

Full Length Research Paper

How interoperability fosters innovation: The case for servant leadership

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What is the relationship between interoperability and innovation? While a relationship likely exists, according to the literature, it is seen to be very hard to prove. Furthermore, what role does (servant) leadership play? In order to address these questions, this research paper is based upon three research efforts, undertaken in Portugal: 1) An exploratory in-depth survey concerning servant leadership, administered to students finalizing their BSc Management Degree (54 valid responses); 2) An in-depth survey on servant leadership, interoperability and innovation administered to executives in various industries (55 valid responses from nine different industries); 3) A case study of Infosistema, an innovative Portuguese firm which exemplifies the servant leadership philosophy. Our results show that servant leadership leads to interoperability and both are seen to be antecedents of innovation. However, the servant leadership philosophy is a distant reality from most organizations in Portugal and this may mean less free-flowing communication and thus less organizational innovation as a consequence. Some culture change may first be necessary so that servant leadership may become more widespread. We also use the Business Narrative Modeling Language (BNML) at various points in the discussion, thus combining the narrative and visual content to communicate key management concepts.

Key words: Servant leadership, innovation, interoperability, survey, case study, business narrative modeling language.

INTRODUCTION

“One of the reasons why we tend to like interoperability is because we believe it leads to innovation” (Gasser and Palfrey, 2007). However, “the relationship between interoperability and innovation, while it likely exists in most cases, is extremely hard to prove” (Gasser and Palfrey, 2007). Furthermore, what is the role played by [servant] leadership? To answer these research questions, and provide proof of the relationship between interoperability and innovation, we performed three separate research studies, all undertaken in Western Europe (Portugal). The first research study was an

exploratory survey of students’ attitudes towards leadership, with 54 valid in-depth qualitative responses. The second research study was an in-depth survey of executives’ beliefs and attitudes concerning leadership, interoperability – “the ability of a system or an organization to work seamlessly with other systems or organizations without any special effort” (Mertins et al., 2008) – and innovation – “the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organisation or external relations” (OECD, 2005) – with 55 valid in-depth qualitative responses. The third research study was a case study of Infosistema, a Portuguese company chosen for its innovative management philosophy (servant leadership culture) and

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innovative products and services. The need for the case study arose as some of the exploratory student survey respondents and indeed a significant amount of the executives surveyed also, were not of the opinion that servant leadership would function in Portugal. Other studies (Laub, 2005; Herman, 2008; Laub, 2010) have determined that servant leadership is indeed a leadership philosophy adopted by a minority of companies, when compared to autocratic or paternalistic leadership philosophies. Infosistema is thus an important Portuguese illustration of how servant leadership leads to interoperability and to the free flow of communication, resulting in organizational innovation.

Our interest in servant leadership is relatively recent. We heard of servant leadership for the first time at an online R&D EFFE (Enabling the fuzzy front end of innovation) meeting organized in March 2011 by one of the authors and which had participants from several parts of the World (each connected using a videoconferencing tool called Vidyo Desktop). One of the participants (Milton Sousa) is a leadership scholar and expert, with connections to the academic as well as the professional community; and indeed that evening Milton was responsible for the lecture on “meaningfulness and leadership”. The talk was so engrossing that a copy of “Servant Leadership – Developments in theory and research” (Dierendonck and Patterson, 2010a), a book advertised on the Erasmus Centre for Leadership Studies’ website¹, where Milton was undertaking doctoral studies, was ordered that night and has been a faithful travelling companion ever since. The notion that work should have meaning and that leadership has to do with the ideal of service, with attention given to the needs of followers, is believed will indeed lead to healthier corporate cultures and more satisfied workers. The material read was soon transferred to the classroom and following lectures on the subject of servant leadership on a management course, at a major university in Portugal, a survey of the students followed which, due to its remarkable results, led to the idea for this article.

“Leaders offer a vision of what is possible that mobilises, energises and empowers people to reach that vision” states Jashapara (2004). Leaders also support goal-setting and can involve employees more or less in the goal-setting process, while also gaining commitment to these goals. However, “it is noteworthy that there are no conclusive studies showing that certain leadership styles, such as a participative style or an autocratic style, are more effective than others”, states Jashapara (2004). Though it may well be that studies that attest to the effectiveness (in terms of organizational financial profit generated) of a certain leadership philosophy type may be lacking, we do however firmly believe that servant leadership will undoubtedly lead to happier and more

fulfilled employees, who will more willingly and readily contribute to the objectives set out for the organization. Furthermore, in current times of turbulent change, we might add that organizational objectives tend to be linked to innovation and the notion that motivated and empowered employees will lead to greater innovation output – “the lifeblood of any large organization” (Birkinshaw et al., 2011) – is the vision that now empowers us also, indeed impels us, to spread the ideal of the servant leader.

Rather than providing answers, we seek to contribute to the discussion of servant leadership, especially in countries without a track record in this leadership philosophy. We propose that servant leadership is a promoter of interoperability. Servant leadership, by unblocking and promoting communication channels between employees and leaders at all levels, by promoting knowledge sharing, must lead to greater innovation output and, thus, to greater results for enterprises. With our case study of Infosistema we provide evidence of this.

By also portraying the survey results using the business narrative modelling language (BNML) (Oliveira and Ferreira, 2011a), we bring forth several benefits, including making management concepts more accessible to a wider audience as its visual format (Oliveira and Ferreira, 2011b), in conjunction with the narrative, is simpler and more generalizable than, for example, simply using the narrative on its own (Langley, 1999). Furthermore, business patterns are more easily identified using BNML, and the business patterns resulting from the student survey and connected to servant leadership were the foundation for the Infosistema case study analysis. “Capturing knowledge has always been an objective although known to be costly and time consuming” (Páscoa et al., 2011).

We also believe that using BNML is not only a means to capture knowledge but an avenue to decrease time and costs related to the performing of qualitative studies (Oliveira and Ferreira, 2011a).

Finally, our paper comes at a crucial time for Portugal, which is registering its worst average economic growth since World War I, its highest unemployment rate in 80 years², its greatest public debt of the last 160 years, and renewed high emigration levels amongst Portuguese citizens, who are going abroad in search of a better life (Pereira, 2011). Given the recent IMF (International Monetary Fund) and EU (European Union) financial interventions to bail out Portugal and save the country from bankruptcy, we feel that research connected to better leadership is crucial. Leadership which we see, and indeed our study results show, is linked to interoperability and innovation.

¹ The Erasmus Centre for Leadership Studies’ website is: http://www.erim.eur.nl/ERIM/Research/Centres/Erasmus_Centre_for_Leadership_Studies#axzz1OdM0Bg2l, accessed on 17-03-2011.

² Unemployment in Portugal was at 12.1% in mid-2011, according to the Portuguese National Institute for Statistics at http://www.ine.pt/xportal/xmain?xpid=INE&xpgid=ine_main accessed on 24-10-2011.

LITERATURE REVIEW

Leadership, culture and innovation defined

Leadership can be defined as “the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organizations of which they are members” (House et al., 2004; Schein, 1992; Kotter, 1996). Leadership influences the ever-present phenomenon organizational culture - “the accumulated shared learning of a given group, covering behavioural, emotional, and cognitive elements of the group members’ total psychological functioning” (Schein, 1992; Deshpandé et al., 1993; Allee and Taug, 2006; Kelley and Littman, 2006) – preparing the organizational scene for innovation (von Hippel et al., 1999; Lilien et al., 2002; Cash et al., 2008; Kotler and Keller, 2009) – be it product, process, position or paradigm innovation (Tidd et al., 2005).

As further concerns innovation, which is “seen as applying to the development of new service offerings, business models, pricing plans and routes to market, as well as new management practices” (Birkinshaw et al., 2011); and seen to include not only “brilliant” disruptive innovation but also “a great many brothers and sisters” (Moore, 2006) such as line-extension innovation and experiential innovation (Moore, 2006) and ranging from growth phase to mature phase products and services as well as to the phase where categories need to be renewed entirely (Moore, 2006); indeed “all established enterprises have the opportunity to innovate all the time” (Moore, 2006), thus, top management [leadership] team diversity “enhances firm performance by facilitating an innovation strategy that increases the firm’s new product portfolio innovativeness” (Talke et al., 2010).

Similarly, Çakar (2006) states that it is divergent thinking that contributes to an innovation capability. It is precisely this innovation capability that interests us and the role that leadership plays. Positive forms of leadership which are closely related, as they each possess a positive moral perspective and leadership with self-awareness (“an emerging process” involving the understanding by the leader of his/her values, cognitions and emotions) (Avolio and Gardner, 2005), include theories of authentic, transformational, charismatic, spiritual and servant leadership (Avolio and Gardner, 2005); servant leadership in particular, a focus of our research and described subsequently, is seen to be a direct avenue for the promotion of the diversity and divergent thinking necessary in order to multiply innovation within the organizational context, especially as innovation occurs over time, requiring continued, concerted and often company-wide efforts (Tidd et al., 2005; Morgan and Liker, 2006). We see leadership as being ever more important for innovation to occur in turbulent environments, turbulent environments seen as those registering “globalization, deregulation of markets, changing customer and investor demands and increasing

product-market competition” (Jashapara, 2004). Other studies have researched the way leadership influences knowledge sharing and knowledge creation and subsequently innovation output, for example Liu and Phillips (2011), a study related to transformational leadership or TFL; however, our research is slightly different as it focuses on servant leadership.

“Servant-leaders focus on identifying and meeting the needs of others, instead of just trying to acquire power, wealth, and fame for themselves. Servant-leaders focus on serving people instead of using people” (Keith, 2010). Servant-leaders also work vigorously towards “shared organizational values” (Reinke, 2004; Prosser, 2010) which promotes knowledge sharing and results in innovation (Liu and Liu, 2008; Yang et al., 2010; Liu and Phillips, 2011) due to an aligning of individual and organizational goals.

One form of organizational innovation, for example new product development, is favoured by low uncertainty avoidance (Nakata and Sivakumar, 1996) or tolerance of ambiguity (Usunier and Lee, 2005), which is impacted by interpersonal relationships, and in particular, communication effectiveness (Hofstede, 2001). Individuals will feel less threatened by the ambiguous situations that innovation involves, and consequently resist innovation less (De Luque and Javidan, 2004), if they have a favourable organizational climate in which to work, where there is cooperation and trust (Lee and Yu, 2010; Oliveira and Ferreira, 2011c). This favourable climate, where innovation can occur, has to be promoted by senior management (Schein, 1992). Of note is that Portugal was found to have a very high uncertainty avoidance national culture, second only to Greece³ out of 53 countries (Hofstede, 2001; Usunier and Lee, 2005); so, organizational leaders in Portugal and Greece will have a more difficult task as concerns the fostering of innovation, one which will involve highly-tuned interpersonal skills, such as those of the servant leader (Spears, 2010).

What is considered good leadership “has changed dramatically” (Dierendonck and Patterson, 2010b), hence heroic, hierarchical leaders with an obligation solely towards shareholders have been replaced with calls for “stewardship, ethical behavior and collaboration through connecting to other people” (Dierendonck and Patterson, 2010b). What we shall also argue is that, currently, such leadership can be found in different measures around the globe, despite a desire and demand for more societally responsible leaders in a “more caring society” (Spears, 2010). Change is often slow in arriving, meeting much resistance (Kotter, 1990; Kotter and Cohen, 2002; Jashapara, 2004), and cycles perpetuating themselves much to the despair of organizational stakeholders. Irving (2010) has already researched the subject of “the cross-cultural perspectives on servant leadership”; in relation to

³ Both Portugal and Greece have been severely affected by a much publicized sovereign debt and economic crisis which, towards the end of 2011, is far from resolved.

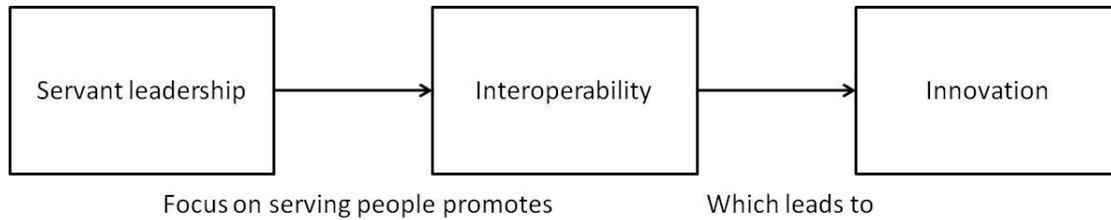


Figure 1. Antecedents of innovation.

Portuguese speaking countries leadership influence is seen to decline with the use of servant leadership practices, more authoritarian traits of leaders more in line with cultural expectations, rather than the ideal of service to followers. Thus, one cannot be surprised that servant leadership is not well-known, as we shall see below, in this most western part of Europe – Portugal. “In a catholic culture (such as Portugal), there seems to be no clear distinction between the concept of servant... and the concept of slave” (Marinho, 2005; Irving, 2010) and so barriers exist challenging the wide-spread adoption of servant leadership as a dominant *modus operandi* in Portuguese society, where a high power distance dimension can be found (Hofstede, 1980, 2001), indeed as in Latin America, also, as a whole (Irving and McIntosh, 2009; Irving, 2010). African countries where high power distance can be found include Morocco, Nigeria, Zimbabwe, Zambia and Namibia (Carl et al., 2004) and so servant leadership as it is expected will also be an unknown leadership type in these societies. Indeed Irving (2010) quotes Kumuyi (2007) who stated that “what Africa needs for its redemption is servant leadership instead of the self-serving governance that the continent is famed for”.

A high power distance (PDI) culture is one where “the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally” (Hofstede, 2001). In high power distance cultures employees will tend to agree with their superiors as they will be afraid to disagree (Çakar, 2006). In view of this, we need to “approach the past, present and future” (Ferch, 2007) of our cultures, and in particular our dominant cultures, as “the oppressor will never willingly give up power” (Martin Luther King, Jr., as quoted by Ferch, 2007). On our journey to salvation, humanity will rise (Ferch, 2007), as numerous examples in history have shown us, despite other examples of the World’s inhumanity. We see that as servant leadership’s reach expands (servant leadership has already “gained hundreds of thousands of adherents” (Spears, 2010) its unity will play an essential role in this process.” The case of Southwest Airlines (SWA) (McGee-Cooper and Trammell, 2010), the only airline to manage the most on-time flights, least baggage lost, and lowest level of customer complaints or Triple Crown, which it has won

for five consecutive years, is but one example of how servant leadership is a path to innovations that nurture and capture “hearts and minds” (McGee-Cooper and Trammell, 2010).

We thus hope with our study to increase, in some small way, the awareness of this “art of serving others” (McGee-Cooper and Trammell, 2010) leadership philosophy.

Antecedents of innovation

Figure 1 is a result of our ongoing research into the process of innovation (Oliveira et al., 2007; Oliveira, 2008; Oliveira et al., 2008; Oliveira and Ferreira, 2011c), and is thus a model we propose of the innovation process. We believe that servant leadership, as it focuses on serving people, promotes interoperability, and interoperability in turn leads to innovation.

Moore (2006) provides an extensive listing of innovation types, which can be grouped into four clusters of innovation, and each cluster has, as we believe, the same antecedents servant leadership and interoperability. The four clusters of innovation (Moore, 2006) are: 1) Product leadership cluster (disruptive innovation, application innovation, product innovation, and platform innovation), which involves significant Research and Development investments and market risk and so is appropriate in growth markets; 2) Customer intimacy cluster (line-extension innovation, enhancement innovation, marketing innovation, experiential innovation), where the core offer is not distinctive at this (mature) stage in the life cycle; 3) Operational excellence cluster (value-engineering innovation, integration innovation, process innovation, value-migration innovation), where the aim is to lower costs and focus on richer margins in mature market segments; and 4) Category renewal cluster (organic innovation, acquisition innovation, harvest and exit), where the market is in decline but where incentives still exist to engage with [the most valued] customers. As we shall see subsequently, the companies surveyed each have possibilities of innovating in at least one of these innovation clusters. The following passage from the literature provides an additional basis for our research, exemplifying

antecedents of innovation:

1. A “CEO’s (chief executive officer) task-focused behaviors are directly linked to firm performance and the CEO’s relationship-focused behaviors are related to employees’ attitudes; and through these attitudes, to firm performance” also (Wang et al., 2011).
2. “An organization needs to establish and maintain the relationship among members, encourage high intimacy among them and increase their work efficiency to improve the innovation performance of the organization” (Lee and Yu, 2010).
3. “Implications for management practice are that the individual-group emotional connection needs to be taken into account by a company and positively influenced to ensure good innovation performance in the organization” (Oliveira and Ferreira, 2011c).
4. Leadership behaviors are connected to innovation output as CEOs need to be creative, take risks, and in particular be “bold with innovation” (Wang et al., 2011).
5. Furthermore, for the above to occur, some form of interoperability (relating to interactions between systems to create value) (Li et al., 2008) is a requirement; enterprise interoperability types including (EI 5C Model): communication (for the exchange of information), coordination (for the alignment of activities), cooperation (for sharing and partitioning work), collaboration (implying joint work to create innovative solutions), and channel (relating to distribution channels, for example the Internet, involving value innovation and not only efficiency and differentiation) (Li et al., 2008).

Relevance of the research topic

An analysis of the two July 2011 issues of the African Journal of Business Management reveals a dozen articles related to our research, showing how our research is up-to-date and relevant. Table 1 summarizes our findings in these aforementioned articles. Leadership (Ashraf and Iqbal, 2011; Chen et al., 2011; Islam et al., 2011; Liang et al., 2011; Tsai et al., 2011), commitment (Atak, 2011; Nawaz, 2011; Tsai et al., 2011), communication and interoperability (Chen and Chang, 2011; Islam et al., 2011), and innovation (Chen et al., 2011; Davó et al., 2011; Lee et al., 2011) are areas of research present in the July 2011 sample of articles we have selected. One of the articles (Lazenby and Radebe, 2011) also used students from a university context in its research study. Furthermore, Tabassi et al. (2011) sent out 50 questionnaires and received 32 usable sets, which is less than our survey sample sizes (54 responses by management students and 55 responses by executives from nine industries). Of note is how empirical study is the predominant type of paper (as is the case of our study); also, the questionnaire (a method we also use herein) is the preferred research method. However, none

of the articles focus on servant leadership. A systematic search of the Science Direct data base, on 20-08-2011, revealed the following search form (Saur-Amaral, 2010), in Table 2. However, of the five journal articles that resulted, only two seemed to be related to our research, which was not the case of: Jackson (2009) which is about writing for publication; Fry et al. (2005) which focused more on spiritual leadership rather than on servant leadership; and Martin and Novicevic (2010) which is related to social entrepreneurship. This led us to do another search, the results of which are visible in Table 3.

The search described in search form no. 2, Table 3, differs from that in search form no. 1, Table 2, in so far as only journal titles containing “servant leadership” were a target, abstract and keywords not being included this time. The two journal articles that resulted from the search were the same two articles that interested us after our first search, as follows: Liden et al. (2008), who suggest that servant leadership, which “stresses personal integrity and serving others, including employees, customers, and communities” (Liden et al., 2008), is a multi-dimensional construct that at the individual level explains in-role performance and organizational commitment; Graham (1991) is also relevant to our research topic, and states that servant leadership is a new model of leadership, which is both inspirational and moral, describing three workplace setting examples in the process. In effect, not much research has been performed related to the subject of servant leadership.

A search of the Science Direct data base for journal articles relating “servant leadership” to innovation (abstract, title, keywords; social sciences; all years) led to no articles being found. The same result was arrived at for journal articles relating “servant leadership” to interoperability (abstract, title, keywords; social sciences; all years) – no articles were found. This encouraged us to write our current research paper, to add to the literature on servant leadership, interoperability and innovation.

Exploratory student survey - Listening to the voices of the future

Scholarly studies of servant leadership are very recent and started with Farling et al.’s (1999) conceptual article (Winston, 2010). “The modern servant leadership movement is still young” (Keith, 2010), and we thus seek to add to the literature of scholarly studies on the subject as we “do not believe we really ‘know’ servant leadership” (Winston, 2010). This empirical study is to serve then as a basis for further discussion about servant leadership. In sum, the main objectives of our exploratory student survey were to “listen to voices of the future” and to:

1. Determine how many students would like to encounter servant leadership after graduating in management studies from university.

Table 1. An analysis of the two July 2011 issues of the African Journal of Business Management showing the relevance of our research topic.

Authors	Type of study	Method	Research results
Ashraf and Iqbal (2011)	Conceptual paper	Literature review	Political intelligence of leaders “can help facilitate organizational change effectively”
Atak (2011)	Empirical study	Questionnaire	High organizational commitment is essential in the information age and needs to be increased via organizational measures
Chen and Chang (2011)	Conceptual paper	Literature review	Human competence is firm- specific and is “conceptualized in an organizational context” (e.g. organizational culture and values)
Chen et al. (2011)	Empirical study	Questionnaire	The analysis “demonstrates the influence of support leadership on organizational innovation performance”
Davó et al. (2011)	Empirical study	Cluster analysis	The results show that five distinct groups of countries exist in the EU-15 “characterized by different levels of technological innovation and competitiveness”; Portugal is in the least competitive group
Islam et al. (2011)	Empirical study	Questionnaire	“Trust, communication between staff, and leadership were found to have a positive and significant relationship with knowledge sharing”
Lazenby and Radebe (2011)	Empirical study	Questionnaire	“Identification of student perceptions through research will help to guide management in transformational change processes”
Lee et al. (2011)	Empirical study	Questionnaire	Knowledge application “has significant positive effect on new product development performance”
Liang et al. (2011)	Empirical study	Questionnaire	“Job satisfaction was a mediator of the relationship between transformational, transactional leadership and task performance... Social distance had negative moderating effects”
Nawaz (2011)	Empirical study	Questionnaire	“The motivation of the McDonalds employees is low due to poor employer-employee relationship”
Tabassi et al. (2011)	Empirical study	Questionnaire	“Human capital plays a significant role in order to have a successful organization... companies can shape the environmental and organizational settings in order to motivate staff”
Tsai et al. (2011)	Empirical study	Questionnaire	“A supervisor with high emotional intelligence is able to perform excellent leading skills to elevate the employee self-efficacy [perceived capabilities to achieve a mission / belief in one’s performing skills], and that employees self-efficacy results in a significant positive influence on organizational commitment”

Table 2. Search form number 1.

Content	Explanation
Objective of the search	Reveal whether research into the area of servant leadership has been undertaken by a significant number of researchers and reveal, also, how recent the interest is in this topic
Data base	Science Direct, as this is a major academic data base
Date of search	20-08-2011
Inclusion criteria	Articles published in journals; containing "servant leadership" in the abstract, title and keywords; in the social sciences area; all years
Total number of articles found	5
First article dating from	1991

Table 3. Search form number 2.

Content	Explanation
Objective of the search	Reveal whether research into the area of servant leadership has been undertaken by a significant number of researchers and reveal, also, how recent the interest is in this topic
Data base	Science Direct, as this is a major academic data base
Date of search	20-08-2011
Inclusion criteria	Articles published in journals; containing "servant leadership" in the title; in the social sciences area; all years
Total number of articles found	2
First article dating from	1991

2. Determine how many students believe that servant leadership would be successful in their country of origin.

3. Test the business narrative modeling language (BNML) to see if it can satisfactorily represent the results of the exploratory student survey undertaken. In this process, we shall be especially interested in pictorial representations but also in the narrative as we believe, using Jordão's (1998) words, that "the interpretation of more or less elaborate written or oral discourse is necessary", indeed imperative, in our case to try in whatever small way to contribute to the advancement of management science.

METHODOLOGICAL CONSIDERATIONS AND RESEARCH QUESTIONS

We live in the era of organizations, "nobody is anybody outside an organization" (Jordão, 1998) yet it is also possible "to often get lost inside organizations, to lose one's personal identity" (Jordão, 1998). Following this line of research, we seek to answer a growing need in organizations by making evident the personal narratives of organizational actors. This we have achieved by using a qualitative research methodology, not only in the case study but also in the

surveys which had open-ended questions also. We thus hope to contribute to the motivation and fulfillment of organizational characters, which might then make organizational objectives truly their own too. There are several examples of research which have combined both survey evidence and case studies (Berman and McLaughlin, 1974-1978; Yin, 1979; Yin, 2003). Each method "can pose complementary questions" (Yin, 2003). While our exploratory student survey was designed to answer:

- 1) How many students desired to encounter servant leadership as professionals; and
- 2) How many students thought that this leadership philosophy would be successful in their country of origin; our survey of executives was designed to answer:
- 3) How many executives thought that servant leadership would be equally as successful in Portugal as in the USA;
- 4) How many executives think they work in servant leadership organizations;
- 5) How many executives would like to have a servant leadership philosophy in their organizations;
- 6) How many executives believe that leadership affects the type of organizational communication;
- 7) How many executives believe that easy and fluid communication (interoperability) can lead to organizational innovation (questions deemed appropriate for this research method, according to the COSMOS Corporation, as quoted in Yin, 2003).

The student survey was done first and the executive survey was done second, the results of each complementing each other. Although with a similar objective the exploratory student survey was slightly modified to adapt the questions to professional rather than academic realities, thus resulting in the executive survey. Other studies have also surveyed students and executives to establish a contrast, for example the IBM global CEO study and the IBM global student study (done in 2010 and again in 2012). On the one hand, the surveys we undertook indicated the prevalence of a phenomenon, on the other in-depth qualitative insights also resulted as the surveys had open-ended questions rather than fixed-point answer scales e.g. low (1) to high (7). Fixed-point measures “provide inaccurate and meager information” (Woodside, 2010); and they also fail to capture “real-life outcomes of interest” (Woodside, 2010).

On the other hand, case study research “is appropriate for several research objectives” (Woodside, 2010), including the description and explanation of organizational events (Woodside, 2010). More specifically, we were interested in enquiring into how servant leadership practices relate to interoperability and innovation (a question deemed appropriate for the case study method, according to Woodside, 2010). Furthermore, triangulation was achieved during our case study via “direct observation by the researcher within the environments of the case” (Woodside, 2010,) (during a company visit the researcher involved observed the work environment during office hours and on a work day), an analysis which benefitted from: a) the researcher’s extensive prior work experience, over three decades, including at several multinational firms; as well as b) prior experience conducting similar research efforts. Triangulation also occurred by probing and “asking case participants for explanations and interpretations” (Woodside, 2010) during, as well as after (in person and over the telephone), the semi-structured interviews with the CEO.

STUDENT SURVEY (RESEARCH STUDY 1)

Educating for superior humane leadership is one of the most important jobs, socially speaking, in our view that one can have, and also one of the biggest investments in our future that we can make. Educating for leadership is even more important in the context of an undergraduate management degree, which is an investment in nations, but also an investment globally, working towards a better World, a World which is more productive, but also more cooperative and fulfilling. During a Services Management course at the University of Aveiro (part of a BSc Management Degree), a public university in Portugal founded in 1973, with 2,500 researchers (including 1,012 academic faculty, 246 researchers and 1,196 PhD students); and a leader in Portugal in number of papers per researcher and considered to be a leader as concerns innovation (UA, 2011), we covered Servant Leadership material. We discussed in class (just under seventy students) the A-P-S Mindset Model (Laub, 2010) as well as cases concerning Southwest Airlines and TDIndustries (McGee-Cooper and Trammell, 2010).

Autocratic leadership, defined as that “displayed by leaders who look for sole possession of power and control (Van Looy et al., 2003) or where leaders lead “for self over others” (Laub, 2010); and paternalistic leadership, where organizations are “led with a parental

mindset from the leader and a corresponding child mindset and response from the workers” (Laub, 2010); as well as Servant organizations, where leaders lead “for others over self” (Laub, 2010) were portrayed, so that the students might be aware of what each type entails. We also had a number of students from Europe doing our program, around 10% of the total, on what is locally known as an Erasmus Student Exchange. The presence of international students is seen to be a very important source of diversity and contributes greatly to the success of class discussions. During the course⁴, we asked students to answer questions concerning the leadership of services⁵. This paper discusses some of the findings of this survey (which was not anonymous but due to confidentiality reasons the names of the respondents mentioned herein are not indicated) which was undertaken by just under 60 students in June, 2011. The open-ended questions concerning leadership were as follows: Leadership of services:

- How does the servant leadership at Southwest Airlines contribute to the results of this company?
- In your opinion, would the leadership adopted by Southwest Airlines be equally as successful in your home country (specify your country and justify your answer)?
- If you were to go and work for a services company what type of leadership would you like to encounter there? Why?

Following a discussion of the Southwest Airlines case (a servant leader organization), students from Portugal would then thus discuss servant leadership in relation to their country, while European students would discuss servant leadership in relation to their home country.

The final question refers to the personal preference of the students, the type of leadership they would like to encounter when they graduate, a very short-term prospect as the course is part of the final semester of their 3-year undergraduate degree in management. Of note is that none of the students in class had heard of the term “student leadership” before the discussions in class. Indeed, one might add that the term “servant leadership” led to considerable surprise by a number of students who thought that there might be a mistake in so far as leaders cannot be servants? Surely there was a misunderstanding, they stated? Students finalizing a degree in management at a major university are very aware of what they might encounter in the workplace, having had lectures on human resource management and other management-specific courses from experienced professors, so the opportunity to listen to

⁴ Professor Irina Saur-Amaral was the Regent of the course in 2010 to 2011 and her insights into services management were greatly appreciated.

⁵ Though the questions were asked by the lecturer in a context where the students knew they were being evaluated we believe that no additional bias was introduced. The detailed answers to the student survey, answers which were very diverse and sincere, were very similar to the results of the other executive survey as well as to the case study, both of which are also described herein.

Table 4. Results presented by students concerning servant-leadership (54 valid answers).

Question	Answer (%)			
Opinion that servant leadership at Southwest Airlines (USA) contributed significantly to the results of this company	Yes (100)			
Opinion that servant leadership would be successful in their home country	Yes (20.8)	Yes, but with some difficulty (22.6)	No (56.6)	
Preferred type of leadership	Servant leadership (53.7%)	Paternalistic leadership (3.7)	Democratic leadership (33.3)	Other (9.3)

their views was seen to be very positive. The results of the questions were as follows, as represented in Table 4. A discussion of the survey results, including quotes follows.

Student survey results

Question (a): How does the servant leadership at Southwest Airlines contribute to the results of this company?

The totality of the students surveyed were of the opinion that servant leadership at Southwest Airlines contributed very positively to the results of this company. Some of the views of the students surveyed follow below, showing their enthusiasm with the servant leadership philosophy:

“Southwest Airlines is a great example for all companies because of its leadership and relationship between leaders and other employees”. (Student from Latvia).

“Southwest Airlines adopted the servant leadership model in which leaders serve employees. Thus, employees will work with more freedom, more maturity and more responsibility to better serve customers... Leaders also have lower salaries than in the competition and this guarantees that whoever works at Southwest Airlines enjoys what they do and likes the company.” (Student from Portugal).

“This model (servant leadership) is characterized by the fact that the leader is seen as a “servant” of the employees. This type of leadership contributes to the results of the company as employees are called to participate, they are not afraid to participate and their opinions are taken into account and are valued. Thus employees will feel more responsible and happier and that will have an impact on customer satisfaction... Furthermore, as there is profit-sharing with employees, employees are more motivated to achieve good results for the company.” (Student from Portugal).

The objective of Southwest Airlines and how it impacts results is made clear by the following statement:

“Southwest Airlines is a servant leadership company... The overall objective is to create an atmosphere and organizational culture of trust, where creativity and risk-taking are promoted. Employees that are hired have to be motivated and already have a positive and friendly character... Southwest Airlines puts its employees first and its customers in second place. This contributes to the success of the company because satisfied employees have a positive impact on their clients” (Student from Germany).

As concerns alternative types of leadership, students stated that:

“Fear and lack of trust are present in autocratic leadership organizations, which are based on leadership for self and not for others, and which I do not think is the best model” (Student from Portugal).

“... with this type of servant leadership I would feel art of a whole, all treated equally, all able to contribute with ideas and in decision-making, no-one likes to feel nullified” (Student from Portugal).

Question (b): In your opinion, would the leadership adopted by Southwest Airlines be equally as successful in your home country

A relatively small percentage of the respondents believe that servant leadership will work well in their home country (20.8%):

“Yes, servant leadership will work, as allowing employees to be creative is essential in all countries” (Student from Germany).

A slightly higher percentage (22.6%) believes that servant leadership will work in their country but with some difficulty, as the following testimonies show:

“Yes, servant leadership can be successful in Portugal, but with some difficulty, we need to change the current dominant type of autocratic leadership in Portugal. Here we have a different organizational and national culture in Portugal than in the USA, with greater power distance, a more rigid hierarchy, top-down leadership, and attitude and personality are not valued as highly as competences” (Student from Portugal).

“Yes, but with some difficulty... Servant leadership would be difficult to implement due to our history as a communist nation under Russia” (Student from Latvia).

Furthermore, special care will have to be paid, stated some survey participants, to the selection of human resources for servant-led companies, to make sure that “greedy” people, who seek primarily high salaries, rather than fulfilling jobs where people come first, are not selected. Also, the belief is held that older employees will have greater difficulty in adapting to servant leadership, especially in Portugal. Finally, some respondents mentioned that servant leadership would work in companies which start with this philosophy from the outset, rather than trying to change an organizational culture in an existing company to that of servant leadership:

“Yes, servant leadership would work well, but with careful selection of employees, and in a firm starting anew, not an existing firm trying to change” (Student from Portugal).

The majority of respondents (56.6%), however, believe that servant leadership will not be successful in their home country. Reasons for this include cultural aspects, for example, as mentioned earlier, the historic tendency for autocratic leadership in Portugal. A girl from Romania stated:

“Servant leadership will not work in Romania due to cultural traits - politeness and humbleness are not strong points due to our communist past”.

Other respondents (2) from Portugal stated thus:

“Great motivation to serve is lacking in Portugal; here we find the opposite of what servant-leadership requires; organizations are too paternalistic, protectionist, employees prefer to follow orders, there is an aversion to risk and change in Portuguese culture; owners of businesses take charge of the important issues”

“The Portuguese have a very closed mentality and the culture is too rigid; people will not agree to being servants of others; lower salaries e.g. for senior management, as at Southwest Airlines, would not be acceptable for the Portuguese who are too greedy; Portuguese culture change is necessary”

Question (c): If you were to go and work for a services company what type of leadership would you like to encounter there?

As concerns the preferred type of leadership, the majority of respondents would prefer to work for a servant-leadership organization (53.7%). This is seen to be a very positive result, especially if one takes into account that 33.3% of the respondents would prefer democratic leadership which is “characterized by sharing authority and power between superiors and employees” (Van Looy et al., 2003); but in describing this type of preferred leadership, they actually describe a philosophy very close to that of servant leadership e.g. where there are more equal relationships (less hierarchical distance between leaders and employees), where there is empowerment, dialogue, consultation and authenticity. One may be led to believe that indeed the denomination “servant leadership” does confound catholic respondents who might be led to believe that “servant” and “slave” are similar and not compatible with leadership (confirming research by Marinho, 2005, as quoted by Irving, 2010). A positive testimony of one of the students was:

“It would be good to work in a place where people enjoy what they do” (Student from Romania).

Good communication, an enterprise interoperability type as “the main purpose of interoperability is to exchange information” (Li et al., 2008), was brought up several times, as the following testimony shows:

“Working at a place with equal rights; where suggestions are accepted from below; where there is good communication, a good work atmosphere; that would be nice!” (Student from Portugal).

The main tendency of the respondents is to want to work for organizations where the corporate culture is seen to be healthier, with employees enjoying their work; where creativity is valued, and where information flows freely. The desire to not encounter autocratic leadership at an employer is significant. Servant leadership is also seen to be a solution for Portugal’s current economic problems, as one Portuguese student stated:

“Yes; servant leadership would be, in my opinion, important for Portugal, to have it implemented here; due to the difficult times we are living – [record] unemployment, IMF [International Monetary Fund] intervention, precarious work – people are not satisfied or motivated to serve others; however, if they are valued, for sure, from a services perspective, companies would do more favourably.”

Business Narrative Modeling Language (BNML) results

Within organizations, particular versions of reality can be

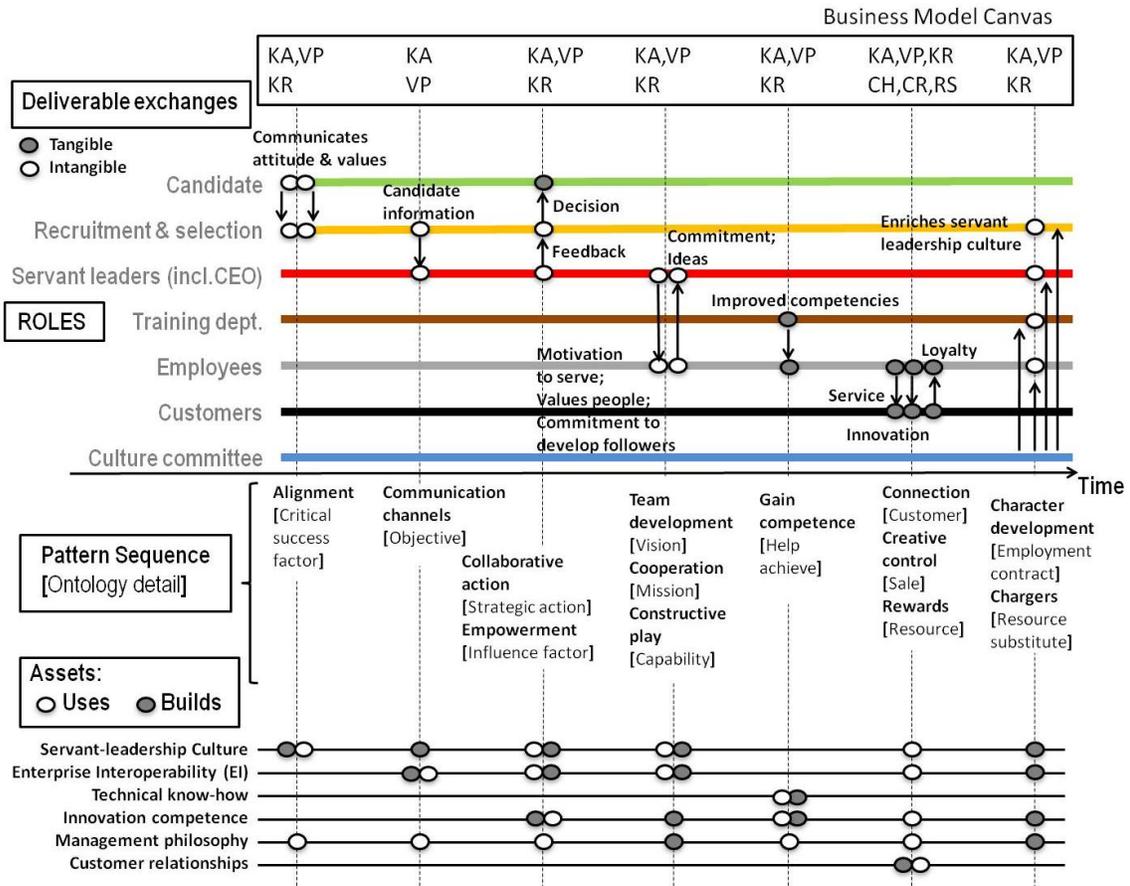


Figure 3. Deliverable exchanges between roles; a pattern sequence over time; assets built in a servant-led company (BNML).

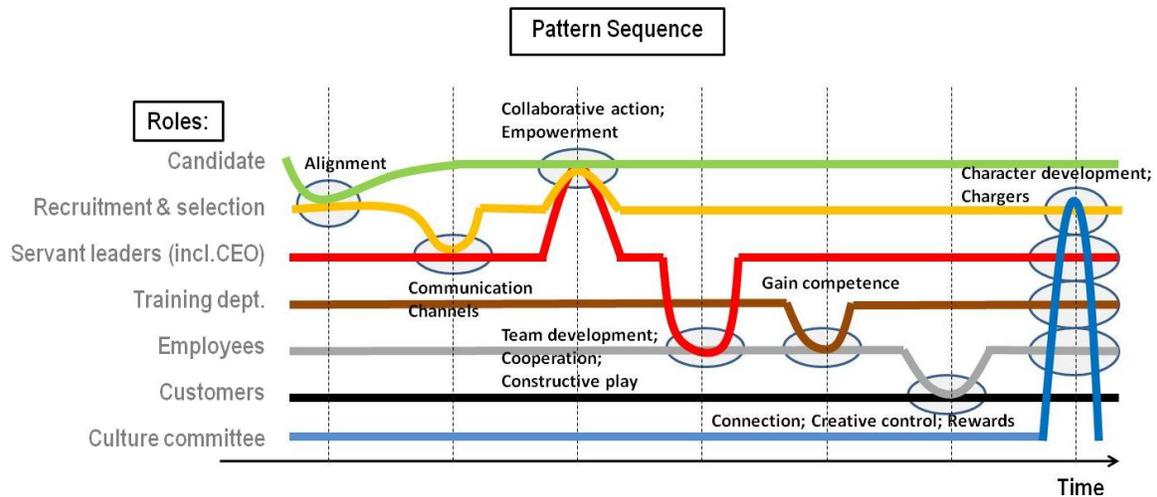


Figure 4. Roles and corresponding pattern sequence over time (BNML) in a servant-led company.

testifies:

“Servant leadership, such as that found at Southwest Airlines, so profoundly concerned with the well-being and

development of its employees, could be as equally successful with Portuguese employees – for that to happen great attention to recruitment and selection is a requirement, in order to hire those who could work

effectively under this type of leadership, otherwise this way of working in organizations seems utopia in Portuguese society” (Student from Portugal).

An evaluation of the candidates would normally be passed on to the CEO or other servant leaders who might give some feedback but, due to the empowering of employees, the decision to hire will rest with the recruitment and selection department. Furthermore, Upper-Echelon Theory (Hambrick and Mason, 1984; Winston, 2010) states that there will be a flow of the servant leader's (CEO's) values and beliefs to employees and is apparent in the motivation to serve and importance attached to people (values), which the CEO passes on. Employees respond with commitment and ideas to improve the business. Furthermore, employees, having been hired for their values and attitude, are developed by the training department, who will thus ensure new competencies are gained. Employees are thus in a position to serve their customers well and feel free to innovate in their service delivered. Customers respond with repeat purchases (loyalty), a valuable organizational resource. Finally, the culture committee, as described in McGee-Cooper and Trammel (2010), was also brought up by the students in the survey:

“Servant leadership is present in all aspects of the organization, being an integral part of its culture... to ensure that this unique culture is inculcated in all of the members of the organization there is a culture committee...” (Student from Portugal).

The culture committee is responsible for organizational survival and “recursive self-maintenance” (Bickhard, 2002; Aveiro and Tribolet, 2007) which is a process of creating and enriching the servant-leader culture. In servant-led companies “an important part of our culture is to be self-correcting” (McGee-Cooper et al., 2007; McGee-Cooper and Trammell, 2010). Figure 3 shows another view of the student narratives captured in our in-depth survey (BNML). Here, we see events occurring over time, as in a story, from recruitment and selection, to the capture of value (the reward for superior service is customer loyalty), and finally on to ‘resilience dynamics’ (Aveiro and Tribolet, 2007) interpreted in the final pattern ‘chargers’. Organizations are like engines which need to charge batteries (perform resource substitutes) to function properly and the pattern chargers ensures that attention is given to the charging / replenishing and repairing of the various departments and individuals when they depart from the norm. To the pattern sequence commencing with the alignment of attitude and values to servant-led organizations is added ontology detail (Uschold et al., 1998; such as “critical success factor” – recruiting candidates who value people above money) which is attached to each event (deliverable exchange).

In Figure 3, we can also see that the pattern communication channels (a form of interoperability) is seen to be an objective (ontology detail in brackets). The pattern collaborative action (another type of interoperability) which occurs between recruitment and selection and the servant leaders is seen to be strategic, the former being empowered to make recruitment decisions.

The patterns team development (of a unified vision), cooperation (having a sense of mission, which comes into being through yet this other type of interoperability) and constructive play (a capability) are also evident in exchanges between the servant leaders (including the CEO) and employees – with no “gate-keepers” involved (actors who might inhibit the communication exchange and thus have a negative influence on enterprise interoperability).

The training department helps employees gain valuable competencies in order to perform their work tasks (given that employees have the right attitude and values, for which they were selected). Ideas flow and employees connect with customers.

Finally, creative control leads to sales and to innovation. In servant-led organizations, due to the empowered value network, there is no fear of innovating and contributing with unique insights. This is seen to be in stark contrast to autocratic leadership organizations where a lack of interoperability exists due to the fear of reprimand, due to the fear of being terminated if things go wrong following risk-taking. Autocratic leadership leads to the extinguishing of ideas and creativity in the organization. In servant-led organizations creative control will lead to rewards such as customer loyalty, also evident in Figure 3.

Of note is that in Figure 3, the assets (at the bottom of the figure) appear in a given order, that is, the servant-leadership culture and corresponding management philosophy (which exists at the outset) precede an enterprise interoperability (EI) capability, which is progressively built as communication, collaboration and cooperation are encouraged to occur freely, without constraint. It is only after the EI capability has come to function that an innovation competence is progressively built and used, thus, fruit of the aforementioned communication, collaborative actions, cooperation and empowerment.

So, eventually, innovation will be the result of the servant-leader culture and EI. The servant leader(s) and EI are thus antecedents of innovation; innovation which is a deliverable and which appears on the front line in the innovative employee-customer service interactions.

Student survey testimonies which are very relevant and that provide evidence as to leadership and interoperability being antecedents of innovation are as follows: servant leadership leads to a free flow of information in the organization, thus promoting interoperability:

“Yes I would like to work in a servant leader organization where leadership allows for a free communication flow in the organization, contrary to authoritarian leadership where the voice of lower hierarchies is censored or filtered or altered by the time it reaches higher hierarchical levels” (Student from Portugal).

Servant leadership is also seen to lead to innovation by promoting free channels for communication:

“Servant leadership allows you to feel more “free” to make suggestions for innovation and you are not scared to be insulted or even fired” (Student from Germany).

“The main benefits of servant leadership are that with servant leadership the focus is not only on the leader; there is a sharing of power and responsibility, there is more autonomy and empowerment, with the possibility to contribute with ideas” (Student from Portugal).

“With servant leadership people are valued above money and creativity is encouraged; there is a healthy work environment; leaders serving others before self” (Student from Portugal).

The business model canvas (Osterwalder and Pigneur, 2010; Oliveira and Ferreira, 2011b) is also present in Figure 3 (at the top). The business model canvas is a tool which can be used to make evident who we are creating value for, and how. It has nine basic building blocks, six of which can be seen in Figure 3 (KA, VP, KR, CH, CR, RS). Recruitment and selection is a key activity (KA). Current and future employees are key resources (KR). The value proposition (VP) is delivered due to the servant-led culture / employees. Very significantly, the stage involving contact with the customer is where the most business model canvas building blocks are used (six). Innovative servant-led (VP) empowered service (KA) is delivered via employees (KR, CH) in a service company; who develop customer relationships (CR), which are the resource stream (RS) of the company. Finally, as mentioned earlier, we can see the culture committee ensuring character development and a ‘charging’ of:

1. The servant-led corporate culture.
2. Enterprise interoperability.
3. The innovation competence; and, ultimately.
4. The management philosophy.

Figure 4 offers another BNML representation, complementing Figure 3. The seven character storylines come together for social interaction, portrayed by the wavy lines moving around and connecting in grey clouds.

Progress is dynamic in the value network and the narrative occurs over time, according to patterns (the same patterns as can be found in Figure 3).

The patterns in Figure 4 are in fact key organizational terms: proper alignment from the outset, with communication channels in place, leads to collaborative action; empowerment leads to team development, cooperation and constructive play; as employees gain competencies they connect with customers through creative control and rewards are then reaped (innovation leads to superior products and service and consequently to additional sales and customer loyalty).

Finally, characters are continuously developed and the organization charged. How the characters achieve this, who they have to interact with over time, is shown in Figure 4. We feel that with our BNML visual representations of narratives that the communication of essential organizational concepts is easier and more far-reaching, thus contributing to the interoperability of management concepts, now made more accessible to a wider audience, including outside the academic arena.

EXECUTIVE SURVEY (RESEARCH STUDY 2)

Executive survey comments will be discussed below in Portugal, to nine companies in nine different industries, as follows: automotive seat manufacturing, automotive glass repair and replacement, food and beverage services, wood distribution / civil construction, telecommunications, information systems consulting, management software manufacturing, electric equipment manufacturing (motors and fans / ventilators), and metal dish / pot manufacturing. Company CEOs [Chief Executive Officers] and Directors were approached in order to gain access to their organizations for survey purposes. Of note is that after reading the survey in all cases the survey was deemed appropriate for executives rather than for “rank and file” employees, who are not in touch with the debate concerning leadership.

The survey was anonymous, as the survey topic was considered to be quite sensitive e.g. a discussion of current and preferred leadership types, and each company was given a distinct Internet (Google Docs) address to access the survey. Some insistence with the companies was necessary in order to improve the response rate from their executive teams as there is not a strong tradition in Portugal of companies participating in academic research efforts. Indeed one company which was contacted decided to not participate in the study at all. Respondents to our executive survey are Company Presidents, Company Owners with executive responsibilities, CEOs (Chief Executive Officers), as well as functional directors (such as quality directors, production directors, financial directors, sales directors, continuous improvement directors and marketing directors).

The format was slightly modified in relation to the exploratory student survey as (Servant Leadership) had to be defined, as well as autocratic leadership and

paternalistic leadership. Students did not have to be given such information, as leadership types had been a subject of discussion in class. An objective of the study was to complement the student survey, which had had very interesting results.

Furthermore, our executive study focused specifically on interoperability and innovation: What is the relationship between interoperability and innovation? While a relationship is likely to exist, according to the literature (Gasser and Palfrey, 2007), it is seen to be very hard to prove (Gasser and Palfrey, 2007) and this is thus a main objective of this paper. The executive survey format can be found in the annex of the article. Table 5 summarizes the quantifiable findings.

The majority of respondents (60%) believe that servant leadership can be successful in Portugal, much as it is in the USA. The leadership type thought to exist in the companies where the respondents work is:

- 1) Autocratic leadership (38.18%);
- 2) Paternalistic leadership (32.73%);
- 3) Servant leadership (7.27%);
- 4) Other (21.82%).

Thus autocratic leadership is the predominant type of leadership however paternalistic leadership follows close behind. Servant leadership, with less than 8% of the answers, is lacking in the sample of Portuguese companies.

A somewhat surprising result concerns question 5, "indicate the type of leadership which you would like to find at the company where you work". The vast majority would prefer to work in a servant-led organization, with 65.45% of the executive respondents indicating this preference (we recall that the student survey revealed a very similar tendency). This might signify that a certain degree of dissatisfaction with current leadership styles is present in the sample.

The executive respondents were unanimous in stating that leadership type affects organizational communication. Given that the respondents also believe that easy and fluid communication (interoperability) leads to corporate innovation (100% of the respondents answered "Yes" to question 10), and that this can only occur in the absence of autocratic leadership (autocratic leaders lead to employees fearing to give their honest opinions and contributions), one may be led to believe that, given the percentage of autocratic leaders encountered in the sample (close to 40%), Portuguese companies may be losing innovation opportunities and failing to tap into the potential of their employees.

Executive survey results (qualitative contributions)

The executives confirmed what the students said about servant leadership, interoperability and innovation. This

may mean that at top academic institutions students are being well-prepared for the "real" world. Furthermore, this may also mean that executives at well-performing organizations remain connected to academia, be it through training and / or the reading of key books and reports. Executive survey comments with respect to the questions shown in Table 5 are discussed thus.

Question 1: In your opinion, would this type of leadership at Southwest Airlines servant leadership be equally as successful in Portugal?

Servant leadership, for the majority of the executive respondents in our survey, is seen to be an avenue to bring out:

"... the best from inside of each employee" (Executive participant).

Thus, being a leadership type which:

"Will bring the most success to the company and that will for certain improve the social environment in the company" (executive participant).

However, 40% of the executive respondents, which is significant, stated that servant leadership is not applicable in Portugal (40% is still lower than the 56.6% registered in the student survey, so the executives surveyed appear to be more optimistic than the students, with 60% believing that Portugal can implement this leadership philosophy). One executive respondent, who believes that servant leadership is not applicable in Portugal, stated that:

"The Portuguese are not prepared to be led (by servant leaders). The Portuguese at work are normally small-minded, they dissimulate, they are sly, they do not like doing much, they are concerned with stepping on their colleagues to stand-out, and consider themselves to be under-paid and exploited by their employers. Thus Portuguese employees are in essence too small to understand this type of (servant) leadership".

Another executive stated:

"[Servant leadership] would not work in the Portuguese culture. The Portuguese are excellent employees when they are told [ordered] what to do, with well-defined tasks, and always controlled".

Yet another executive stated that:

"...I would say that the average Portuguese worker would have some difficulty in working as described at Southwest Airlines. It could be an "urban / organizational myth" but the average Portuguese does not react badly to a leadership type which is autocratic".

Table 5. Executive survey findings: A summary of the quantifiable answers.

Question	Answer (%)			
1) In your opinion, would this type of leadership at Southwest Airlines – Servant Leadership – be equally as successful in Portugal?	Yes- 33 (60)		No – 22 (40)	
3) What type of leadership do you think exists in the company where you work?	Autocratic Leadership – 21 (38.18)	Paternalistic Leadership – 18 (32.73)	Servant Leadership – 4 (7.27)	Other – 12 (21.82)
5) Indicate the type of leadership which you would like to find at the company where you work.	Autocratic Leadership – 2 (3.64)	Paternalistic Leadership – 9 (16.36)	Servant Leadership – 36 (65.45)	Other – 8 (14.55)
8) In your opinion, does the type of leadership which exists in a company influence the type of communication?	Yes – 55 (100)		No – 0 (0)	
10) Can easy and fluid communication [interoperability] lead to corporate innovation?	Yes – 55 (100)		No – 0 (0)	

Surprisingly, another respondent stated that they have autocratic leadership at his / her company and this is the desired type of leadership as:

“... leadership should be like that [autocratic] otherwise it is not really leadership.”

Somewhat in contrast, and suggesting that Portuguese employees are not happy at work, an executive stated that:

“I think that servant leadership could be successful, as we increasingly give less importance to people and more to the results of the company, we are in a period where the focus is results and nothing more. With this type of [servant] leadership we could probably achieve the same results, but with satisfied employees, a situation which in my opinion does not occur nowadays”.

However, servant leadership was also thought to not be viable in Portugal for other reasons. One executive stated:

“A service culture is not yet sufficiently disseminated (in Portugal) like in the USA (X amount of aviation companies operating for X amount of years) which requires taking big risks in new leadership models and of service differentiation”.

Yet another executive stated that the issue is not whether servant leadership will be successful or not in Portugal, which is reducing the problem. Rather:

“Servant leadership will have much more to do with the culture or even micro-culture of a given organization and the tissue / situation in which it operates, rather than with nationality”.

A significant percentage of respondents (21.82%) indicated “Other” as an answer to question 3. The “Other” leadership type indicated varied among respondents. One executive described a leadership type quite close to that of servant leadership:

“Our company has a model known for the importance given to the training of employees, to their involvement in decision processes”.

The executive called this a participative or collaborative leadership type in which the main people are heard before the taking of decisions and where people are given the autonomy and conditions so that the “implementers” will have the environment in which to be successful. Another interesting leadership type, again preferred and practiced at the respondent’s company, was described as follows:

"I would call it technocratic leadership – Leadership by professional / technical / management competencies... a sum of personal (soft skills) and professional / technical (hard skills) – competencies which need to be demonstrated along diverse "achievements" in order to guarantee the environment which will have the greatest success".

Another leadership type indicated as existing at one of the sample companies was democratic leadership:

"... where the leader delegates competence and tries to define strategies with his / her team".

Yet another leadership type seen to be existing in a company which was a part of the survey is a mix between paternalistic and servant leadership. However, in these two latter cases, servant leadership as a leadership type would be a preferred scenario (over democratic leadership and the mix between paternalistic and servant leadership).

One executive respondent stated that he / she would like to work under a shared leadership model, albeit with a strong influence of the leader, focused on corporate objectives but also on the creation of more jobs and excellent conditions (those possible) for the workers. Given the current poor economic situation in Portugal, where currently lay-offs are very commonplace and widespread, this might not come as a surprise.

Question 8: In your opinion, does the type of leadership which exists in a company influence the type of communication?

One respondent stated that:

"Communication is directly linked to the leadership type, the more open the leadership is with the team the better communication will flow".

Another respondent stated, showing the importance of interoperability, that:

"We cut two levels in the hierarchy so that communication and information would flow more clearly and quickly".

Another respondent added that:

"Autocratic leadership might lead to non-information, for fear of failing."

A similar comment by another respondent was that:

"Who wants to communicate with an autocratic leader? Who wants to say "No" or suggest different paths? Only someone committing suicide does that."

As the predominant leadership type in our survey is

autocratic leadership, this may mean that good / honest communication is simply not occurring in those companies.

Question 10: Can easy and fluid communication (interoperability) lead to corporate innovation?

The sample was unanimous in saying "Yes" to this question, which we see as being instrumental in answering the research question: what is the relationship between interoperability and innovation? Easy and fluid communication (interoperability) is seen to lead to innovation, according to the 55 executives surveyed. One respondent stated that fluid and uninhibited communication encourages maturity and a sense of responsibility in the workers, which is seen to be very positive. Another respondent stated that fluid and fast communication makes the company "go" faster; leading also to less bureaucracy, which will mean company processes are more agile and this will make innovation possible.

On the other hand, continued this respondent, less fluid communication and more difficult (bureaucratic) communication leads to people being lax and with a lack of initiative, corresponding to less innovation. Yet another executive stated that if people feel at ease to communicate then the subsequent exchange of ideas will lead to innovation occurring. Another executive stated simply that:

"From discussion comes the light".

Surprisingly, in a company where there is a predominantly autocratic leadership type, seen to be desirable in that company by this respondent, and meaning that communication will probably be inhibited, nonetheless the respondent acknowledged that the more you discuss and communicate, the more new ideas and solutions will result, which will facilitate organizational innovation. Are some companies resigned to the fact that innovation is not for them? Finally, one executive stated interestingly that good communication can lead to a good development of the company but that this in the vast majority of cases will not mean innovating at all! In the cases where there is innovation, continued this executive, the applied development will have to have had good communication:

"These processes are born from team work in the majority of instances – it is necessary to bring together to the same table those with market knowledge, those who know the technology / projects, and those who know the manufacturing side or logical chain."

LEADERSHIP, INTEROPERABILITY, INNOVATION AND COMPETITIVENESS

The situation in Portugal in view of the student and executive survey results

Hofstede's analysis of Portugal was quoted in the

exploratory student survey by a student.

Hofstede, in particular “a Dutch social psychologist who did a pioneering study of cultures across modern nations⁵” which led to Hofstede being “internationally the most cited professor among Dutch economists... With 3240 citations, Hofstede’s work in the field of organizational culture leaves other economists far behind⁶”; Hofstede having been included in an elite group of the top twenty most influential management thinkers Worldwide, named by the Wall Street Journal (White, 2008; Hofstede et al., 2010), stated that as Portugal is seen to have a high power distance culture (20 points above the European average, on a scale of 0 to 100⁷; Hofstede, 1980, 2001), characterized by “employees being afraid to express disagreement with their managers” (Hofstede, 2001) and “information constrained by hierarchy” (Hofstede, 2001), autocratic and paternalistic leadership are the dominating leadership philosophies in this country (Hofstede, 2001).

This was confirmed by our executive survey and may mean that an environment conducive to innovation, in Portuguese organizations, is not occurring, even though it is especially in need, given the recent turbulent environment felt globally.

Given Portugal’s diminishing competitiveness, according to the Global Competitiveness Index 2010 to 2011, where Portugal is ranked 46th (World Economic Forum, 2010), down from 22nd in 2005 to 2006, healthy leadership, where employees contribute without fear of reprimand and where information flows freely, a high degree of interoperability between systems existing, may need to be made a national priority.

The need for enterprise interoperability (EI), in our current age of ubiquitous technology undergoing constant, and rapid, change, will in turn require information and communication technologies (ICT) as an enabler.

EI will in these conditions lead to innovation and in turn to economic growth. The cycle will then continue, as the need for EI is self-perpetuating. In such an environment, servant leadership principles will be an underlying assumption.

A nation’s culture may take as long as one hundred years to change (Hofstede, 2001). There is then not a day to be lost. The turn towards servant leadership needs to occur, not only to result in healthier organizations, but to improve the global competitiveness of organizations and nations alike, also.

Furthermore, this is the predominant desire of both the younger generation, who are soon to be graduating from university, as well as the executives in our sample, that they be empowered to serve and to contribute to a better future for their organizations and countries.

The building and usage of an enterprise interoperability (EI) capability

Building on our discussion of the narratives in the surveys leads to the following BNML interpretation in Figure 5 concerning the building and usage of an enterprise interoperability (EI) capability. This figure represents a servant-led company in motion, not taking into account, for example, recruitment and selection as in Figures 3 and 4 (recruitment and selection was not brought up by the executives surveyed).

So, it is an EI capability (an asset at the bottom of Figure 5) which will lead to innovation, first occurring in the communication channels pattern (also present in Figures 3 and 4). Communication will evolve into knowledge sharing, involving all employees, so essential for innovation to happen and evident in the last pattern collecting (collecting resources or revenue streams from customers).

Servant leaders, by opening up communication channels, by encouraging collaborative action, and by empowering employees (three patterns in Figure 5), manage to increase organizational commitment, trust, and employee motivation, hence, appearing in Figure 5 as intangibles.

These intangibles are instrumental for the appearance of the asset recursive self-maintenance (to charge the enterprise) and are essential also for the patterns constructive play and creative control to occur. Innovation is then delivered to the customer.

The business model canvas is also present in Figure 5 (at the top), making politically intelligent decisions is just one of a number of key activities (KA) in servant-led companies; organizational commitment, trust and motivation are examples of key resources (KR) present in servant-led companies; and finally, it is the value proposition (VP) to be able to continuously change, creatively, that will lead to superior customer relationships (CR) and a consistent revenue stream (RS).

Our additional research conclusions, building also on our literature review, are thus that:

1. Servant leaders are seen to be politically intelligent, thus facilitating organizational change (innovation).
2. Furthermore, servant leaders increase organizational commitment by acting on the organizational culture.
3. Servant leadership increases trust and communication between staff, thus increasing knowledge sharing which may lead to innovation.
4. Servant leaders increase employee motivation due to good employer-employee relationships and by shaping the environmental and organizational settings.
5. Servant leadership elevates employee self-efficacy, an employee’s perception that he / she can achieve a mission, which is essential to organizational success as “self-confident people are more likely to keep at it and succeed” (Tsai et al., 2011).

⁵ <http://www.geerthofstede.nl/>, accessed on 26-08-2011.

⁶ <http://www.fdeuw.unimaas.nl/os/diversity.htm>, accessed on 26-08-2011.

⁷ http://www.geert-hofstede.com/hofstede_portugal.shtml, accessed on 29-08-2011.

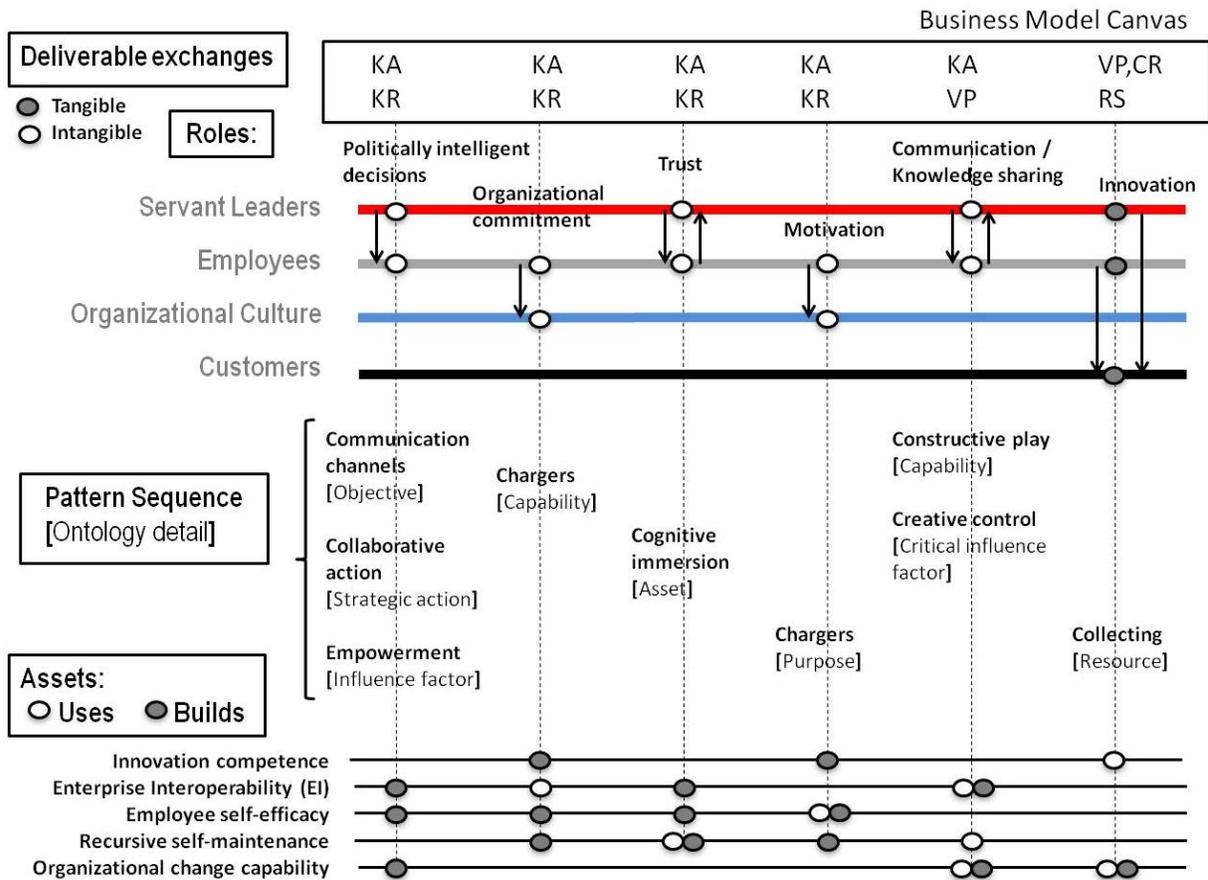


Figure 5. The building and usage of an enterprise interoperability (EI) capability.

THE CASE STUDY (RESEARCH STUDY 3)

Infosistema: A case of servant leadership in Portugal

For Research Study 3, we did a case study of Infosistema, which was chosen for its innovative practices and products and for its servant leadership philosophy. Infosistema was founded in February, 1996. Infosistema, currently with three managing partners, employs sixty people and had annual sales of just under 3 million Euros in 2010. The status of PME Lider was given to Infosistema by IAPMEI, Turismo de Portugal, and seven major partner banking institutions operating in Portugal (Barclays, Banco BPI, Banco Espírito Santo, Banco Espírito Santo dos Açores, Caixa Geral de Depósitos, Banco Millennium BCP, Banco Santander Totta), based on rating notations and on economic and financial criteria. This means that Infosistema is a leading SME (small and medium sized enterprise) in Portugal with excellent management indicators (efficiency and competitiveness). Infosistema customers include the following seven banks: Banco Santander de Negócios Portugal, Banco Santander Central Hispano, Banco

Espírito Santo, Caixa Geral de Depósitos, Banco Mais Tecnicredito – Grupo BCP, Banco Santander Totta, and Banco Português de Negócios.

The CEO and one of two founding partners, Jorge Pereira, is an engineer who studied engineering at Instituto Superior Técnico, in Lisbon, having also a Master's degree from Universidade de Trás-os-Montes e Alto Douro / UTAD. Jorge Pereira was interviewed twice in 2011, once for one hour, at an international conference where Jorge Pereira presented a paper, the second time during a company visit by one of the authors to the head office of Infosistema, in Lisbon, Portugal, this time over a 90 minute period.

CEO Jorge Pereira, after learning about the servant leadership philosophy with one of the authors, agreed that Infosistema was definitely a case of servant leadership. This is evident in their hiring for attitude and values more than for technical competencies; in their concern for developing their employees; in their preoccupation with serving others, that is, employees, customers, and community; and in their promotion of the sharing of ideas and knowledge through unhindered communication channels. Furthermore, the CEO is a

leader who also exists to develop and serve others, according to Jorge Pereira, and this is how he sees his job.

Objectives

Qualitative research methods, for example using in-depth interviews and the case study method can help us deepen our understanding of servant leadership (Winston, 2010). The interviews we performed had the general objective of enquiring into servant leadership practices and also into the relationship between this leadership philosophy and interoperability and innovation. Following the gathering of company information and information about the interviewee's background, the semi-structured interview questions followed a script with the following additional questions:

1. What do your work functions involve?
2. With whom do you have to interact in order to perform your work functions?
3. What deliverables do you exchange?
4. Do the deliverables exchanged follow patterns, for example of cooperation?
5. How is value created in the organization with your interactions?
6. How do you describe your interactions with customers?
7. Are customers a source of innovation?
8. Do you see your functions changing in the near future?
9. Do you have an R and D (research and development) department?
10. How much do you invest per year in innovation?
11. How can a "culture of innovation", receptive to and promoting of innovation, be created by a company's leaders and aided by technology?
12. "Do certain common principles guide uncommonly innovative companies down the risk-riddled road to value creation?" (Zien and Buckler, 1997)
13. What is the strategic role of ICT (information and communication technologies) in the promotion of innovation?
14. How do information and communication technologies (ICT) affect organizational intangibles?
15. How can a corporation "institutionalize and routinize innovation" (Tzeng, 2009), in order "to render a previously ad hoc innovation into a routine, which is a repeatable economic event" (Tzeng, 2009)?
16. How does interoperability relate to innovation (Gasser and Palfrey, 2007)?

Additionally, other subjects of interest were pursued as they were brought up during the course of the interviews.

Description

Despite the well-publicized crisis in Portugal and it been

necessary for the International Monetary Fund (IMF) and the European Union (EU) to provide financial aid to Portugal, annual sales have not been adversely affected at Infosistema.

Infosistema is an information systems consultancy which sells technological solutions to its customer base, customers which are mainly from the banking, insurance and public administration sectors. Infosistema has four main business units: business consulting, IT (information technology) consulting, SAAS (software as a service), and technology. The focus is on innovation and improving the performance and productivity of its customers, implementing technologies that lead to growth.

Infosistema is a certified partner of Microsoft, Oracle and OutSystems; as well as being certified by APCER according to the norm ISO 9001:2008. Furthermore, Infosistema spends between 5 and 15% on R and D activities, annually.

Jorge Pereira's main activities are: making the business more dynamic; creating new business and new opportunities; getting new customers; negotiation and sales; and, more recently, training senior managers to become project managers who will also be responsible for creating a new business offering and getting new customers. Jorge's career in the past has always been closely linked to technology.

Jorge has thus also performed more technical tasks such as giving training in operating systems, giving training in data base administration, gaining certification in Oracle data bases, as well as Oracle applications installation of the technological component in the financial area (for a period of two years the only person in Portugal to do this for Oracle).

Currently, Jorge is a consultant who is able to easily maintain a dialogue with information systems and technology managers at customer companies, helping to define architectures, software policies, and information systems strategy to efficiently support businesses. Products sold include home and mobile banking, mobile insurance, and (in the future, if the market improves) mobile public sector services solutions to support citizens. Smart phones and iPads are some of the tools / technologies focused upon, namely as an evolution of traditional Internet services in the public and private sectors, to more mobile channels.

The goal is to provide innovative technological solutions which are efficient and cost-effective and which benefit their customers' businesses. "Comfort" for end users is also a focus – comfortable meaning being able to do the same things in a more simple fashion and within their own space (normally domestic, in a place where they like being).

The first interview with Jorge was recorded in audio while the second interview was registered in hand-written notes. Other sources of information were the corporate website (www.infosistema.com) as well as product brochures and other marketing material provided.

Promoting innovation at Infosistema along the BNML pattern sequence

“Phenomenological in-depth interview studies result in extensive data that the researcher codes into concepts, patterns, and an interpretation of the subject’s lived experience of the phenomena” (Winston, 2010). The authors followed this methodology to uncover how a number of factors contribute to innovation at Infosistema. The student survey results represent a more academic look into servant leadership and thus the patterns identified in this initial study served as a basis for the case study discussion.

A discussion thus follows of how the 13 patterns present in Figures 3 and 4, BNML representations resulting from the exploratory student survey into servant leadership, tell a story of servant leadership, interoperability and innovation at Infosistema:

1. Alignment pattern: Much in line with the servant-leadership philosophy, at Infosistema people are recruited for their attitude, for their motivation and for their capacity to learn and to solve problems. Employees are generally carefully hired straight out of university – mostly engineers, for internships, receiving token salaries of between 400 and 600 Euros per month, for between two- to six-month periods.

2. Communication channels and 3. Empowerment patterns: The project managers are responsible for the hiring of human resources for their projects. They may consult the CEO, face-to-face or by e-mail, before deciding, but have the autonomy necessary to decide on new-hires for themselves.

4. Collaborative action pattern: The human resources working at Infosistema are recognizably the greatest asset, according to CEO Jorge Pereira, both leaders and followers alike, much as Keith (2010) advocates should be the case with servant leadership organizations. “We constantly promote an innovation culture” (Jorge Pereira, CEO Infosistema) in which programmers collaborate in product development.

5. Team development pattern: “In terms of promoting innovation it is essential for our company and business, in order for us to have any chance of success. We can say what went well but it is easier to say what went wrong, which is often a lot.” (Jorge Pereira, CEO Infosistema). They have found at Infosistema that stress is an enemy of creativity. So that employees may relax at work and thus be more creative, Infosistema has a meeting room which is easily converted into a playroom with four Wii joy sticks / command sticks plus console and screen for moments of leisure. Furthermore, fruit, coffee and biscuits are free and available in a common room which is equipped with a fridge and a micro-wave oven. The office space is also

open, to promote a relaxed atmosphere and a sense of collective belonging amongst employees.

6. Cooperation pattern: It is company policy to share work practices and indeed it is made quite clear that this is a part of the corporate culture which employees must assimilate. Programming practices vary considerably between programmers, for example, and so the sharing of programming routines used, between programmers, is very important and contributes to the efficiency of Infosistema in the marketplace. The objective is “to do more with less” (Jorge Pereira, CEO Infosistema).

7. Constructive play pattern: “IT, such as e-mail and our Intranet system, is an operational vehicle for innovation.” (Jorge Pereira, CEO Infosistema). Corporate communication happens via e-mail (all employees are encouraged to communicate with senior management about whatever topic they deem to be important whenever they want to), over the Infosistema Intranet (which has several levels of restricted access, some sales and financial information not available to everyone), as well as in face-to-face meetings. There are also several corporate / teambuilding events held every year where the corporate vision and future company policy / strategy is communicated and other important information is disseminated amongst employees and managers. Feedback is also gathered at these events from all levels in the organization. Brainstorming sessions with senior project managers also result in innovation.

8. Gain competence pattern: Once hired employees then receive in-depth technical training, which has “pros” and “cons”. On the one hand employees grow with the company (following an internship Infosistema increases salaries of employees typically to 1,200 Euros per month), on the other hand they quickly gain notoriety in the market and are often approached by rival companies once they have specific (and valuable) know-how, and then they are enticed to leave. CEO Jorge Pereira says that this is a risk which they have to take, they do not forbid people from leaving the company, indeed cannot do so according to Portuguese law. Investments in human resources of 10,000 Euro each (gradually, over time) are relatively easy. Technical books are also readily available for employees to further their learning, as are computer-based training programs.

9. Connection pattern: Other training which employees receive is linked to negotiation, marketing, and presentation skills. Namely project managers and senior consultants are invested in by Infosistema, which prepares them for future challenges. Thus senior employees will easily connect to customers in the fashion required by Infosistema, to ensure a sustainable future for the company.

10. Creative control pattern: Besides 2 to 3 people

working flexibly in Research and Development (R and D) on-site, additional R and D is actually carried out off-site, near the Portuguese University in Covilhã, in a center with a software product development and implementation team of 4 to 5 people (working part-time). Sales come easier when products and services offered are innovative. Innovation normally comes from inside Infosistema and not, for example, from customers (who only exceptionally contribute with innovative ideas). For the last three years in particular they have been working in the direction that Infosistema is a consultancy, not a reactive company responding with technology to a problem. Infosistema tries to stay a step ahead and carries out research into scientific research about technological innovation, which is innovation which they may adopt and take to customers, to help them to better support their businesses. There are international studies which point with some certainty to certain directions as future tendencies in technology and Infosistema does applied research into those areas. i-Flow, for example, is a BPM (business process management) product which Infosistema has developed for the BST bank, to dematerialize business and management processes.

11. Rewards pattern: Customer loyalty and superior sales follow creative control, ensuring growth even in times of economic crisis. Some senior managers at Infosistema are responsible for large project teams and significant amounts of sales with major customers.

12. Character development pattern: Some Infosistema employees are very talented in ensuring superior contact and service to customers. In the case of extremely talented individuals, and to ensure high levels of motivation and loyalty to the company, Infosistema does give a minority share holding of the company to employees (as mentioned occurs in other servant-led companies –McGee-Cooper and Trammell, 2010).

13. Chargers pattern: The ‘engine’ of Infosistema is charged constantly:

“To achieve an effective culture of innovation you have to share success, disseminate success, and impose practices so that people can overcome the initial barriers; you have to give them the chance to see the results of success. It is a constant effort. Often without achieving the objectives we want.” (Jorge Pereira, CEO Infosistema).

Change and innovation at Infosistema are taken very seriously, especially certain routines such as sharing the laurels of successful innovation:

“People were not made by nature for innovation. There is a constant natural intrinsic reaction, almost animal-like, in humans against change. Everyone is like that. It is only

human to resist that which we do not know. Innovation is a very complex cycle. There are resistances. For innovation to occur we have to impose practices and routines, and we have to share some of the successful results when innovation happens.” (Jorge Pereira, CEO Infosistema).

Finally, Aveiro and Tribolet’s (2007) concept of organizational survival and recursive self-maintenance gains life via the project managers, who are constantly monitoring project health. Microgenesis processes (Aveiro and Tribolet, 2007) involve organizational micro changes required for adaptation to new environments – nothing is taken for granted as: “currently, we live amid constant change... Businesses are volatile – Trends and best practices evolve very quickly and when we talk of innovation, nowadays, it is becoming less and less clear to me what that means... Very formal methodologies, which are very time-consuming, have no chance for survival in companies which essentially work with technology” (Jorge Pereira, CEO Infosistema). Figure 6 shows, diagrammatically, how value is created and exchanged within Infosistema’s value network, summarizing much of the preceding discussion about the promotion of innovation.

Antecedents of innovation at Infosistema

Figure 7 is a development of Figure 1. Figure 7 exemplifies how servant leadership leads to interoperability and then to innovation at Infosistema. CEO Jorge Pereira sees it as being his job to promote communication at Infosistema, as this will lead, given the right human resources, to innovation:

“Any act of communication (interoperability), human or technical, leads to innovation, because we understand the problems of others. We gain knowledge with the problems of others and in seeing our own limitations. Those are motives for us to seek innovation in some form... Having a constructive attitude to understand the problem and then to reunite from previous innovation efforts, by others, that which can be used to solve this problem, is a way of contributing to innovation – joining together pieces of innovation of others” (Jorge Pereira, CEO Infosistema).

Knowledge sharing and innovation do not occur naturally, however, and certain measures need to be imposed by senior management for knowledge sharing and innovation to happen. Servant leadership is not about being soft and servant leaders can be tougher than benevolent dictators (Covey, 1994; Prosser, 2010), as Jorge Pereira stated when referring to the need to impose a culture based on knowledge sharing and innovation at Infosistema:

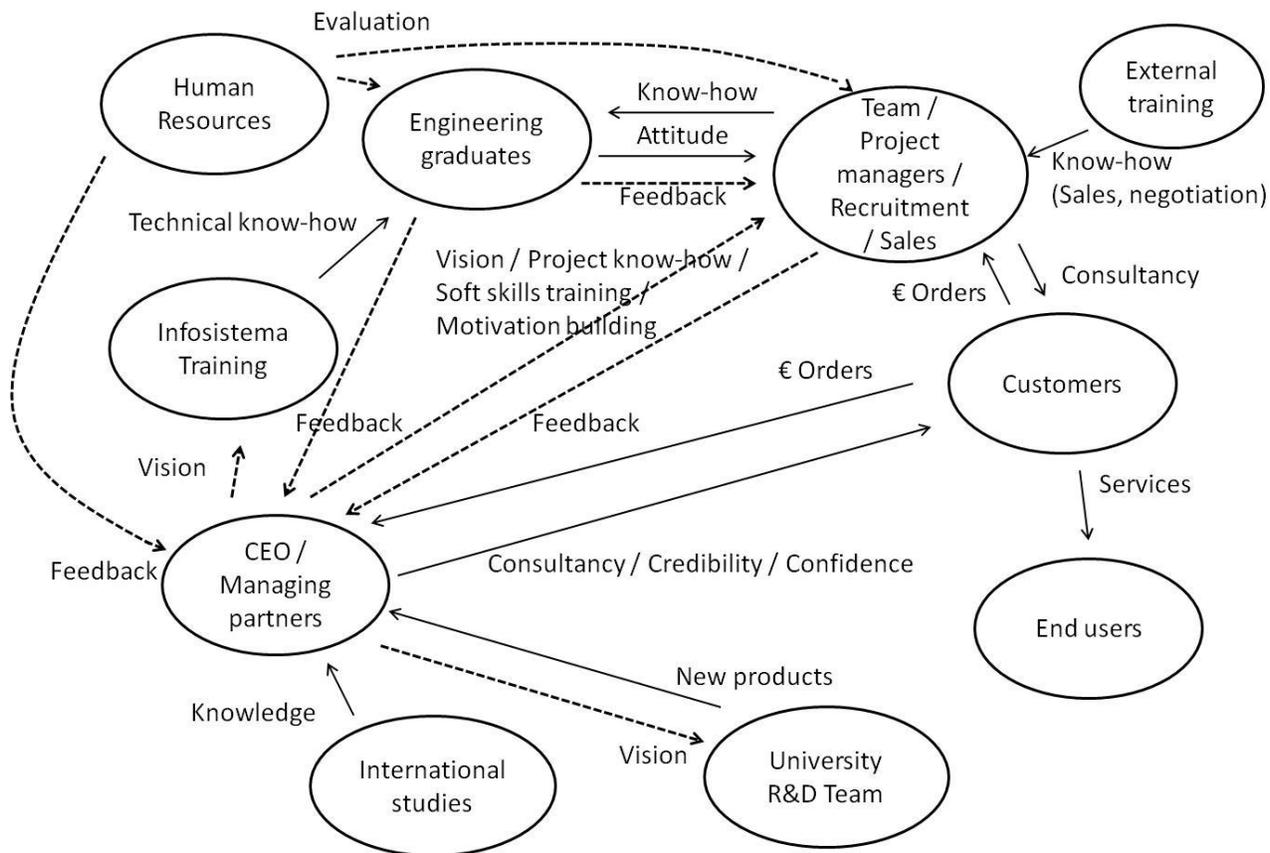


Figure 6. The value network at Infosistema.

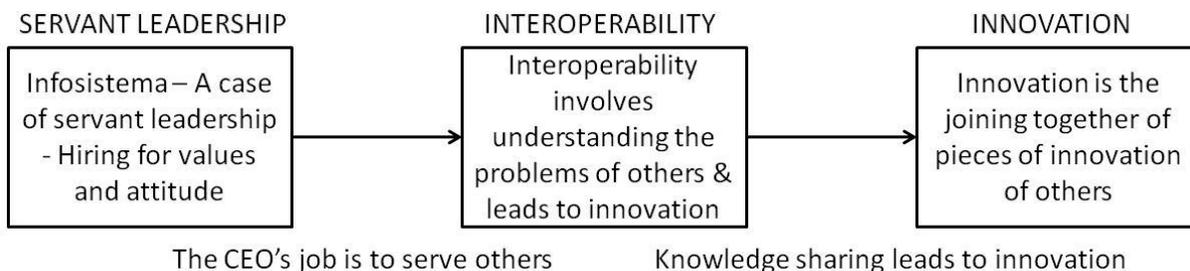


Figure 7. Antecedents of innovation at Infosistema.

“Interoperability involves human competences and technology. We seek to provide all of the necessary tools to our employees to allow for technical interoperability. Interoperability at a different level also exists – interoperability between people – and has to do with knowledge sharing. We have levels on our Intranet system for technical knowledge sharing between our teams. It is a constant challenge. Often unsuccessful. technicians in general do not have the motivation, training, routine or objective to share... In social and

human relations terms we have the objective to get people to share but in reality the results are far from what we desire. Sharing happens when we make them share.” (Jorge Pereira, CEO Infosistema)

In sum, we did the case study of Infosistema in order to show that servant leadership organizations can and do exist in Portugal. This also illustrates that other high power distance cultures, such as those found in Africa, can turn to servant leadership as an avenue to increased

competitiveness and innovation.

DISCUSSION OF THE THREE RESEARCH STUDIES: INTEROPERABILITY FOSTERS INNOVATION

“One of the reasons why we tend to like interoperability is that we believe it leads to innovation,” stated Gasser and Palfrey (2007).

However, “the relationship between interoperability and innovation, while it likely exists in most cases, is extremely hard to prove” (Gasser and Palfrey, 2007). Our study demonstrated that servant leadership is a promoter of interoperability – “the ability of a system or an organization to work seamlessly with other systems or organization(s) without any special effort” (Mertins et al., 2008). Servant leadership unblocks communication channels between employees and leaders at all levels (see also Greenleaf, 1970 and, more recently Dierendonck and Patterson, 2010a), in stark contrast to more autocratic leadership companies (as Hofstede, 2003 and Dantas, 2011 also state). This enterprise interoperability leads to greater innovation output, where all contribute without fear of reprimand, and thus to superior organizational results (Nakata and Sivakumar, 1996; Dantas, 2001; Dantas, 2011).

Table 6 summarizes the findings of the three research studies. The relationship between interoperability and innovation has been demonstrated, the former being an antecedent of the latter. The 55 executives were unanimous in their view that interoperability (easy and fluid communication) leads to innovation. The 55 executives were also unanimous in stating that leadership type influences organizational communication – autocratic leadership inhibits while servant leadership practices promote interoperability. The students also believe that interoperability leads to innovation and the case study evidence points in that direction too. Indeed, the three studies revealed similar results though the executives surveyed, in particular, showed a more positive outlook than the students as concerns the applicability of servant leadership in Portugal, thus perhaps feeling more in control of their destinies than the students and more capable of effecting the necessary culture change to make servant leadership and the resulting interoperability and innovation happen in Portuguese organizations. Certainly, we are living in times of profound change in Portugal, with the presence of the “Troika” Committee (including the European Commission, the European Central Bank and the International Monetary Fund) providing strong aid as to what should and should not be done to move Portugal forward, out of the current economic crisis.

Figure 8 shows the pattern sequence (generated by Graphviz software) made evident by the surveys and demonstrates how communication channels (interoperability) leads to innovation (creative control). The three management tools collaborative action,

communication channels and empowerment start a process of organizational charging (of both capabilities and purpose) and cognitive immersion. Constructive play and creative control (innovation) then lead to the collecting of revenue streams.

While there is some skepticism as to the possibility of servant leadership being able to be successful in Portugal, the desire for leadership styles to change is significant, especially away from autocratic leadership and more in the direction of servant leadership. One executive went as far as saying that disagreeing with an autocratic leader is “suicide”. This is not seen to be a very propitious environment in which innovation may occur. Another executive stated that:

“A leadership style which creates fear in the employees, either due to repressive acts, or due to frequent and disproportionate or unjust “punishments”, inhibits internal communication.”

Significantly, over one third of the executives surveyed viewed their companies as being autocratic. On the other hand, one executive stated that at his company two hierarchical levels had been recently eliminated in order to speed up and facilitate communication / information flows. This is seen to be a clear move in the direction of interoperability and being able to seamlessly interoperate with others is a determinant of organizational competitiveness – indeed “enterprise interoperability has become a strategic necessity in all industries” (Li et al., 2006). One executive stated:

“Only with transparent information can one improve and innovate.” Another executive stated: “Communication and the exchange of ideas are always positive as we can thus see different points of view and not only ours and thus reach a better final result.”

Finally, in the case study of a servant leadership company, Infosistema, a leading SME (small and medium sized enterprise) in Portugal with excellent management indicators and which has managed to escape the economic crisis felt for some time in Portugal and Worldwide – the CEO and other senior managers are seen to be dedicated to serving followers, characterized as being motivated employees also, equally committed to the success of the company.

Conclusion

The study we undertook is unique in so far as it involved Portuguese students, Portuguese executives and a Portuguese company which was the subject of a case study. We feel that such research comes at a crucial time for Portugal, given the current serious economic crisis Portugal is in. We hope to point a way forward, in the long term, for Portuguese companies, which are the engine of the economy. We are on the one hand satisfied

Table 6. A summary of the three research studies.

Method	Research study 1	Research study 2	Research study 3
	In-depth student survey	In-depth executive survey	Case study
Sample size / description	54 students finalizing BSc. degree in management	55 executives from nine companies in nine industries	Infosistema - Information systems consultancy
Main research objective	Does interoperability lead to innovation?	Does interoperability lead to innovation?	Does interoperability lead to innovation?
Secondary research objectives	What is the role of servant leadership?	What is the role of servant leadership?	What is the role of servant leadership?
Data	Students' answers (quantitative and qualitative)	Executives' answers (quantitative and qualitative)	Two interviews with CEO; analysis of company practices; observation during company visit
Research tools	Statistics; Value network analysis; BNML; student testimonies	Statistics; BNML; executive testimonies	Interview excerpts; Value network analysis; BNML patterns from student survey
Opinion that servant leadership would be successful in their home country	Yes – 20.8%; Yes, but with some difficulty – 22.6%; No – 56.6%	Yes – 60%; No – 40%	Servant leadership appropriate only for particular types of organizations; very difficult to implement in Portugal
Applicability of servant leadership	Specific national and organizational cultures required	Specific national and organizational cultures required; appropriate in specific situations	Specific national and organizational cultures required
Preferred type of leadership	Servant leadership – 53.7%; Democratic leadership – 33.3%; Paternalistic leadership – 3.7%; Autocratic leadership – 0%; Other – 9.3%	Servant leadership – 65.45%; Paternalistic Leadership – 16.36%; Autocratic Leadership – 3.64%; Other – 14.55%	Servant leadership for particular types of organizations; not easy to implement in Portugal
What type of leadership do you think exists in the company where you work?	-----	Servant Leadership – 7.27%; Paternalistic Leadership – 32.73%; Autocratic Leadership – 38.18%; Other – 21.82%	Servant leadership
Relationship between interoperability and innovation	Students believe that interoperability leads to innovation	55 executives unanimous that interoperability leads to innovation	Case study evidence that interoperability leads to innovation
Relationship between leadership and organizational communication	Students believe that autocratic leadership inhibits while servant leadership promotes interoperability	55 executives unanimous that leadership type influences organizational communication; autocratic leadership inhibits while servant leadership promotes interoperability	Case study evidence that servant leadership promotes interoperability
Need for servant leadership in Portuguese companies	Yes – High priority	Yes – High priority	Yes – High priority

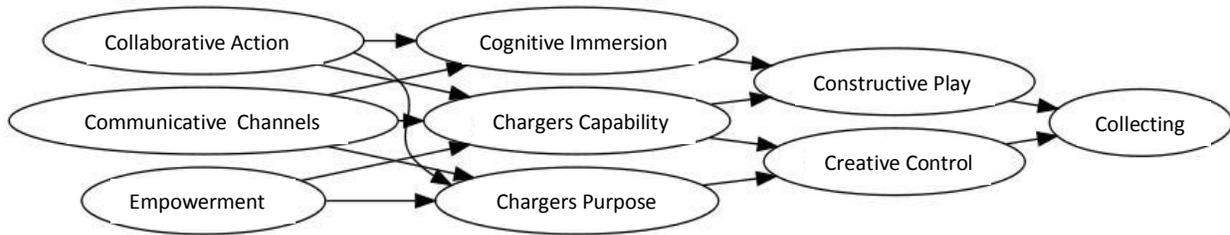


Figure 8. Pattern sequence showing how interoperability fosters innovation.

with how BNML was able to describe the series of events characterizing a servant leadership company. On the other hand we are satisfied that we were able to demonstrate that servant leadership and enterprise interoperability are both antecedents of innovation. Enterprise interoperability is an asset which is first built and then used by an organization. The leadership type in an organization will have a significant influence on organizational communication channels (interoperability) and subsequently on innovation output and revenue streams.

LIMITATIONS OF THE RESEARCH STUDIES AND SUGGESTIONS FOR FUTURE RESEARCH

By listening to what students have to say we are indeed listening to voices of the future. Our student survey, while providing ground for further discussion into the servant leadership philosophy, would benefit from other survey efforts enquiring into the applicability and desirability of servant leadership in organizations located in different geographic regions Worldwide. Similarly, other survey efforts discussing servant leadership, interoperability and innovation, and involving executives, are encouraged. Furthermore, our case study of Infosistema provided a good example of servant leadership in Portugal. More cases need to be brought to the fore, however, for this leadership philosophy to gain more followers. Qualitative research methods, involving for example interviews, are seen to be appropriate to deepen our understanding of such phenomena. Servant leadership is seen to be a way to contribute to a more caring society. Thus, more studies on the subject are needed, with a greater number of respondents sharing their in-depth views.

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