality connections services. Table 5 presents a summary of the evaluation made of the complexities of the projects for Alpha and Beta.

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Dimension	Alpha		Beta	
	Relevance	Impacts on Alpha	Relevance	Impacts on Alpha
<b>Structural</b> <i>Large number of distinct and interdependent elements</i>	High	<ul style="list-style-type: none"> <li>- New pipeline system;</li> <li>- New construction system (from street pavement to sidewalks);</li> <li>- Faster pace of the construction;</li> <li>- New model of subcontracting;</li> <li>- Development of new model of gas distribution (from “pure” pipelines to “truck and pipeline network).</li> </ul>	Low	<ul style="list-style-type: none"> <li>- BoP projects not well defined in terms of sequence;</li> <li>- BoP projects do not have the formal structured processes and procedures as a normal project;</li> <li>- No construction of pipelines under the houses.</li> </ul>
<b>Uncertainty</b> <i>Gap between the amount of information and knowledge</i>	Low (in project execution)	- Once project is defined, uncertainty is not relevant.	Low (in project execution)	- No impact on Beta.
	High (in project selection at corporate level)	- Uncertainty from the five-year reviewing cycle from ARSESP.		
<b>Dynamics</b> <i>Changes in projects – “outside-in” and “inside-out”</i>	High	- Need to coordinate different projects and/or functionalities required to install their services in the residential segment.	High	- Involvement of the communities to be benefited from the connections.
<b>Pace</b> <i>Urgency and criticality of time goals</i>	High	<ul style="list-style-type: none"> <li>- Reduce impact of the construction in the surrounding area;</li> <li>- Starting the selling process in order to generate cash flows.</li> </ul>	Low	- No impact on Beta.
<b>Socio-political</b> <i>Potentially conflicting interests and difficult personalities</i>	Low	<ul style="list-style-type: none"> <li>- Interface with potential client (during the execution of the projects for residential area);</li> <li>- Payment for the use of the soil to city hall.</li> </ul>	Low	<ul style="list-style-type: none"> <li>- Need to establish informal relations with the community;</li> <li>- Politicians involvement on project but with no major impact on project execution.</li> </ul>

**Table 4. Alpha and Beta: complexities of projects at BoP**

Source: Prepared by authors

Complexities of projects are relevant to both organizations but with clear differences on the impact on the execution of the project. Firstly, the interference of the State has different impact on both

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organizations. For Alpha, the interference is indirect, made by the regulations established by ARSESP. This impact, although indirect, is high. It shapes organization strategies at corporate level and it has clear implications on organizational characteristics, as already discussed. But, once decided the project, the influence of the State on project execution is low.

### Propositions

As a result of the analysis made, Table 6 summarizes the findings of the study and its relation to the research question of the study.

Relevant aspects – variables	Propositions	Result of the analysis
IE and organization characteristics	I. IE influences the way the utilities services organizations (USO) are structured.	<b>Evidenced for both organizations.</b> The IE have an impact on both organizations in relation to strategies definition. <b>Theory reference:</b> North (1990) Scott (1987) Scott <i>et al.</i> (2011)
Regulative, normative and cultural-cognitive elements	II. For USO, the impact of the regulative forces in the way the USO conduct its business is stronger than the other elements.	<b>Evidenced for both organizations.</b> The impact of regulative is high for both. Normative and cultural-cognitive elements have a medium impact on Alpha. For Beta, normative and cultural-cognitive impact is considered low. For Alpha, regulative element is driven by the regulatory agency. For Beta, the State is the driven force. <b>Theory reference:</b> Scott <i>et al.</i> (2011)
BoP specificities	III. Differences between BoP and ToP require a different approach for accessing the BoP market.	Evidenced for both organizations. BoP market for both organizations presents specificities that differentiate than from the ToP market. <b>Theory reference:</b> Anderson and Markides (2007) Kacou (2010) London and Hart (2004) Rivera-Santos and Ruffin (2010) Prahalad and Hart (2002) Prahalad and Hammond (2002)

**Table 5. Evaluation of the propositions of the study**

Source: Prepared by authors

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Relevant aspects – variables	Propositions	Result of the analysis
Strategies to access the BoP market	IV. Strategies to access BoP market by USO are different to the ones at the ToP.	Evidenced for both organizations. For Alpha, the <i>who</i> , <i>what</i> and <i>how</i> dimensions are strongly affected by the residential market characteristics (and the BoP market as an extension). For Beta, despite the fact that there is not a new “product” to be marketed, some specific differences on <i>what</i> to be offered were identified. <b>Theory reference:</b> Anderson and Markides (2007) Rivera-Santos and Rufin (2010)
Projects at the BoP	V. Projects at the BoP present characteristics of complex projects.	Partially evidenced for both organizations. For Alpha, the <i>structural</i> , <i>uncertainty (in project selection)</i> , <i>dynamics</i> , <i>pace</i> have a high relevance to the Alpha projects. The <i>socio-political</i> dimension has a low impact on Alpha projects. For Beta, the only complex dimension is the <i>dynamics complexities</i> of the projects. <b>Theory reference:</b> Frame (2002) Remington and Pollack (2010) Shenhar and Dvir (2007) Geraldi <i>et al.</i> (2011)
Management of complex projects at BoP	VI. The management of projects to access the BoP market consider the complexity dimensions.	Evidenced for both projects. For Alpha and Beta, the projects are managed considering the specific complexities. <b>Theory reference:</b> Frame (2002) Remington and Pollack (2010) Shenhar and Dvir (2007) Geraldi <i>et al.</i> (2011)
	VII. The greater the participation of the State, the more difficult the project execution is.	Not evidenced for both organizations. Participation of the State is not relevant during project execution. Frame (2002) Remington and Pollack (2010) Shenhar and Dvir (2007) Geraldi <i>et al.</i> (2011)

**Table 6. Continuation**

Source: Prepared by authors

## Discussion and Conclusions

The institutional elements defined by Scott *et al.* (2011) were used as the basis for the identification of the mechanisms used by the State to participate in USO. The regulative force was the institutional element with a highest impact on the USO, but with different driving forces. The State uses two different

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mechanisms to influence these organizations: first, through the regulatory agency and second, being a major investor with a participation in the governing board of the organization.

For Alpha (no participation of the State as a major investor), the regulatory agency seems to perform its function. The assumption made by Scott *et al.* (2011) that organizations follows rules because they are compensated and rewarded for doing so, is valid. The use of incentives and penalties by the regulatory agencies has an influence on the establishment of the organization's strategies and in the definition of the operational processes within the organization, changes in the technological and marketing practices.

Alpha seems to manage quite efficiently the rules of the games defined by the regulatory agency for their advantage. Despite the fact that Scott *et al.* (2011) considered the effect of this element as shallow and superficial, this aspect seems to be used by Alpha as a leverage point for agility. Instead of being shallow, the regulative force produced a fast adaptation to the rules by Apha. For instance, when the industrial market was not capable of fulfilling the volume defined by the regulatory agency, Alpha was capable of targeting the consumer market, changing entirely their business model to achieve an adequate operational and economic performance.

For the organization where the State acts as a major investor (Beta), the influence of the regulatory agency is not relevant as identified by the analysis of the secondary documents and the respondent's statements. In this case, the regulatory agency acts much more as a fiscalization agency rather than regulatory. In the context of organizational management, the influence of the State is naturally strong. The participation of the State as major investor (*leviathan as a major investor*) produces the impacts identified by Musacchio and Lazzarini (2015). These influences are clear: first, the profit maximization for the shareholders is susceptible to political interference. The net profit dropped more than 50% when comparing 2013 and 2014 figures. For political reasons, the president of the company was changed, with a new governing board elected on the beginning of 2015. The reason for the change was a supposedly statement made by the former president that the need to save water was not released to the public in 2014 due to the election period. For Beta, the regulative force is naturally the strongest element to influence the organizational strategies and characteristics. The normative and cultural-cognitive elements seem to have a low impact on Beta.

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Specifically, for Alpha organization, it could also be noted how deep the cultural-cognitive force of the institutional element is engraved at the organization processes. This confirms the statement made by Scott *et al.* (2011) that the cultural-cognitive force is the most deep and slow moving element. Cultural-cognitive aspect related to safety is deeper, profound and sticer. This element is profound as they provide meaning to social order, they are a common shared belief of the Alpha members. This element is so strong that, despite a change on the organizational shareholders on 2012, the cultural-cognitive element of safety operation is still a strong value of the organization.

It was interesting to observe that an imprinting of a new cultural-cognitive value. The recent incorporation of Alpha by a new organization (2012) is imprinting a new value for *costumer focus*. As observed during the literature review, Scott (1987) noted that the organizational structure can be the result of an imposition, authorization, inducement, acquisition, imprinting, incorporation and the bypassing of organizational structure. It seems that the imprinting of this new value is a consequence of the perceptions of the member of the organization of “what seems to be right” to be done.

Last, the normative element is still a major component of the institutional environment for Alpha operation. According to Scott *et al.* (2011), the adherence to this element is based on the social acceptance mutually reinforced. Alpha used to comply with rules and guidelines defined by the former owner. The current major shareholder has not imposed new rules in terms of operation. Alpha still follows the previous *modus operandi*, confirming the slow-moving aspect of this element as stated by Scott *et al.* (2011).

In conclusion, the regulative element of the institutional element has a stronger impact for the USO, being the State a major investor or not. The identified difference was the mechanism used to influence the organizations. Finally, the isomorphism between both organizations was not observed. Alpha and Beta are completely different organization, with different strategies and processes despite being regulated by the same regulatory agency.

The main aspects of the execution of complex projects created to serve the BoP market, was identified using a twofold approach: the specificities of the BoP market and the strategies to serve this particular market were identified and the complexities dimensions related to the execution of projects were evaluated. The analysis of the specificities of the BoP market was performed based on the work of Anderson and Markides (2007) related to innovations at the BoP market. In terms of *who* the customers

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are, this research showed that Alpha does not have a specific process to identify the consumers at the BoP. Alpha, however, had to establish a series of processes to identify the consumers at the residential market and to better identify what the client values in their product/service in order to convince the potential customer to purchase their services. The impact on how to market these new products were high for Alpha. New methodologies for purchasing were established, new material developed, new processes to expand the pipeline defined and new organizational structure can be cited as examples of these profound changes. Clearly, these changes came from top down decisions and shaped the functionality of all areas involved.

Interesting to observe that the identification of *who* these consumers were seems not be as simple as indicated by Anderson and Markides (2007). A clear evaluation of *who* the potential customers are seems to be fundamental for any strategy to be developed by organizations. For Alpha, the access to this market had to involve not only *who* they were, but what they valued and considered about their services before defining *what* products to develop and *how* to deliver them. The driver force to enter the residential market was business oriented.

For Beta, the driving force to reach the BoP market is a social function component rather than business oriented. The idea was not to improve the financial result of the organization but to reduce their losses. Beta did not have to identify *who* the customers were in the same sense as Alpha. For Beta, the identification of the BoP is important as it is a criterion for offering their services rather than a strategy for reaching them. In other words, the projects made for those at the BoP have to be performed for those at the BoP. It is not a question of understanding what they think about their products, or how to develop specific products or services to reach them. Rather, it is a simpler evaluation of who they really are. This aspect reinforces the social dimension of the projects executed by Beta to access the Bop market.

It was also evaluated the complexities dimensions related to the execution of these projects to serve the BoP market using the dimensions defined by Geraldi et al. (2011): structural, uncertainty, dynamics, pace and socio-political. The first important aspect noticed is that the complexities vary amongst Alpha and Beta projects. Second, the academics contribution for project management seem not to be considered by both organizations. It was not observed a defined approach for project management following the concepts established by the body of knowledge – initiate, plan, execute, monitoring / controlling and the closing the project (PMI, 2013). Furthermore, the complexities dimension identified on Alpha and Beta

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projects were not considered by both organizations in order to specifically manage their project. The need to establish a new product and service seems to be the reason for the complexity's dimensions.

The observed results indicated that the complexities vary amongst the organizations studied. Nevertheless, at least one complex dimension was considered relevant for these projects in both organizations, the *dynamics complexities*. For both organizations, it is necessary to coordinate different projects and/or community demands in order to properly execute the projects. Alpha presents more complex dimensions than Beta. One of the reasons that can explain this difference is the need for Alpha to develop specific products to compete with the substitute products. As already discussed, the driving force for Alpha to enter the residential market is a business decision. Beta, differently from Alpha, seems to make a concession for the BoP to use their services, complying with their social function. The need to establish a new product and service seems to be the reason for the complexity's dimensions in project management. These findings confirm evaluations about project management (Sauser, Reilly, & Shenhar, 2009; Shenhar & Dvir, 2007; Shenhar & Holzmann, 2017)

The relationship between State level of participation in utilities services organizations and the execution of complex projects created to serve the BoP markets was evaluated. The State clearly has an impact on the strategies of the organizations evaluated using different mechanisms to exert their influence. At the managerial level, this influence was considered high regardless of the mechanism used (regulatory agency for Alpha, and major investor for Beta). On the other hand, when considering the influence on project execution, the impact was considered minimum on both organizations. The only influence observed was in project selection for the USO without State participation as entrepreneur (Alpha), the influence was considered high and indirect, made by the regulations defined by the regulatory agency. This influence is limited to the selection of projects as a consequence of the organizational strategies defined at the corporate level.

For the specific projects to serve the BoP market (residential market), there is no influence of the State for both project selection and project execution. For the SOE: State Owned Enterprise (Beta), the influence of project selection and project execution is minimum. Therefore, it seems that the institutional environment represented by the agencies have no influence on the project's selection, not in accordance to the fully concepts of the regulative, normative and cultural-cognitive elements (Scott *et al.*, 2011).

## **Contributions**

An analysis of the elements of the institutional environment and its relation to the BoP market and the mechanisms that influence the complexity of the project was performed. Although the focus of this study were the utilities services organizations, the results of this research can incentive other academics to explore the theories supporting the execution of projects at the base of the pyramid and how to deal with the continuous change of the institutional environment. This research contributes to the academia as few studies were identified connecting the complexities of projects considering State participation in the context of the base of pyramid market.

As stated by Scott (1987), institutional environment influences organizations characteristics and strategies although it not clear how and extent of the impact on such structure and strategies. This research contributes to the academia as it explores the influence of the elements of the institutional environment (regulative, normative and cultural cognitive) and its impact on organizations operating in the utilities services market. It was possible to observe that these elements have different impact on both organizations, operating under the same regulatory agency. Therefore, a generalization of the impact of these elements should be done carefully. For instance, Scott *et al.* (2011) stated that the effects of the regulative element may be shallow and superficial. This research reveals that in fact, the impact of the regulative force established by the regulatory agency was strong and deep in Alpha organization.

The analysis of the specificities of the BoP market for both organizations pointed out also that knowing *who* the customer are seems not be enough for the development of strategies to the BoP. In an article about innovations at the base of pyramid, Anderson and Markides (2007) explored the differences of the strategic innovation in the developed world and the BoP. Accordingly, the authors stated that “...strategic innovation in the developing world is not so much concerned about discovering new Whos – there's plenty of under – and non-consuming customers to go around” (Anderson & Markides, 2007, p. 2). The identification of *who* the customers are may be not so difficult in terms of poverty, but it is not enough for the development of specific strategies to serve this market. It is necessary to identify who they are in terms of value proposition, client expectations and needs, amongst other factors.

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This exploratory case study supports the academia in understanding the factors influencing the execution of projects by USO to access the BoP market. The theory of project management is under construction and therefore needs further development. The analysis on how the institutional environment affects the execution of projects may support the construction of the grounded theory on project management,

The influence of the State is covered in depth by the studies of Professor Lazzarini (Inoue, Lazzarini, & Musacchio, 2013; Musacchio & Lazzarini, 2012; Musacchio & Lazzarini, 2014). The complexities of project also have been the attention of many academics (Ahern, Leavy, & Byrne, 2013; Baccarini, 1996; Browning, 2014; Davies & Hobday, 2005; Frame, 2002; Geraldi et al., 2011; Hobday, 2000; Li & Guo, 2011; Maylor, Vidgen, & Carver, 2008; Owens, Ahn, Shane, Strong, & Gransberg, 2011; Pich, Loch, & Meyer, 2002; Remington & Pollack, 2010; Söderlund, 2002; Thamhain, 2013a, 2013b; Whitty & Maylor, 2009). On the other hand, the BoP market is still a development area for study. Despite a dramatically improvement of the concepts related to the BoP market, a systematic review of a decade of articles published related to the BoP indicates a wide variation in terms of BoP context, BoP initiatives and impacts of these initiatives (Kolk *et al.*, 2014).

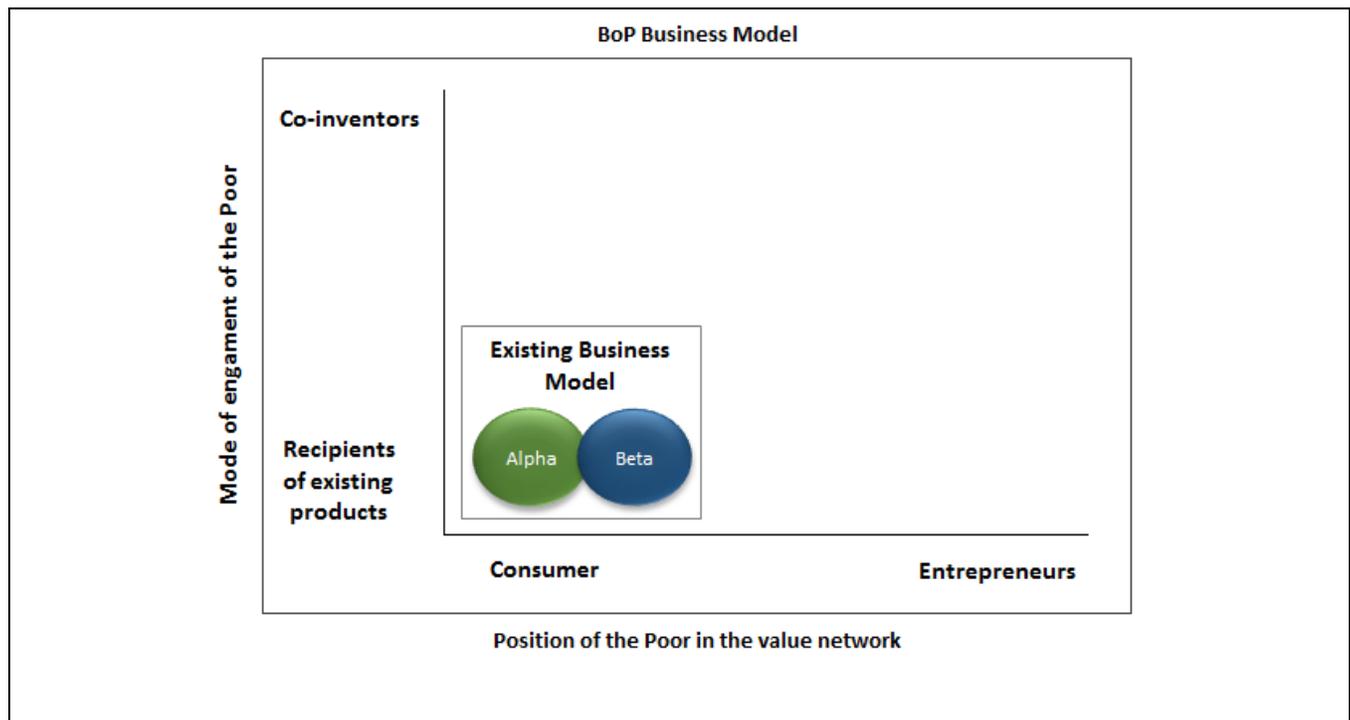
This research also unveils the need for the development of specific business model for organizations intending to explore the market at the base of pyramid. Despite the fact that Anderson and Markides (2007) stated that organizations would need to focus only on basic market concepts, the reality seems to be more complex than an adaptation of the existing products and services. As indicated by Kolk *et al.* (2014), it is necessary to develop new business models to reach the BoP market. The strategies for the BoP should also consider the position of the poor not only as a mere recipient of the products but also as coinventors and entrepreneur of these initiatives. This study confirms the perception of the authors Kolk *et al.* (2014), as the strategies developed by Alpha and Beta consider the poor as recipient of their products.

One practical contribution of this study is to reveal the need for a better understanding and definition of specific business model to attack the huge market opportunities at the BoP. The view of the poor as a mere consumer and recipient of existing products and services does not reflect the dynamics of the institutional environment where multinational enterprises and other organization operate. There is a clear need to expand the concepts of poverty beyond an economic point of view and include a broader view of

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other aspects as material deprivation, lack of education, vulnerability and more complex aspects. Organizations operating in the BoP market could better evaluate the impact of their strategies when expanding their view of the poor.

Figure 1 represents a schematic view of the identified business model as revealed by this research. It can be noted that consumer (or potential customer) are perceived only as consumers of the products and services offered by both organizations, Alpha and Beta.



**Figure 1. BoP framework**

Source: Prepared by authors based on Kolk *et al.* (2014)

Organizations intending to explore the BoP market may use the findings of this research to establish specific strategies to clearly define *who* the poor are using other dimensions beyond an economic view. This research also unveils the need to evaluate the actual impact of organizations strategies at the BoP considering economic, social and environmental dimension. Organizations may be encouraged to evaluate these impacts in order to better measure the benefits and difficulties of the BoP strategies.

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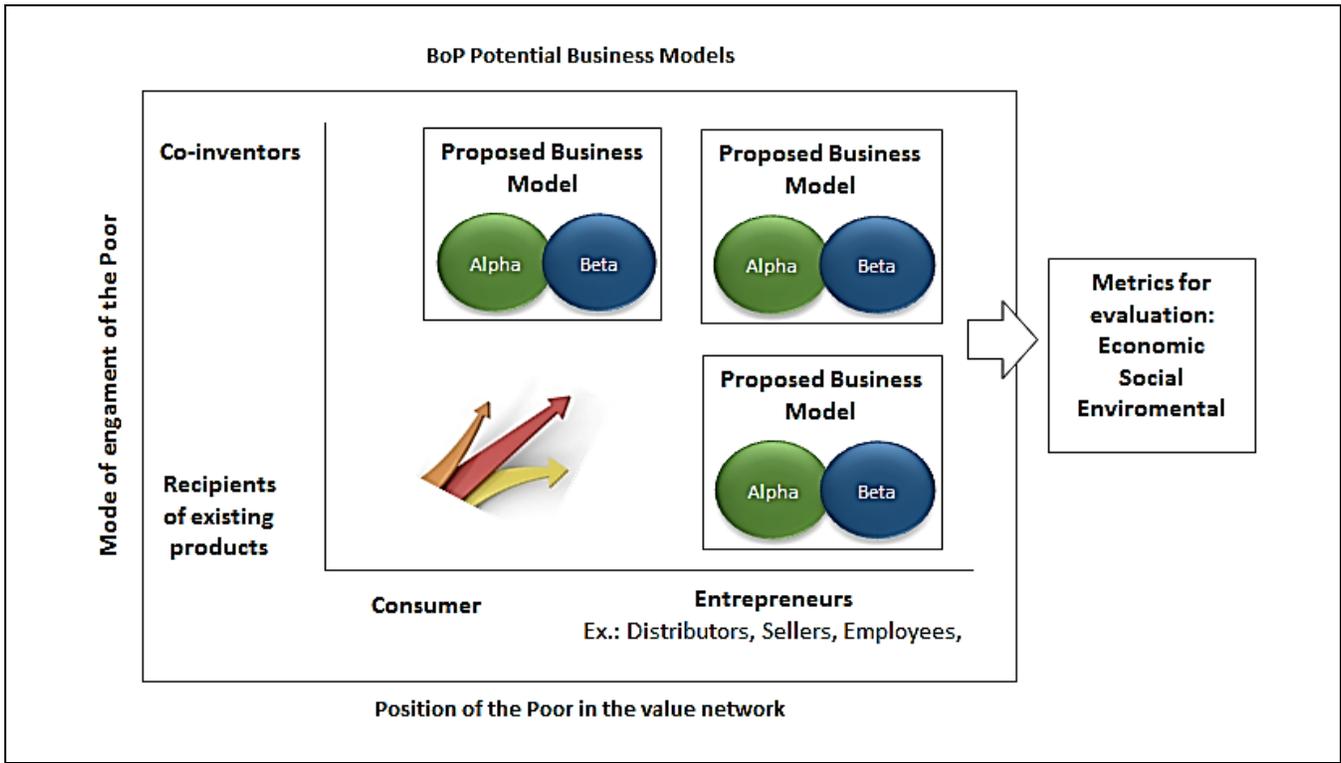
This research presents several limitations. Contributions of this study are related to the participation of the State in utilities services organizations and its impact in the execution of complex projects to access BoP markets. Although a multiple case study approach was used, nevertheless, the results are limited in terms of organizations evaluated and extrapolations of the results to other areas have to be carefully performed. The interfaces of BoP market, complex projects and the institutional environment compose, all together, a multiple scenario of theories and practices, which could not be evaluated in its full extent.

The suggestions for future works are related to the limitations of this research. First, it is the development of specific business models to leverage the existing opportunities of the BoP market. For example, Alpha organization could use the community around the targeted residential areas to further increase their sales power. Beta could also promote incentives for the establishment of small organizations to be the constructors of the infrastructure through, for instance, the neighborhood association. Figure 1 represents some of the possibilities offered in terms of business model. Once the business model has been established, the identified factors of complexities for project execution could be used to define a specific guideline on how to better manage those projects. The financial, social and environmental impact of these projects need to be clearly established in order to properly evaluate the returns from these projects.

The suggestions for future works are related to the limitations of this research. First, it is the development of specific business models to leverage the existing opportunities of the BoP market. For example, Alpha organization could use the community around the targeted residential areas to further increase their sales power. The underline concept is to use persons with knowledge of the area, with a deep understanding of the community needs and expectations to adapt or create value in their existing products and services and, at the same time, sell their services (co-inventing processes).

Beta could also promote incentives for the establishment of small organizations to be the constructors of the infrastructure through, for instance, the neighborhood association. Alternatively, Beta could incentive the hiring of local work force to be employed by their subcontractors. These actions would have a stronger potential benefit for the organization and to the communities. Figure 2 represents some of the possibilities offered in terms of business model. Other business model could also be defined, for instance, the engagement of the poor as co-inventor of the products and entrepreneur.

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**Figure 2. BoP framework – suggestions for future work**

Source: Prepared by authors based on Kolk *et al.* (2014)

Once the business model has been established, the identified factors of complexities for project execution (and selection) could be used to define a specific guideline on how to better manage those projects. Last, the impact of these projects needs to be established. The financial, social and environmental impact of these projects need to be clearly established in order to properly evaluate the returns from these projects.

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Submetido: 25/08/2018

Aceito: 22/01/2019