

Association for Information Systems AIS Electronic Library (AISeL)

MCIS 2014 Proceedings

Mediterranean Conference on Information Systems
(MCIS)

Summer 9-4-2014

CONSTRUCTING AN OPEN SOURCE ERP SALES PITCH – IN SEARCH FOR INTERPRETATIVE REPERTOIRES

Özgün Imre

Linköping University, ozgun.imre@liu.se

Follow this and additional works at: <http://aisel.aisnet.org/mcis2014>

Recommended Citation

Imre, Özgün, "CONSTRUCTING AN OPEN SOURCE ERP SALES PITCH – IN SEARCH FOR INTERPRETATIVE REPERTOIRES" in Mola, L., Carugati, A., Kokkinaki, A., Pouloudi, N., (eds) (2014) *Proceedings of the 8th Mediterranean Conference on Information Systems*, Verona, Italy, September 03-05. CD-ROM. ISBN: 978-88-6787-273-2.

<http://aisel.aisnet.org/mcis2014/33>

This material is brought to you by the Mediterranean Conference on Information Systems (MCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in MCIS 2014 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

CONSTRUCTING AN OPEN SOURCE ERP SALES PITCH – IN SEARCH FOR INTERPRETATIVE REPERTOIRES

Imre, Özgün, Linköping University, Linköping, Sweden, ozgun.imre@liu.se

Abstract

Open source enterprise resource planning (OS-ERP) systems have been gaining recognition in the last few years. However while the research has focused on the implementation phase of OS-ERP systems, there is scant research done on the adoption process of such systems. This paper looks at an early paper on an OS-ERP system, targeting both practitioners and researchers, to identify the repertoires used to argue for the adoption of the said system. To achieve this aim the paper is evaluated by using a strain of discourse analysis - interpretative repertoires. Three distinct repertoires are identified that are used to argue for the unique value gained by adopting the OS-ERP in question, by both highlighting positive aspects of the system, as well as alluding the pitfalls of other systems. These repertoires are also mapped to the existing literature on diffusion of innovations and resource based view to highlight how the existing ideas are reformulated in the identified repertoires.

Keywords: open source, ERP, discourse analysis, interpretative repertoires, diffusion of innovation, resource-based view

1 Introduction

The last two decades have seen the rapid adoption of enterprise resource planning (ERP) systems throughout the world. Today the traditional large-enterprise oriented proprietary ERP (P-ERP) systems have shifted their focus to small-and-medium sized enterprises (SMEs), a market segment that is also targeted by open source ERP (OS-ERP) systems (Johansson & Koroliov 2012). While the P-ERP systems have been researched extensively throughout the years, there is scant research done in the OS-ERP field – even though they promise similar benefits to the companies.

ERP implementations are costly projects – usually running up to millions of dollars (Shehab et al. 2004) - and are considered to be one of the major technology investments of organisations – regardless of their size (Jones et al. 2011). Furthermore, the projects entail hidden costs that necessitate longer implementation schedules. As further investments in the ERP continue, the firm becomes more and more locked-in to a vendor (Shapiro & Varian 1999), resulting in less agility and flexibility – a rather conspicuous situation with the advent of knowledge-driven economies of integrated and unpredictable markets (Johnston et al. 2008).

One solution to this dilemma of expensive P-ERP or standard off-the-shelf programmes is to use open source (OS) ERP systems. Licensing fees for the P-ERP systems amount approximately to 30% of total costs (Jacobson et al. 2007), and thus with lower licensing cost – totally free in case of community open source software – and relatively lower maintenance fees, they provide savings in terms of financial costs. The download figures for OS-ERPs in Sourceforge.net show a stable increase over the years, and though they are not perfect estimates of actual deployment, they show that there is an interest in the OS-ERP.

Though OS-ERP projects have preached the benefits above, the research done in the field is scant. The OS-ERPs have not been as diligently studied as their proprietary counterparts. An on going literature review has identified that one area that is understudied is the decision making that leads to the OS-ERP investment decision. IT investment decisions are complex processes that are characterised by their multi-stage and multi-actor nature (Xue et al. 2008, p.68). The investment decision has to account for a lot of factors, which is not necessarily easy to do so. While on the paper it might be easy to approximate an ERP team – a success factor identified in literature – the more intrinsic issues, for example issues related to change of culture in the organisation, are harder to make sense in the investment decisions.

One façade of the investment decisions are how the project is presented to the organisation. For the ERP project to flourish, and the investment decision to be made, the project has to garner legitimacy. For the project to be accepted, it has to overcome the existing – legitimate – modes of thinking. However, as Suddaby and Greenwood (2005) argue, how the legitimate accounts are discredited and replaced by new accounts – how the shift in the logic occurs – is understudied. As OS-ERP systems are trying to carve a place for themselves in a market dominated by P-ERP systems, they need to be able to create a legitimate account of their suitability. Following the linguistic turn in social sciences and information systems (IS) research, this paper aims to identify how such a legitimation takes place through the language used. A discourse analysis is conducted on an OS-ERP text using interpretative repertoires (IR) as the analytical lens. IR is one of the more action oriented discourse analysis strains that analyses the discourse to evaluate how the actors use the language to achieve particular actions. By using this analytical perspective, this paper aims to elaborate how IR are used to justify the OS-ERP, by showing how the OS-ERP was leveraged by various repertoires to the wider community of researchers and practitioners.

To achieve this, the paper begins with a theoretical grounding of the adoption of ERP system, followed by a section detailing IR. Methodology and data collection are presented next, and the analysis is run and the results are presented in the following section. The results and their implications are discussed next and the paper closes with the conclusions highlighted in the last section.

2 Theoretical Grounding of the work

As of late 2013, the most frequently downloaded OS-ERP system has more than 2 million downloads, however, Sourceforge.net does not provide the actual use of these systems. Openbravo, with more than 2 million downloads in Sourceforge.net, claims to have “3m+ downloads and 1,000s of organizations using Openbravo solutions every day” (Openbravo, 2014). Some accounts argue that there are substantial deployments (Župan & Budimir 2011; Zheng et al. 2008). However, when compared with the download figures up till 2009, amounting more than 1.4 million downloads, the 4000 customers noted by Zheng et al. (2008) shows that there is a gap between downloads and use. In this manner, this paper aims to analyse how the OS-ERP was leveraged to the wider community and conceptualises the evaluated text as a sales pitch to influence the would-be adopters.

One theoretical stream that aims at identifying if and how an innovation is used is the diffusions of innovations (DOI). This stream has over the years argued that for the “innovation” to be perceived as adoption worthy, it needs to have certain attributes: compatibility; complexity; trialability; observability and relative advantage (Rogers 1983). This set of attributes were detailed through the years (cf. Moore and Benbasat 1991; Agarwal and Prasad 1997) as well as criticized (cf. Suchman and Bishop 2000; Lyttinen and Damsgaard 2001).

The analysed material for this paper comes at a pre-decision stage, and as such it has the characteristics of the knowledge- and persuasion-stage (Rogers 1983, pp.164–172), in which the markets’ needs are created and the attitude towards the innovation is influenced. In such a stage then, the authors would highlight some attributes of their innovation, ERP5 to create the need and influence

the adoption by answering questions like "What are the innovation's consequences?" and "What will its advantages and disadvantages be in my situation?" (Rogers 1983, p.170).

Similar to DOI, resource based view (RBV) also has a stake in identifying if and how the innovation is used. RBV argues that the resources that the firm has at its disposal are the keys to its sustained success (Barney 1991; Connor 1991) and as such IT capabilities, and the hard to imitate resources that the firm would gain by using IT will play a core role for its success (Mata et al. 1995).

To put these attributes in a discourse setting then, one would expect to find some repertoires that are based around these core concepts, be it in the way they originated in DOI and RBV literature, or as the criticisms that are derived from the repertoires. Before analysing the text for these repertoires, the next section details IR.

3 On Interpretative Repertoires

IR constitute a strain of discursive psychology, attributed to the works of Nigel Edley, Jonathan Potter and Margaret Wetherell (Potter & Wetherell 1987; Wetherell & Potter 1988; Edley & Wetherell 1997; Edley & Wetherell 1995; Wetherell 1998) who drew upon the work of Gilbert and Mulkey (1984/2003) concerning the scientists' discourse. And as a strain of discursive psychology, have three core principles as to what discourse is (Wiggins & Potter 2008): (1) discourse is constructed and constructive: while the discourse is constructed by the people – assembling words, images – the people are at the same time constructed by the very same discourse; (2) discourse is action-oriented, be it to blame, justify, invite or to compliment, discourse is the primary medium to achieve these actions; (3) discourse is embedded in a context.

Wetherell and Potter (1988, 172) defined IR as “bounded language units”, that are “systematically related sets of terms, often with stylistic and grammatical coherence, and often organised around one or more metaphors” (Potter 1996), and as “culturally familiar and habitual line of argument comprised of recognizable themes, common places and tropes” (Wetherell 1998, p.400). They are “recurrently used systems of terms used for characterizing and evaluating actions, events and other phenomena” (Potter and Wetherell 1987, p. 149). Similarly, Fairhurst (2009, p. 1617, emphasis in original) see IR as “... tool bags of terminology, tropes, themes, habitual forms of argument, and so on that, in effect, contextualize by supplying leadership actors with a set of linguistic resources for use in *discourse*”.

By the flexibility provided of incorporating both the little “d” and big “D” discourse of Gee (1999), representing the language-in-use and the combination of language with other practices respectively, IR enable the users to draw from parallel, as well as paradoxical repertoires, and assume different roles in relation to the situation. The users engage in social action on micro level, managing their positions by drawing from macro level discourses to sustain their arguments. This flexibility of changing roles creates the freedom to change positions when faced with opposing arguments, either explicit or implicit, and enable users to perform different actions to maintain their position as well as influence others.

This action-oriented framing of the IR makes it a suitable approach to analyse how the OS-ERP is presented. The authors have taken the role of disseminating the knowledge with a stake to see the adoption of the proposed OS-ERP, and thus their paper is suitable to be seen as a medium that they open up a discussion and maintain their position – as a substitute to the existing ERP systems – as well as influencing the market by arguing that such an OS-ERP system is worth attention.

However, some drawbacks of using IR needs to be mentioned, as though they have seen wide use in other fields, their adoption in information systems has been sparse. As Talja (1999, p. 467), drawing from Foucault and Volosinov notes, IR can not be seen “bounded language units” as words are many accented and have different meanings depending on the starting points of the discourse. Another strain of argument suggests that IR reduces the richness of the language to a few repertoires (Mueller &

Whittle 2011, p.189) and thus the “in situ details of everyday life” (Gubrium & Holstein 2003, p.222) is lost.

IR research, as criticised, usually identifies a few repertoires – two repertoires, empiricist and contingent, in Gilbert and Mulkay (1984/2003) - and such a limited number of repertoires do not necessarily contain the details of real life. However one can argue that their *raison d’être* was not to provide such a detail from the beginning, and thus lift such shortcomings from the analytic work carried. With the use of language towards a specific social action, IR focus on not all actions that are (or intended to be) achieved. The work of Gilbert and Mulkay (1984/2003) does not cover all actions of scientists, or their work is intended for, but rather focus on accounting for error as their main focus, and construct their analysis on such premises. As such, the data excerpts given are the examples of data that highlight the repertoires identified for such an action. Furthermore, the excerpts also provide a way of transparency, as the readers are able to see how the repertoires are assigned to the text.

Related to this, IR usually provides a contextually situated analysis, and as such the background of the analysis is provided to the readers to familiarise them with the situation at hand. By doing so it is hoped that the reader would become competent enough of the language used in the context of the situation, and the meanings of the words evoked in the talk would be more easily identified. By becoming familiar with the situation, and perhaps even becoming multilingual, the readers would be able to follow the meanings of the words and see the accents used in the situation at hand.

4 On Data Collection and Methodology

Before the analysis of the text, the methods employed to analyse the material should be further detailed, as IR as elaborated above by itself do not provide a clear-cut method.

To stay within the page limits, and to provide a coherent piece of text, the detailed analysis is conducted by using only one source of text. The chosen material to be evaluated, an article by Smets-Solanes and de Carvalho (2003), was decided upon during a wider literature review on OS-ERP in general. The primary reason for choosing this text was that rather than *mentioning* or *using* OS-ERP as most others papers do, this paper has the OS-ERP as its central object. This is not so surprising, as this paper is the first instance when a keyword research is conducted in several scientific databases (Web of Knowledge, Scopus, Ebsco Academic Premier and Ebsco Business Premier) that is a peer-reviewed journal article, thus setting the stage for the discussion in the later papers. Furthermore, it is posed as a practitioner oriented design-science article that details how an OS-ERP project, ERP5, is designed and operationalized, with the authors actively involved in the development of the ERP5 project. This rather unique setting of scientific/practitioner orientation, and the active involvement of the writers in the OS-ERP - thus having a stake in the adoption of the OS-ERP – make it interesting to evaluate as a “sales pitch” to both the practitioners and scientists. Unlike the later on papers about OS-ERP implementations or literature reviews, the paper thus provides a full narrative on OS-ERP rather than just a few paragraphs to analyse, or the fragmented accounts found on the vendors’ websites.

As mentioned, the manuscript chosen for analysis is an article that came up as the first occurrence of a scholarly article that matched the keyword search using *open source ERP* in various scholarly databases. Though documents are mediated resources and thus lack some of the versatility of naturally occurring language use, as in an interview or observation, where the actors engage in multiple discursive practices for discursive solutions, they still represent a type of naturalistic data that is exempt from the influence of the researcher, and is thus suitable for discourse analysis.

Mainly, discourse analysis uses the core steps of coding and analysing the text, usually after reading the data before beginning these processes and continuing the readings during the coding and analysis, as an iterative process in which the researcher reaches a saturation point after numerous careful readings. However, due to the rich nature of data gathered, one needs more of a structure when looking for the patterns in the data, and even then the research mostly keeps its intuitive feeling due to having the discourse as its object.

One such way of limiting what to look for, is provided by the discursive constructionism of Potter and Hepburn (2008; cf. Potter 1996; Manuti et al. 2012; Symon 2008; Shepherd 2006; Mueller & Whittle 2011)), which comprises three classes: (1) category entitlement and interest management, in which the category entitlements of the social actors are analysed in terms of how they are constructed and opposed, (2) discursive accountability, in which the narrators' use of language to manage their accountability is analysed, and (3) practices of narration, in which the text is scoured for cues of changes in narration.

By using these three classes as the guides, after the initial reading the paper was manually cut into sentences compromising the individual paragraphs. The rationale of opting out for an automatic rendering was to see the individual sentences in relation to the prior and posterior sentences, and thus have a more in context reading of the sentences. The extracts of data, chosen to emphasize the interpretative practices employed by the authors of the text, are provided in the next section, as normal paragraphs for easier reading. The IR are identified and the functions of the repertoires are discussed through the extracts. By using a publicly available text and providing the extracts and the discussions of the repertoires related to them, the readers are given the chance of verifying the interpretations made in this research.

5 Exploring OS-ERP

Below, the IR are identified in the text¹. Though the focus of the study is to cover the aspects related to the OS-ERP, in some instances repertoires pertaining to other concepts, such as ERP in general, would intercede the identified repertoires. Though not necessarily a hindrance, the existence of such “extra” repertoires is nonetheless distracting for the reader. However it should be noted that OS-ERP by itself is very much leveraged upon to the P-ERPs, be it as equivalent or superior, and as such it is natural that such an overflow of repertoires to exist.

5.1 Anti-complexity repertoire

One reason to opt for an OS ERP draws from an IR labelled as anti-complexity. The need for a simple design of the software is indicated in various passages, both as a recommended feature of the software by itself, as well as a reminder of the lack of simplicity in the usual P-ERP systems in existence.

Extract 1: “When someone says enterprise resource planning (ERP), most IT professionals think of the expensive, complex, and difficult-to-implement commercial products that were the rage a few years ago.”(Smets-Solanes & de Carvalho 2003, p.38) (Hereafter S&D)

This is the opening sentence of the paper, which uses some rhetorical practices to set the tone for the rest of the following paper. The authors by speaking on behalf of the “most IT professionals” externalise their view that the current ERP systems are indeed expensive and complex, difficult-to-implement systems, and as such construct authenticity of their claim. By positioning the product, ERP5, towards SMEs, and signalling that these are potential problems that might be faced, which posed as it is would resonate with most IT professionals in such a SME context, gives them [the IT professionals] an invitation to opt out of such a cumbersome system.

Extract 2: “Like other ERP systems, ERP5 uses components as the basis for the system. All functions derive from or depend on only five basic concepts.”(S&D, p. 38)

Extract 3: “Synchronization implements all standard EDI features. Order synchronization is equivalent to EDI order transmission. Model synchronization is equivalent to EDI model transmission. Although theoretically equivalent to EDI, synchronization is much easier to implement than an EDI approach. PDA users are perfectly aware of this: Every day they synchronize their personal information (contact lists, agendas, tasks, and expenses) with a corporate server. Such a transfer of information is rare in EDI, although in theory not difficult to implement.”(S&D, p. 41)

¹ Please see appendix for examples of the repertoires from other sources.

Extract 2 and 3 delve deeper into the components and specific features that ERP5 has. In extract 2, ERP5 is set out as an equivalent to other systems, and thus is legitimate in employing a components based system. However, ERP5 diverges from the other by using “*only five basic components*”, and thus has a simpler system that has managed to converge what the other ERP systems have in more components to a simple architecture comprising only five components.

Extract 3 follows the same pattern of being at least equivalent if not better through simplicity set in extract 2. Synchronisation, while being theoretically equivalent is easier to implement, and through rare, use of such information sharing is actually superior to EDI, which other ERP systems seems to be using. The use of synchronisation by actual users of such a feature brings further authenticity to the claim of ERP being superior to the others, while at the same time maintaining the simplicity, as it is “much easier to implement than EDI”.

Extract 4: “Most commercial ERP software does not support variations, but we believe variations should be at the heart of any modern ERP system. Variations will be essential to creating product lines according to a customer’s needs without creating thousands of product identifiers. This mass-customization concept manages customer needs without losing the benefits of standardization.” (S&D, p. 40)

This extract continues with the afore examined issues related to simplicity. The extract begins by setting the tone of the state of the art in commercial ERP market and argues that they do not support variations, a concept that is deemed important enough to be the heart of any modern ERP system. The paper provides some examples of how such a concept can be useful, drawing on the concepts of mass customisation and standardization mentioned in the extract, two concepts that are used abundantly in the management and ERP literature. ERP5, by using the variations will provide such features much simpler than most of the existing commercial ERPs, without creating “thousands of product identifiers”, and at the same time would be able to manage the opposing forces of mass customisation and standardisation. Furthermore the authors make a claim of authenticity by evoking using “we believe” and as such make their convictions explicit.

5.2 New is good repertoire

Another repertoire that the OS ERP is constructed upon maintains its differences by comparing it with the old, already existing P-ERP systems. At the first glance it might even be presumed that the “new is good” repertoire actually encompasses the aspects related to the “simplicity” brought by the OS ERP. However, while simplicity is “new” for the ERP systems, it is more due to its effects of how things can be seen makes it eligible as a repertoire of its own. As would be shown, the instances of new and modern attributes of ERP5, while novel on their own are more of add-ons and changes to the existing ideas of what an ERP system should do, as opposed to the engraved idea of the need for complex solutions in ERP systems.

Extract 5: “Although used extensively in the apparel industry, the concept of variations is not well-known or used in other industries. Most commercial ERP software does not support variations, but we believe variations should be at the heart of any modern ERP system.” (S&D, p. 40)

Building on the earlier examined extract 4, this piece of argumentation highlights the new properties the ERP5 brings to the users. With inclusion of the variations, a concept new to the users outside the apparel industry, and arguing how it will ease the pressures of mass customisation, ERP5 creates a unique value proposition as a “modern system”.

Extract 6: “To support these features, on the technological side, ERP5 offers a new mapping technology for object or relational DBMS (database management system) integration, a new active-messaging technology for interaction modeling, and a new synchronization technology for electronic data interchange.” (S&D, p. 39)

As can be seen, extract 6 builds on the special attributes of ERP5, like the afore mentioned information synchronisation. However, aside from these specific features, this extract shows the underlying new technologies used to ensure the functioning of the special features. To cement the uniqueness of ERP5, the authors mention the new technologies that haven't been, yet, as widely as they would prefer, used in the existing ERP systems. All three new technologies mentioned are today, more or less, cornerstones of business life, and as such the authors' idea to incorporate these to their system has been proven a right decision by the passing time.

Extract 7: "We believe synchronization is the next generation of EDI (electronic data interchange)." (S&D, p. 41)

Extract 8: "ERP5 will create a new channel for e-commerce applications, which often require tight integration with ERP software." (S&D, p. 44)

These two small extracts similarly show how the ERP5 is positioned as a modern system, able to provide the "next generation" requirements, as well as opening "new channels for e-commerce".

5.3 OS-ERP as a tool for success

Another repertoire found in the text, though to a lesser extent, is constructed around the idea of the use of OS-ERP as a tool for success. In this repertoire, the OS-ERP is posed as a tool to be managed for success, hinging on both the attributes of the OS-ERP as a capability themselves, as well as the capabilities of the organisations to use this tool to enable success.

Extract 9: "Today, vendors of proprietary ERP systems are blocking the entry of new vendors into the market for e-commerce application software. If open-source initiatives like ERP5 succeed, they will prevent these companies from having monopolistic control of future e-commerce applications". (S&D, p. 44)

Here the stage is set by posing the argument of barriers to the efficient market, a tool used by the vendors to eliminate future competition. This hinted lock-in to the "monopolistic control" would be eliminated if an OS solution is used, thus the OS-ERP has the intrinsic capability of providing freedom of this control and securing the future. Through this appeal to both logic and emotions, the authors create the understanding of ERP5 as an ERP system that will secure future success, and act as a hero against the market determinism argued by the P-ERP vendors.

Extract 10: "[...] We call this synchronization a common business vision" (pp. 41)

Building on the earlier discussed extract 7, extract 10 provides how the synchronization, an attribute posed as a new value brought by ERP5 is actually a part of a business vision, built on the necessity to share the data. Thus the organisations with such needs of data interchange are invited to use ERP5, and join this "vision" by using this capable tool. In this fashion, ERP5 would enable them to realize the potential the organisation has by enabling them to exchange information.

Extract 11: "We designed ERP5 to function on multiple sites with low-quality Internet connectivity, so each site must be able to run by itself in the case of a network failure." (S&D, p. 40)

Extract 11 also provides an attribute that aims to attract adopters. By following the thread of SMEs not having fast connections and lacking the infrastructure – thus implying the fast connection needed for P-ERP system, and costs associated – the OS-ERP is posed as a tool that frees up organisational resources. The sites of the organisation can work as independent units in case of a network failure, thus the risk of loosing time and data are minimized, and the uncertainty associated is reduced. Furthermore, as with extract 10, the authors diverge from their use of passive, and continue to provide an example of empathy/sympathy in which they relate to the needs of SMEs.

Extract 12: "All ERP5 tools are open source, so are free and have openly available source code that a business can change to suit its processes." (S&D, p. 38)

Perhaps most related to the OS based capability proposition in this repertoire is extract 11, posing OS-ERP as a tool that will enable the organisation to change its code to meet the unique needs of the organisation. Thus, the OS-ERP will become a tool that will enable the actualization of the existing unique capabilities of the organisations, with providing them near full control of the process of such alignment.

6 Discussion of the results

Up to this point, the repertoires used by the authors to leverage their product have been illustrated. From the evaluated paper, three repertoires were identified that the authors have used in the process of setting up the market – for both practitioners as well as researchers – for their OS-ERP system, ERP5. These three repertoires revolved around the concepts of “new” and “modern”, “simple”, and “tool for success”.

The repertoires overall did not make overt references to other ERP system, be it proprietary or open source, however, implicitly all of them contained various forms of leveraging through other systems.

By using “we” in some instances the authors have included the readers to their arguments, emphasized the connective identity as users of a modern, easy to use ERP that will serve as a configurable tool for success. Several assumed qualities of market segment – SMEs – were targeted specifically, as was the case in extract 11, which inherently argued that the target organisations may lack high-speed internet connections and are prone to network failures. By positioning the system as simple and easy to use, the potential users were invited to opt for a system that contrasts with the traditional ideas of the complex systems that ERP systems are.

By further investigation these repertoires can be mapped out in the propositions provided by the DOI and RBV. The authors have directly drawn from the complexity problem identified in DOI, and created the anti-complexity repertoire. This repertoire was used to both highlight the simplicity and ease of use of the proposed ERP system, and to argue that the existing ERP systems lack such simplicity in their designs. By using the repertoire in such way, an easy connection was made with the argument that complexity would hinder the adoption, as proposed by DOI literature for the last few decades.

A similarly easy mapping occurs for the tool for success repertoire, in which the ERP5 is presented to pose as both a capability itself, as well as an enabler of the capabilities the firm already has. By being able to configure the system the organisations would be able to harness their existing capabilities, and ERP5, by having some attributes that others do not have – ability to work with slow internet connection – would become a capability itself in time. These ideas reflect the main arguments of the RBV literature that the organisation should invest in venues that will provide it with hard to imitate capabilities.

All three repertoires identified have similarities to relative advantage argument of DOI. By having an open source code, the proposed ERP system sidesteps the vendor lock-ins, and as such ERP5 frees the organisations from future dominance of ERP vendors. By putting the shadow of such loss of control in mind, the authors highlight how their ERP system is a tool that will enable success by sidestepping this future concern. Similarly, by arguing that their ERP system is easy to use, and that has features lacking in the existing systems, they use the anti-complexity and new is good repertoires to hint the relative advantage the system can bring to the adopters.

Similarly, compatibility issue raised in DOI is reflected upon in the repertoires. The ability to perform with low quality internet connection that makes the system a tool used for success also makes the system compatible with the organisations available resources. Similarly the system is presented as being compatible to the needs of the organisations, most of which are highlighted as the needs ERP5 would satisfy with its unique and new features.

In contrast to this use of repertoires that are to some extent parallel with the arguments found in literature, the positive attributes of trialability and observability are missing from the repertoires identified. One reason for such an omission can be that, as one of the first movers the system developers cannot make claims for observability to the extent that existing ERP vendors can. This might lead to omission of trialability of the system, when taken into consideration that idea of “software as a service” – with its opportunities of having a community free version and paid add-on services concepts – is also lacking in the paper.

Aside from the discussions of the results, however, one needs to further open the “Pandora’s box” in this case, and elaborate what further implications can be drawn. As mentioned earlier, IR constitute a critical stance of discursive psychology, and thus identifying repertoires that have become hegemonic (Gramsci 1971) also implies looking at which actors these repertoires serve.

Similar to the other examples in the literature around ERP systems, the analysis shows that the picture painted about OS-ERP is a positive one, that doesn’t delve into the negative aspects of ERP implementations. This gives a one sided view of the ERP implementations, furthering the technological determinism found in IS in general. The system is seen as a tool, without explicitly talking about the role of the users of the system will play, and what these roles entail for the employees. This resembles the magic bullet theory criticized by Markus and Benjamin (1997) in which IT changes the organisation magically, and the case studies of ERP implementations has shown that such a magical change is seldom encountered. In this way, the responsibilities of the organisations and the members of these organisations are occluded in the representations of the OS-ERP.

This situation is very similar to that seen in Shepherd (2006), where the ERP team’s argument that the system will enable the people to do their actual jobs is countered by the employees’ response that this only means that there will be cuts from the HR department. By not opening this Pandora’s box, the OS-ERP while criticizing P-ERP on creating future dependencies and lock-ins, furthers the technological determinism found in the IS field.

The results further showed that most of the issues that are included in the theories around technology adoption are touched upon in the repertoires. However, this does not seem to be reflected in the deployment figures presented in the cited sources. As the data doesn’t give an indication, further discussion of this discrepancy can only be taken as guess-work and thus as recommendation for future studies: one way to interpret this failure of adoption is the omitted issues in the sales pitch, such as possible security breaches and issues of accountability in such cases. While the issue of secure data is mentioned in the OS-ERP vendors’ websites and other reviewed papers, they do not provide a central point to construct a repertoire. In such a way, the guarantee that the adopter would like to have from the vendor is taken out of the discussion, which might lead to doubts about the OS-ERP system.

Another possible reason for the difference between download figures and cited use, might be the ability of the P-ERP systems to use their experience as a selling point in their sales pitch. In a recent visit to a P-ERP vendor, the official presentation was peppered with mentions of their more than 25 years of experience. This leverage on history is found in all major ERP vendors. However this tactic loses some of its charm for the OS-ERP vendors when this 25 plus years is contrasted with the seven years of experience of a leading OS-ERP system.

In this way, perhaps it is not that surprising that the OS-ERP adoptions are not as common as the P-ERP implementations. The use of similar repertoires (cf. tool for success repertoire and Shepherd’s (2006) ERP as a solution to organisational problems) for these different ERP systems makes the selection of one system over another a difficult process. By using such similar language to create a market for itself the OS-ERP is thus, perhaps, obscuring its unique value proposition. The fact that the adopters won’t be tied to a particular vendor, a unique value offered by OS-ERP systems, was used with other arguments that are also used by P-ERP vendors. A cursory glance at leading vendors show heavy use of words such as *simplify*; *automate*; *makes it easier*; *offers a flexible solution* to make

claims about their products' qualities, which as was seen resembles the arguments used for the OS-ERP.

Needless to say, the negotiations and workshops involved in the ERP selection may cover the areas that seem to be not covered in the sources reviewed, thus there is a chance that the unique value propositions of the system can be made during the face-to-face communication. Such a setting, as discussed previously would result in more naturally occurring data thus a more nuanced analysis of how the OS-ERP is created through talk. However, the sources reviewed for this analysis, coming at a stage of pre-decision stage should be able to entice the would-be adopters for these face-to-face negotiations to begin, and thus the OS-ERP vendors need to draw on repertoires that can be used to make the difference between then and P-ERP systems clearer. One example of this was analysed, where market determinism and the fear of lock-in was used to construct the P-ERP system, *the other*, and thus implicitly creating the OS-ERP, *the self*, as against these forces.

As IR is a somewhat novel approach in IS, some discussions of its use should also be highlighted. In the IS field, there have been criticism that the phenomena under study is taken as technologically deterministic and thus, new ways of investigating the phenomena should be adopted (Leonardi & Barley 2010; Strong & Volkoff 2010). The use of IR has shown – through how the OS-ERP is created by using parallel and contrasting repertoires – that the phenomena are indeed not deterministic, but highly flexible, thus as an analytical lens IR can be of value to the IS researcher to provide a nuanced understanding of the field. However, as was discussed, there are instances that the repertoires themselves also serve to sustain the deterministic understanding of technology. By making it visible to the reader that such a deterministic construction occurs, IR might provide some insight to overcome the problems in the field.

Through the writing process of this research, the paper was aired out to see if the interpretations made are plausible to others. Though asking for validation to other researchers might be seen as reproducing the social order – and thus maintaining power relations – in line with critical discourse analysis tradition, such a way of validation is still employed. While generally colleagues found the interpretation presented as plausible, one issue that was raised in different occasions is that the repertoires are not native to OS-ERP, but can be found in other IS related issues. While this might be taken as a critique against the originality of results, another way of interpreting this is to go back to the earlier claims that IR are not separate from wider discourses, and thus it actually is promising to see that these repertoires are used by others in other branches of IS.

Similarly, the paper was sent to several colleagues that work within the industry. When asked to give their ideas of the manuscript two practitioners that have experience with ERP implementation as the ERP customers, argued that these issues are very similar to what they faced when they worked during the ERP implementation in their respective organisations. One of them further argued that these “repertoires” are what they as managers also used while discussing the ERP implementation among themselves and that she recognised the “rhetorics”. While this claim that these repertoires are also “out there” is promising for the concerns regarding validity, it also raises some questions, as these two practitioners are experienced within proprietary ERP system implementations. This situation reflects how these repertoires are also found in other aspects related to IS, both in research and in practice, and also shows how very similar strategies are used by seemingly opposing ERP solutions.

7 Conclusions

The starting point of this study was to identify the repertoires used to justify the use of OS-ERP as an option against the P-ERP systems. The material chosen to highlight these repertoires was a paper that was posed for both practitioners and researchers, written by authors that were engaged in the development of the system.

The authors have used multiple rhetorical and discursive devices such as appeals to the adopters' emotions and logic by using the shadow of monopolistic control the ERP vendors have, and creating

authenticity by using terms like “we believe” to create accountability and maintain and create their and future adopters interest positions. These devices were used in parallel with each other to argue for the authors’ ideas if the system and why it should be adopted, showing the positive aspects of the ERP5, as well as alluding the problems embedded in the existing ERP systems. In their use of the language in such a way, the authors have drawn from three repertoires: anti-complexity, new is good, and ERP as a tool for success.

These repertoires are a mix of ideas represented in the DOI and RBV literature, poised to entice both the practitioners as well as researchers, and the repertoires have reflected the ideas presented in the literature in a parallel fashion. The arguments raised in the repertoires were used both to highlight the positive aspects of ERP5 – simple and easy to use – and negative aspects of the existing ERP system – complex and costly. These repertoires were used to highlight the unique value that the OS-ERP would bring to the adopters.

By looking at the discourse used in the paper to argue for such unique value, this study has some implications both for practitioners as well as researcher. The use of IR, and as such an action oriented discourse analysis method, and the identified repertoires show how the language can be used to “sell” an ERP system. The authors were able to draw from repertoires that contained most of the ideas identified in the literature that an innovation needs to have to be adopted, and as such touches on the issues that needs to be covered in a sales pitch. Similarly, by using IR in such a setting and conceptualising the ERP adoption through the lens of discourse analysis rather than the traditional methods enjoyed in IS research, provides a window to understanding how the language is used and how some repertoires achieve legitimacy in such a context for the researchers interested in the field.

In this study a paper by Smets-Solanes and de Carvalho (2003) was evaluated, and the use of only one source can be counted as a limitation. However, as discourse analysis, and IR in particular provides a contextualised analysis, the use of such data can be permissible, especially given the unique situation of the paper as argued before. Needless to say, however, use of another kind of material might result in another set of repertoires identified that would cover the same aspects of OS-ERP adoption. However, this issue does not negate the results obtained in this study, but provide a further call for research in to OS-ERP adoption through use of other material and methods. One venue in that direction would be to investigate how the adopters of the systems see the adoption process. Interviewing the adopters of OS-ERP, and employing IR –or another discourse analysis method – can enrich this strain of research by providing another angle to the issue. A similar project conducted with software developers and consultants would also provide a nuanced understanding of the issue tackled in this study. Needless to say, reflecting what was discussed at the end of the discussion section, a comparative analyses IR around OS-and P-ERP systems might be a promising undertaking for future work.

References

- Agarwal, R. & Prasad, J., 1997. The role of innovation characteristics and perceived voluntariness in the adoption of information technologies. *Decision Sciences*, 28(3), pp.557–582.
- Ayyagari, R., 2011. Hands-on ERP learning: Using OpenERP, an Alternative to SAP. *Journal of Information Systems Education*, 22(2), pp.123–132. Available at: <http://jise.org/Volume22/22-2/Contents-22-2.html>.
- Barney, J.B., 1991. Firms resources and sustained competitive advantage. *Journal of Management*, 17(1), pp.99–120.
- De Carvalho, R.A. & de Campos, R., 2006. A Development Process Proposal for the ERP5 System. In *2006 IEEE International Conference on Systems, Man and Cybernetics, Taipei, 8-11 Oct 2006*.

- IEEE, pp. 4703–4708. Available at: <http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=4274656>.
- Compiere, 2014. Compiere Open Source ERP. Available at: www.compiere.com [Accessed April 22, 2014].
- Connor, K.R., 1991. A Historical Comparison of Resource-Based Theory and Five Schools of Thought Within Industrial Organization Economics: Do We Have a New Theory of the Firm? *Journal of Management*, 17(1), pp.121–154.
- Edley, N. & Wetherell, M., 1997. Jockeying for position: The construction of masculine identities. *Discourse & society*, 8(2), pp.203–217.
- Edley, N. & Wetherell, M., 1995. *Men in perspective*, Hemel Hempstead: Prentice Hall/Harvester Wheatsheaf.
- Fairhurst, G.T., 2009. Considering context in discursive leadership research. *Human Relations*, 62(11), pp.1607–1633. Available at: <http://hum.sagepub.com/cgi/doi/10.1177/0018726709346379>.
- Gee, J.P., 1999. *An Introduction to Discourse Analysis: Theory and Method*, London: Routledge.
- Gilbert, G.N. & Mulkay, M., 2003. *Opening Pandora's Box: A sociological analysis of scientist's discourse*, Cambridge, UK: Press Syndicate of the University of Cambridge. Available at: http://www.surrey.ac.uk/sociology/people/opening_pandoras_box.htm.
- Gramsci, A., 1971. *Selections from the prison notebooks of Antonio Gramsci* Q. Hoare & G. N. Smith, eds., London: Lawrence & Wishart.
- Gubrium, J.F. & Holstein, J.A., 2003. Analyzing Interpretive Practice. In N. K. Denzin & Y. S. Lincoln, eds. *Strategies of Qualitative Inquiry*. Thousand Oaks, California: Sage Publications, pp. 214–249.
- Jacobson, S. et al., 2007. *The ERP Market Sizing Report, 2006-2011*, Boston, MA.
- Johansson, B. & Koroliov, V., 2012. Deployment Of Open Source Erps: What Knowledge Does It Require? In *Lecture Notes in Business Information Processing - 5th International Conference on Research and Practical Issues of Enterprise Information Systems, CONFENIS, Aalborg, 16-18 Oct 2011*. Boston: Springer, pp. 75–91. Available at: <http://www.scopus.com/inward/record.url?eid=2-s2.0-84859097349&partnerID=40&md5=0697d36bba6336e8e1a9555291d9c17f>.
- Johnston, M., Gilmore, A. & Carson, D., 2008. Dealing with environmental uncertainty: The value of scenario planning for small to medium-sized enterprises (SMEs). *European Journal of Marketing*, 42(11), pp.1170–1178. Available at: <http://www.emeraldinsight.com/10.1108/03090560810903628>.
- Jones, D.C., Kalmi, P. & Kauhanen, A., 2011. Firm and Employee Effects of an Enterprise Information System: Micro-econometric Evidence. *International Journal of Production Economics*, 130(2), pp.159–168. Available at: <http://linkinghub.elsevier.com/retrieve/pii/S0925527310004743>.

- Leonardi, P.M. & Barley, S.R., 2010. What's Under Construction Here? Social Action, Materiality, and Power in Constructivist Studies of Technology and Organizing. *The Academy of Management Annals*, 4(1), pp.1–51.
- Lyttinen, K.J. & Damsgaard, J., 2001. What's wrong with the Diffusion of Innovation Theory. In *Proceedings of Diffusing software product and process innovations, Banff, Canada, 7-10 April 2001*.
- Manuti, A., Traversa, R. & Mininni, G., 2012. The dynamics of sense making: a diatextual approach to the intersubjectivity of discourse. *Text & Talk - An Interdisciplinary Journal of Language, Discourse & Communication Studies*, 32(1), pp.39–61. Available at: <http://www.degruyter.com/view/j/text.2012.32.issue-1/text-2012-0003/text-2012-0003.xml>.
- Markus, M. & Benjamin, R., 1997. The magic bullet theory in IT- enabled transformation. *Sloan Management Review*, 38(2), pp.55–68. Available at: http://layoftheland.net/archive/web/mis-575/course_docs/topic_4/Markus.magicbullet.pdf.
- Mata, F.J., Fuerst, W.L. & Barney, J.B., 1995. Information Technology and Sustained Competitive Advantage: A Resource-Based Analysis. *MIS Quarterly*, 19(4), pp.487–505.
- Moore, G.C. & Benbasat, I., 1991. Development of an Instrument to Measure the Perceptions of Adopting an Information Technology Innovation. *Information Systems Research*, 2(3), pp.192–220.
- Mueller, F. & Whittle, A., 2011. Translating Management Ideas: A Discursive Devices Analysis. *Organization Studies*, 32(2), pp.187–210. Available at: <http://oss.sagepub.com/cgi/doi/10.1177/0170840610394308>.
- Openbravo, 2014. Openbravo, the preferred Commerce and ERP Platform. Available at: www.openbravo.com [Accessed April 23, 2014].
- Potter, J., 1996. *Representing Reality: Discourse, Rhetoric and Social Construction*, London: Sage Publications.
- Potter, J. & Hepburn, A., 2008. Discursive constructionism. In J. A. Holstein & J. F. Gubrium, eds. *Handbook of Constructionist Research*. New York: Guildford, pp. 275–293.
- Potter, J. & Wetherell, M., 1987. *Discourse and Social Psychology*, London: Sage Publications.
- Rogers, E.M., 1983. *Diffusion of Innovations* 3rd ed., New York: The Free Press.
- Serrano, N. & Sarriei, J.M., 2006. Open source software ERPs: a new alternative for an old need. *IEEE Software*, 23(3), pp.94–97. Available at: <http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=1628946>.
- Shapiro, C. & Varian, H.A., 1999. *Information Rules: A Strategic Guide to the Network Economy*, Boston, MA: Harvard Business School Press.

- Shehab, E.M. et al., 2004. Enterprise resource planning: An integrative review. *Business Process Management Journal*, 10(4), pp.359–386. Available at: <http://www.emeraldinsight.com/10.1108/14637150410548056>.
- Shepherd, C., 2006. Constructing enterprise resource planning: A thoroughgoing interpretivist perspective on technological change. *Journal of Occupational and Organizational Psychology*, 79(3), pp.357–376. Available at: <http://doi.wiley.com/10.1348/096317906X105742>.
- Smets-Solanes, J.-P. & de Carvalho, R.A., 2003. ERP5: a next-generation, open-source erp architecture. *IT Professional*, 5(4), pp.38–44. Available at: <http://www.scopus.com/inward/record.url?eid=2-s2.0-0042531950&partnerID=40&md5=522f3a1ba6e95355c649c0b23561a994>.
- Strong, D.M. & Volkoff, O., 2010. Understanding Organization-Enterprise System Fit: A Path to Theorizing the Information Technology Artifact. *MIS Quarterly*, 34(4), pp.731–756.
- Suchman, L. & Bishop, L., 2000. Problematizing “Innovation” as a Critical Project. *Technology Analysis and Strategic Management*, 12(3), pp.317–333.
- Suddaby, R. & Greenwood, R., 2005. Rhetorical Strategies of Legitimacy. *Administrative Science Quarterly*, 50(1), pp.35–67.
- Symon, G., 2008. Developing the Political Perspective on Technological Change Through Rhetorical Analysis. *Management Communication Quarterly*, 22(1), pp.74–98. Available at: <http://mcq.sagepub.com/cgi/doi/10.1177/0893318908318514>.
- Talja, S., 1999. Analyzing Qualitative Interview Data: The Discourse Analytic Method. *Library & Information Science Research*, 21(4), pp.459–477.
- Wetherell, M., 1998. Positioning and Interpretative Repertoires: Conversation Analysis and Post-Structuralism in Dialogue. *Discourse & Society*, 9(3), pp.387–412. Available at: <http://das.sagepub.com/cgi/doi/10.1177/0957926598009003005>.
- Wetherell, M. & Potter, J., 1988. Discourse analysis and the identification of interpretive repertoires. In C. Antaki, ed. *Analyzing Everyday Explanation: A Casebook of Methods*. London: Sage Publications, pp. 168–183.
- Wiggins, S. & Potter, J., 2008. Discursive Psychology. In C. Willig & W. Stainton-Rogers, eds. *The SAGE Handbook of Qualitative Research in Psychology*. London: Sage Publications, pp. 73–90. Available at: http://homepages.lboro.ac.uk/~ssjap/JP_Articles/Wiggins_Potter_-_Discursive_psychology_Willig_2008.pdf.
- Xue, Y., Liang, H. & Boulton, W.R., 2008. Information Technology Governance in Information Technology Investment Decision Processes: The Impact of Investment Characteristics, External Environment, and Internal Context. *MIS Quarterly*, 32(1), pp.67–96. Available at: <http://www.igi-global.com/chapter/information-technology-governance/6054>
- Zheng, L. et al., 2008. Development and Implementation of ERP/CRM System Based on Open Source Software to Small and Medium-Sized Enterprise in China. In *2008 International Conference on*

Intelligent Computation Technology and Automation (ICICTA). New York: IEEE, pp. 725–729. Available at: <http://ieeexplore.ieee.org/lpdocs/epic03/wrapper.htm?arnumber=4659856>

Župan, M. & Budimir, V., 2011. Software technology behind computer accounting. *World Academy of Science, Engineering and Technology*, 77, pp.907–911. Available at: <http://www.scopus.com/inward/record.url?eid=2-s2.0-79959607647&partnerID=40&md5=02fd22d6c81688a1b2cf40a7b9bda6f3>.

Appendix

In the table below, some further examples that are taken from other reviewed material is presented.

Several examples from the scientific papers reviewed for the literature review is presented in the table for their respective repertoires. As the examples show, the repertoires are indeed identified once again, showing that these are recurring not only through the Smets-Solanes and de Carvalho (2003) paper, but also in other research.

Furthermore, to provide another angle – and perhaps more directly linked to the sales pitch conceptualisation, two leading OS-ERP vendors’, Openbravo and Compiere, websites are scrutinised to compare the vendors’ repertoires with the repertoires identifies in Smets-Solanes and de Carvalho (2003) paper. As can be seen from the examples, the vendors are using the same repertoires. Needless to say, what is considered modern has changed, as the “cloud computing” is considered modern in the updated sources analysed. As mentioned before, the narratives used in these websites and the literature are rather fragmented accounts rather than the full narrative found in the main text analysed.

<p>Anti-Complexity</p>	<p>The Openbravo Platform is a flexible an easily extendible mobile and modular development platform that helps companies to adapt for competitiveness while keeping full control thanks for being open source (Openbravo 2014)</p> <p>Compiere's revolutionary design enables applications to be easily customized and extended "without programming" - a first in the ERP industry. Applications are defined as objects in an Active Data Dictionary. Changes are easily made using a modern "drag and drop" Visual Dictionary Editor. Your IT staff will easily embrace the techniques required to extend Compiere. (Compiere 2014)</p> <p>Insight in the Postgresql database of Openbravo ERP system reveals 476 tables. Complexity of ERP systems for large companies is even bigger. SAP ERP database count 14.000 tables and 650 fields for material items (Župan & Budimir 2011)</p> <p>Further, the user interface for OpenERP is not complex – so the students can actually focus on learning the advantages of integrated systems rather than be overwhelmed by</p>
------------------------	--

	<p>complex integrated solutions (Ayyagari 2011)</p>
<p>New is good</p>	<p>A state-of-the-art Commerce solution for agile retailers and a broad horizontal ERP solution for any industry, both built on top of a flexible and easily extendible web, mobile and cloud-ready development platform, ready to power companies' ideas for building smart enterprise solutions.(Openbravo 2014)</p> <p>The most modern ERP solution. ... Compiere Enterprise is a modern, highly adaptable, enterprise-class business solution. (Compiere 2014)</p> <p>Both software products offered solution for cloud, Linux and Windows platforms, however PostBooks/xTuple offered also for Apple/MAC OS users. (Johansson & Koroliov 2012)</p>
<p>OS-ERP as tool for success</p>	<p>Be Differentiated: Adapt the system your way for competitiveness. (Openbravo 2014)</p> <p>Decreased reliance on a single supplier: Businesses that acquire a proprietary ERP are highly dependent on the product builders and distributors—that is, the source code's owners. If one, or even both, of these agents disappears, upgrading and maintaining the ERP can pose significant problems. (Serrano & Sarriei 2006)</p> <p>If for every ERP the fact that integration among processes can by itself become a source of competitive advantage [3], it may be extrapolated to the possibility of changing source code to drive an even better advantage.(de Carvalho & de Campos 2006)</p>