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Abstract

In this paper we propose a radical departure from the dominant conceptions in IS evaluation literature by adopting Actor-network Theory (ANT) to provide a better understanding of the development and evaluation of IS proposals in practice and examine the ways in which the evaluation process shapes and ensures the selection of the best IS projects. By drawing on a field study of the IS evaluation processes in a company with a history of IS successes, we reveal the relational nature of IS project proposals and the ways they are constitutively entangled with business processes and practices. Our ANT account demonstrates a) that the view of pre-investment IS evaluation in the literature is very narrow, b) that the practice of IS evaluation produces the 'object' it evaluates, c) that this object, that is the IS project proposal document, is a focal actor (an inscription device) produced by relations in the actor-network emerging around it, and d) that reconfiguration of these relations involving the translation of actors' expertise, experiences and interests into the IS proposal documents are critical for the evaluation of IS project proposals and their chances of success.

Keywords

IS pre-investment evaluation, IS project proposal evaluation methodologies, IS project evaluation process, Actor-Network Theory

INTRODUCTION - IS PROJECT PRE-INVESTMENT EVALUATION RESEARCH

Research on Information System (IS) projects pre-investment evaluation is principally concerned with the assessment of their future business implications, in particular prediction and calculation of costs and benefits. The IS evaluation literature has traditionally taken quite a narrow view of IS evaluation by focussing on the development of methodologies that aid the evaluation of IS or Information Technologies (IT). Numerous IS project evaluation methodologies have been proposed and tested for this purpose (e.g. Cost-Benefit Analysis, Discounted Cash Flow Analysis, Net Present Value, Payback Period) (Murphy and Simon 2001, Al-Yaseen, et al. 2004, Williams and Williams 2004). Despite increasing sophistication of these predominantly financial evaluation methodologies, IS project evaluations and investment decisions in practice remain problematic and highly risky. The high failure rate of IS projects – as high as 50-70% according to different sources (Standish Group International 2001, Sauer and Cuthbertson 2003, Luna-Reyes et al. 2005 – indicates the severity of the problem.

Early debates about the value of IS for business were sparked by a controversial view by Solow (1987) who argued that there was insufficient evidence to link investments in IT to gains in productivity. He said – as quoted by Brynjolfsson (1993) – that "We see computers everywhere except in the productivity statistics" (p. 67). Coined the 'productivity paradox', this has no doubt motivated an enormous amount of interest and research in the field. The result has been the introduction of a plethora of evaluation methodologies in an attempt to measure the broader value IT generates for the firm, in particular its productivity. These evaluation methodologies and the studies of their applications focussed predominately on assessing the inherent value of IT artefacts for business. They also made implicit assumptions that the IT artefact is independent from its business and organisational context.

This has been criticized by Hirschheim and Smithson (1988) who proposed an interpretive perspective to IS evaluation that is more attentive to IS practice. They criticised much of the literature for treating individuals as uniform users in a deterministic way while ignoring the role human actors play in the evaluation process. Perhaps that is because studies focused more on factors that influence evaluation rather than the evaluation process itself, which would have required a more interpretive approach – one that embraces human and social contexts.

In his review of the evaluation methodologies Powell (1992) concludes that while IS evaluation methodologies are important more work needs to focus on the way social and organisational aspects are addressed in these

methodologies. Several other researchers have also argued for the need to incorporate social and business context of IS evaluation. Jayaruriya (1997) argues that evaluation that takes a more contextual approach provides a richer picture of IS, its impact on the organisation and outputs. A number of studies have focussed on particular social, political and organisational dimensions of IS evaluation, for example: continuous stakeholder participative evaluation (Remenyi and Sherwood-Smith 1999), involvement of stakeholder groups in evaluation (Serafeimidis and Smithson 2000), the politics of IS department involvement in evaluation (Jones and Hughes 2001), use of different criteria by different stakeholders to evaluate IS (Adelakun and Jennex 2002), and the political dimension of evaluation from multiple heterogeneous stakeholder groups (Winklhofer 2002). Berghout et al. (2005) argued that eliminating politics in IS evaluation through supposedly objective evaluation methodologies is problematic because the evaluation process is not a strict rational process but rather a political process.

Heeding the call for more research in the broader context within which IS evaluations take place, a number of studies have recently emerged taking a socio-technical view. One of the first studies adopting this view was that of Wilson and Howcroft (2000) who examined political and social aspects of evaluation processes in organisations by using a social shaping approach. They found that evaluation is de facto a decision making process, and that despite being described as 'stakeholders', users did not have equal stake, if any, in the evaluation of the system. Benefits and drawbacks are also constructed through the evaluation process. As the interests of stakeholders are different the evaluation is necessarily a political process. With respect to objectivist view of IS evaluation they state, 'no matter what claims to so-called objective methods are made, the evaluation process is skewed by those with the power to legitimize views of the system' (pp. 101-2).

The dominant trends in the IS evaluation literature – focusing on either IT artefacts, or on social and organisational implications or more recently attempting to incorporate both the technological and organisational aspects of IS evaluation – have a common thread; they assume the separate existence of technology and organisation even when considering both the technological and social/organisational aspects. This has been recognized by Introna and Whittaker's (2002) who argued that 'the path to better IS evaluation in organizations is to get beyond the dualisms of subject/object, mind/body, and cognition/action that limit our analysis, understanding, and practice of evaluation in the flow of organizational life' (p.155). In an attempt to overcome the issues of separate existence of the IT and the organisation Nijland (2004) adopted ANT to investigate the selection process and deployment of IT evaluation methodologies in organisations. By viewing IT evaluation methodologies as actors the deployment of these methodologies were seeing as a dynamic process which is emergent and not necessarily prescriptive.

In this paper we take this challenge further. We aim to provide a more grounded understanding of the development and evaluation of IS project proposals in practice by studying the IS proposals and their business and organisational context in a unified way without separating them artificially or privileging any. This involves a key conceptual shift toward understanding the socio-technical nature of both the IS project proposals and business/organizational reality seen as intertwined and mutually constituting. Such a shift implies a change in our analytic gaze, including the sensitivity to the 'constitutive entanglement' of the material (technological) and the social (organizational) in practice (Barad 2003, Orlikowski 2007). To do this we adopt an ANT approach "to socio-technical analysis that treats entities and materialities as enacted and relational effects, and explores the configuration and reconfiguration of those relations" (Law, 2004, p. 157). The key difference in adopting ANT to study IS project evaluation in practice is the view of organizational realities and their representations and mediations via IS as relational and continuously enacted and produced.

To achieve our aim we examine the practices of IS evaluation in a case company that has extensive experience in assessing, developing and deploying IS, and a track record of successful IS projects ($3 billion worth of successfully delivered IS projects in the past few years). It also has well established processes for developing and evaluating IS proposals, including the use of a range of evaluation methodologies. With its unusually high success rates of IS projects the company can be seen as an exemplary case of IS project evaluation processes. As such it provides a distinct research opportunity to examine the nature and emergence of IS project proposals and their evaluation in practice. Throughout the empirical study, lasting 16 months we encountered and followed many actors, such as business managers, IS managers, project managers; a plethora of documents including an IS evaluation methodology, IS project ideas, project proposals, IS business case, etc., and their relations. We examined their relations and how IS project proposals and business realities are enacted and performed in these relations.

Before we present this analysis we first briefly introduce actor-network theory (ANT) and the way we adopted it as both a theoretical lens and a methodology in our study. Next we introduce the case study and discuss our research design. We then provide an ANT account of IS project evaluation practices in the case company, from which we draw conclusions and implications for research and practice.

ADOPTING ACTOR-NETWORK THEORY

ANT has been seen as having a natural affinity with the IS discipline as it is grounded in an ontology of relationality which assumes "constitutive intertwining and reciprocal inter-definition of human and material agency" (Pickering, 1995, p. 26). It enables analysis of the conditions, constraints and modification of agency within networks that intertwine the humans, culture, language, artefacts and technology (and many other things). While ANT overcomes the separation between the social and the technological it also postulates a symmetrical treatment of human and non-human actors, who are as heterogeneous actants mutually interconnected to form actor-networks (Callon 1986, Latour 1986, 2005, Walsham and Sahay 1999, Law 1999, 2004).

The symmetrical treatment of human actors and technology in ANT has been questioned in the literature (Collins and Yearley, 1992; Schatzki, 2002) for attributing intentionality to technological artefacts. On the other hand studies that adopt ANT, as Orlikowski and Scott (2008) observe, often privilege one form of agency over the other, which was seen as defeating ANT's major principle. While there is no a singular answer to these criticisms, we do not assume that the symmetrical treatment of human actors and technology means that they have 'equal agency' or that they 'constitute each other in *the same way*' (Suchman, 2007, p. 268) as implied by the critics. Treating humans and non-humans (technology) symmetrically should not be interpreted literally. To treat them equally means to see them as actants without precluding their roles, agency, type of actions and their importance as they get engaged in networks of relations. It means giving them a chance to act in a situation without our (researchers') intervention and pre-determination of their agency. While we see human actors and technologies entangled in emerging relations, enacting and producing each other, we do not assume that they enact and produce each other in the same way. The whole point is to abandon presumptions about how human actors enact and produce technology or how technology enacts and produces human actors (e.g. users).

Furthermore, ANT presents challenges for researchers aiming to investigate emergence of heterogeneous actor-networks. How to adopt ANT to conduct empirical studies remains open to researchers' imagination and is not prescribed by ANT's proponents and followers. For instance in their particular kinds of ethnographic studies – Latour and Woolgar's investigation of a "laboratory life" (1979) and later on a failed technology project called Aramis (Latour, 1986), Law's aircraft stories (2002) and Mol's treatment of atherosclerosis in a hospital (2002) – they followed their objects and subjects, recorded events and collected other material evidence in many different ways. The major feature in their work is a detailed description of a story, sometimes even with fictional elements, as a basis for examining and theorizing novel and often complex concepts and questions. Latour himself describes ANT as a "very crude method to learn from actors without imposing on them an a priori definition of their world building capacity" (1999, p. 20). We learn from him and other ANTs to 'follow the actors', let them tell their own stories, use their own vocabularies and unfold their own meanings, while tracing the emergence of relations in heterogeneous actor-networks, as we explain next.

RESEARCH METHODOLOGY

To provide a more grounded understanding of the development and evaluation of IS project proposals in practice we first aim to understand the socio-technical nature of IS project proposals and the way they are imagined and performed through relations in business practices. We also aim to follow socio-technical IS project/business relations and find out how they are configured and reconfigured in practices. Finally we aim to explain how do these (re)configurations produce evaluations – so that some projects succeed and others fail.

To achieve these aims we focused initially on the human actors and what they do and how they go about proposing ideas for new IS projects and how the ideas grow into official IS proposals (documents). It turned, almost intuitively, into a 'journey' of following the actors, not only humans but also objects, documents and other devices employed during projects' evaluations. By recognising mobilisation of actors and the ways they used inscription devices (such as initial PowerPoint presentations of an idea, the business case, and other documents with signatures) we began to appreciate the materiality and relationality of the emerging IS project documents and the production of their evaluation.

We conducted our study in a large multi-national financial services company in Australasia – we shall call 'ALFA Bank' – with a history spanning approximately 150 years and with an investment portfolio in excess of $1 trillion dollars. One of its divisions, ALFA Invest, was the prime focus of the study. This organisation was selected because firstly, it is known to have a well established practice of IS project proposal evaluations; secondly, it has a track record of successful IS deployment and implementation; and thirdly, the company was quite receptive to our invitation to study these practices in depth.

Our study focused on pre-investment IS project evaluation processes in ALFA Invest. However, to the degree to which these processes included actors and actions of the parent company ALFA Bank, our data collection included them as well. Data collection includes a) interviews with 36 senior executives and managers of ALFA Invest division as well as some from ALFA Bank over a 16 month period from July 2006 to October 2007

(listed in Table 1), and b) company documents in excess of 1,500 pages related to IS project evaluation processes including examples of 25 recently approved IS project proposals.

Table 1. Interviews conducted in ALFA Invest and ALFA Bank

Roles		
IS Management *(13 people)*	Business Management *(8 people)*	Projects and Project Management *(15 people)*
Head of IS Group Head of Business Demand (two people) Head of IS Architecture Head of Application Development Management Head of IS Development Head of IS Business Support IS/Business Relationship Partners (six people)	CEO and Chairman of ALFA Group CEO of ALFA Bank Head of Strategy Chief Operating Officer General Manager – Business Unit Head of Financial Planning Head of Central Business Operations, Head of Business Development	Senior Project Analyst (five people) Senior Project Manager (four people) Project Director (two) Head of Project Methodologies Head of Projects Head of Portfolio Management Head of Regional Projects Board

Our investigation started with an interview with a Senior Project Analyst who explained how projects are viewed by people in the company, as well as how they are evaluated within the broader business context. From that point the inquiry emerged into several directions following the Senior Project Analyst's suggestions including the Head of the Regional Projects Board, and other Senior Business and IS Analysts. We started with semi-structured interviews guided by an interview schedule but soon departed from it and adopted unstructured interviews that proved more suitable to addressing emerging issues. The length of each interview on average was approximately one hour, but in some cases interviews spanned two hours over two separate sessions. Through these interviews we encountered non-human actors, IS project documents, evaluation methodology and strategy etc.

The analysis of empirical data started early on as we encountered new actors (humans and non-humans) and cannot be clearly separated from data collection. Namely, following the actors and their relations with objects and other actors prompted the chain of interviews and collection of documents. The analysis of the interviews and documents in turn led to seeking explanation of activities, events and outcomes by interviewing new actors. These interviews revealed how different business realities and interests are negotiated and inscribed in the production of IS project proposals. After data collection the analysis became more refined focusing on stages in the production of IS project proposals, the roles of specific actors or actants and the ways they enrolled and acted upon the production of the proposals while creating actor-networks. This was the basis of coding the interviews and documents using Nvivo. The coded texts were then extracted in a systematized form, assisting our writing the story of IS projects evaluation processes.

We are focusing here on the pre-investment assessment of IS projects in the ALFA Invest company that they call the 'demand' side of projects. The actual delivery of projects is referred to as being the 'supply' side. The demand side of projects in ALFA Invest is broken down into two phases - I Evaluation and II Assessment. The Phase I Evaluation consists of the emergence of the idea for an IS project, that becomes an IS Concept and is then developed into a Business Case. In the Phase II Assessment the IS Business Case is formally debated and evaluated together with other project proposals by the Regional Investment Committee. After a project is approved, funding is allocated and a Project Manager (PM) assigned. This Committee continually monitors the progress of the projects and releases further funds in stages. In our next section we provide an ANT account of this Phase I Evaluation in ALFA Invest.

PRODUCING *IS* PROJECTS EVALUATION WHILE PRODUCING BUSINESS REALITIES

The Nature of IS Project Proposals

In order to understand the nature of IS project proposals and the way they are imagined and performed through relations in business practices we start with the very idea for an IS project. An idea for an IS project typically includes an innovation of products or services or business improvement such as increasing productivity, better service delivery, more effective communication with customers, and the like. The IS project initiator or Project Champion presents the idea in a form of a PowerPoint presentation or a short document to communicate it to others (see Figure 1). As the Head of the Central Business Operations explains, 'you have to sell [it]…to someone else'. Selling the idea to other people and talking to stakeholders focuses on issues related to particular

customers, business processes and their outcomes. These engagements and relations enable fermentation of the idea and garnering support from relevant people.
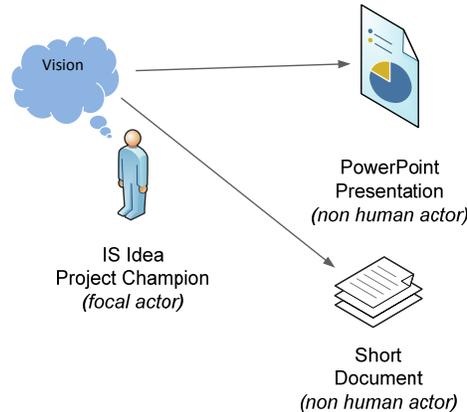

Figure 1: The IS Project Champion proposes a short document describing the IS idea

The idea at this moment is vague leaving enough space for other actors to read into it their view of problems, demonstrate their expertise and inscribe their interests. As it attracts other actors the idea document becomes a focal actor emerging through relations with human actors. In the words of the Head of Central Business Operations 'you garner support early and people think that guy is on to something'. An important actor, the IS/Business Relationship Partner typically engages first, as a mediating actor (see Figure 2). The Partner instigates the relations between the Champion, the idea document and business and IS stakeholders. The IS idea document thus becomes an inscription device that transforms into different forms (versions of the document) as a consequence of the relations emerging between the document and the other actors. In such a way a core actor-network emerges through relations with and around the IS idea document. We call it a *core actor-network* to denote focal actors, relations and activities of IS proposals that are in the centre of attention at a particular time. By identifying the core network we make a distinction vis-à-vis the periphery from which other actors may act on distance or may temporarily leave the core. In Figure 2 for instance we see ALFA Group Management, a macro actor, that acts on distance and does not fully engage in mutually constituting relations.

The IS idea document is developed further by adding specific documents related to risk assessment, strategic relevance, the design of a future business, IT architecture and a crude estimation of funding. The form and content of these additional documents are determined by the methodology. We see here how the methodology acts on distance, that is, from the periphery. It can be seen as acting on behalf of the ALFA Group Management. It prescribes inscription rules and processes on behalf of Management and ensures that all relevant stakeholders get involved so that their expertise and experience are adequately engaged in creating the vision of a new business and imagining the future IS. It also ensures that relevant, potentially conflicting, interests related to the proposed IS project, are considered and negotiated.

This initial step of proposing and strengthening an IS project idea involves enrolment and mobilization of actors – those perceived to be relevant and building initial relations around the idea as a core actor in an actor-network. In the words of the Head of Business Development, 'The influencing is the key part that…gets done in phase 1'. It is the idea document that enables people to 'come together', exchange and confront their views of business processes reality and envisage changes of this reality. By coming together and confronting their visions they also exercise their power as well as translate their interests and inscribe them in new versions of document.

We see here how the IS idea document emerges through enacted relations between the human actors and the document so that it captures the imagined future of both business and IS realities. The IS document thus arises as a relational effect that depends on configurations of the relations between the actors – in this case relevant stakeholders (Law, 2002). The IS project proposal document is not just a document. It is a relational entity that records traces of relations building among the human actors, methodology and business strategy but also and more importantly establishes links with IS and business vision and imagination of people involved. The documents describing an IS project proposal typically require signatures of responsible managers. For instance, the risk management plan for an IS project proposal should be signed by the Risk Partner and the finance case signed by the General Manager (GM) Finance. The signatures are guarantors that responsible managers' vision is engaged and that they buy-in the whole idea of the IS project proposal.
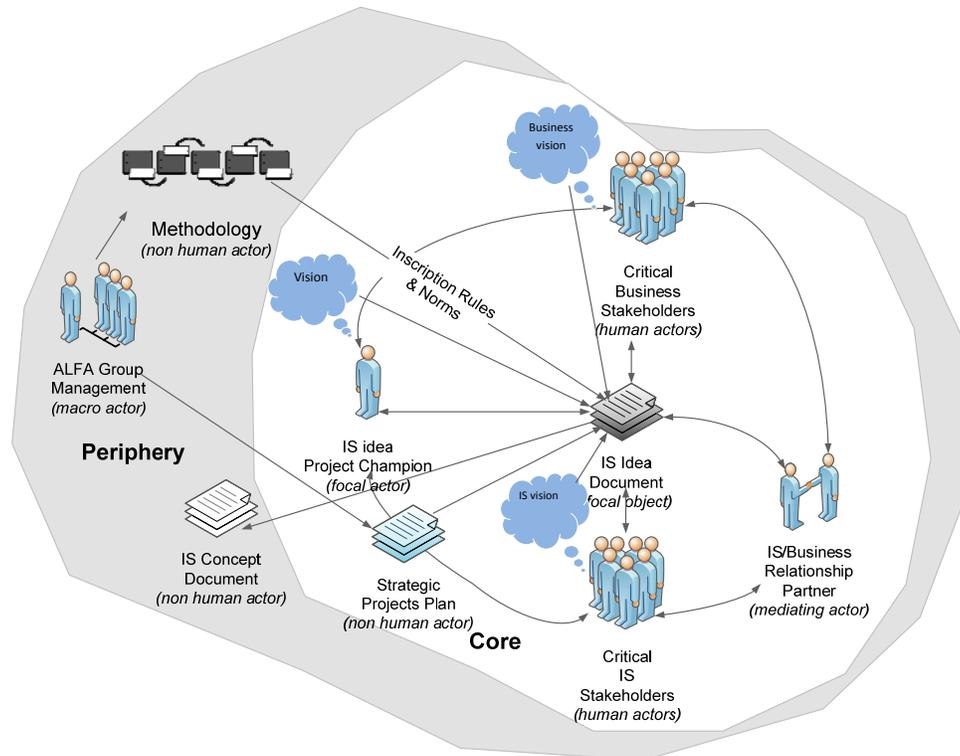
Figure 2: The actor-network (the core and the periphery) is emerging around
the IS Idea Document as a focal actor

Configuring and Reconfiguring IS Project/Business Relations in Practices

A particular organizing form in ALFA Invest through which an idea for an IS project 'garners' enough support from relevant people is 'weekly meetings' also called the 'business architecture meetings'. At these meetings the 'business engagement guys' and 'technology guys' (while gendered such an expression is not seen as excluding female participants) talk together. Having different expertise and roles, often coming from different sections of ALFA Invest, they discuss, question and clarify ideas and drill down requirements to the next level of detail. In this process their different views and visions are questioned and confronted. If their visions for the IS project proposal (IS reality) and associated changes of business processes (business reality) converge enough and if they achieve an acceptable level of agreement they produce a preliminary IS Business Case. In this process relations in the actor network around the IS Idea Document (presented in Figure 2) are reconfigured, thereby producing the IS Business Case as a new entity. Figure 3 shows a reconfigured actor-network with an IS Business Case Document at the core. This new Document emerges as a sociotechnical, relational entity constitutively entangled with Business Sponsor, Finance Partner, GM Finance and Risk Partner in the actor-network. Here again we see that the meaning of the IS Business Case Document is not residing in the documents itself, nor is it kept in the heads of people involved. The meaning of the Document is in relations through which it is entangled with other actors in the network.

As a focal actor, the IS Business Case Document (consisting of text, figures, graphs, etc.) attracts and assists enrolments of other actors into the network so that 'all of a sudden it [the proposal] starts to grow some legs' (Head of Business Development). As they further develop and test hypothesis about the future business and IS realities actors re-negotiate and re-create these realities. In other words they develop the IS business case further by strengthening relations and by doing so buy in and commit themselves to the constructed realities enacted by the IS proposal document. The more they commit themselves to the re-creation and (re)production of the IS Document the more they strengthen the actor-network that brings into being the imagined business and IS realities. The document thus reflects making, negotiating and remaking of the imagined realities, hypotheses testing and arguments building. It is important to observe here that these realities do not exist outside of the actor-network. The forming of the actor-network first around an IS Idea and then emerging around the IS Business Case document (presented in Figures 1, 2, and 3) describe how IS project proposals are produced and at the same time evaluated in relations. The enrolment of key actors and strengthening of relations in the actor-network around the proposed IS Business Case Document describes how 'people are taken on the journey'. This

journey is the key to our understanding the evaluation process and the emergence and transformation of the IS project document as the focal actor around which the actor-network creates and grows.
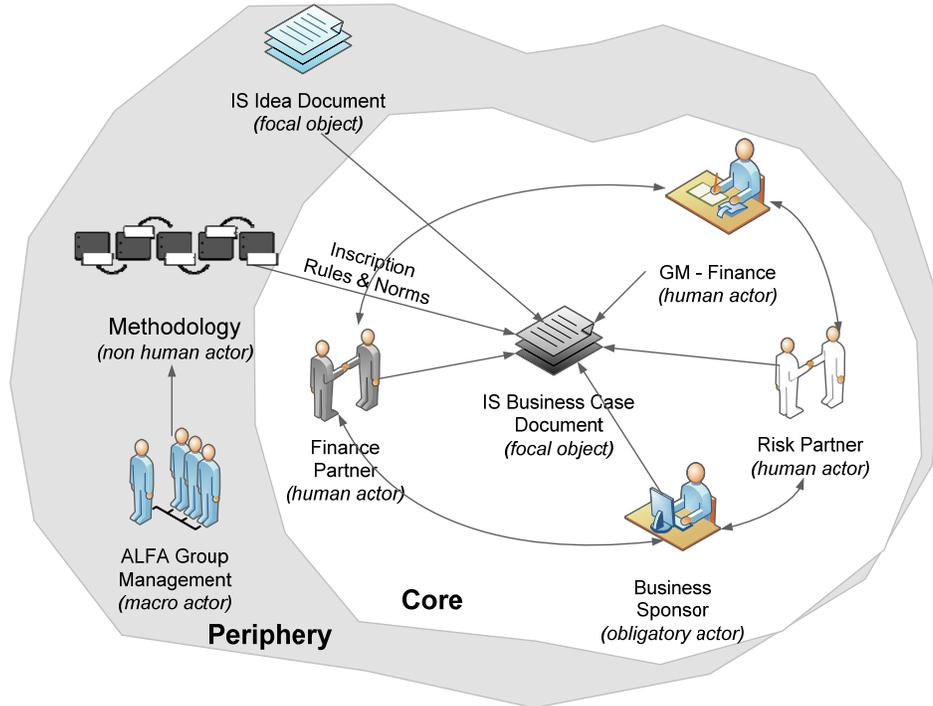

Figure 3 The IS Idea Document transforms into the IS Business Case through reconfiguration of relations in the actor network

How Reconfigurations of Relations in Actor-Networks Produce Evaluations

Typically the IS proposal document, as an inscription device, first presents contested realities – different actors tend to view multiple, diffuse and non-coherent realities – but the discussions and hypothesis testing clarify differences and reduce ambiguities so that the IS proposal can transform into a sufficiently coherent reality. In other words, the negotiated business reality gets eventually inscribed in the document. It is not the result of 'objectively' and meticulously mapping the business needs into various models (diagrams), as many methodologies assume possible and prescribe, but rather the consequence of relations emerging and strengthening in the actor-network. The reality, as Law persuasively argued, is produced together with inscription devices. "Without inscription devices, and the inscriptions and statements that these produce, there are no realities" (Law 2004, p. 31).

However, network building and reconfigurations of relations, negotiation of inscriptions and realities do not necessarily converge. In ALFA Invest they talk of such cases. For example Project Director told us a story:

> [W]e had a classic case of a project, a number of years back, where the guy [who was a consultant from a leading consulting firm] followed the methodology to the letter, pissed off every stakeholder in town, and … when the review was done, he said 'well what's the matter? I have ticked every single box! I have followed the methodology to the letter'… He used the scientific approach, he was a great left brain thinker, he had used the methodology to the letter. But he hadn't engaged his business, he hadn't engaged technology [department], he hadn't engaged a whole heap of people and he didn't get it.

This 'guy' couldn't understand why his project proposal failed given that he followed the evaluation methodology to the letter. When the Project Director asked him 'have you taken your guys on the journey?' he didn't even understand what that meant. 'Taking your guys on the journey' encapsulates what it means for an IS project proposal to be successful. It also tells a lot about the evaluation practices and the way they shape proposals that have high chances to be selected and ultimately successful.

From this case and the emergence of the evaluation process (illustrated in Figures 1, 2, and 3) we can see that the IS project proposals do not present fixed and given realities, but instead gradually create and enact new realities. In early stages they tend to be vague, abstract and potentially highly questionable. But once they have become the business case the realities get more stabilized. As Mol puts it, realities are "framed as parts of events that

occur and plays that are staged. If an object [in our case the IS project proposal] is real this is because it is part of a practice. It is a reality enacted." (2002, p. 44). As part of the evaluation process IS project proposals gradually become reality enacted.

During an IS project evaluation journey the same project is viewed in different ways by the risk management partners, the IS architect, the IS infrastructure expert and so on. They each see a particular side and business reality of the proposed system. While different, each side is meaningful from a particular business unit or locality vantage point. Together they often make sense, and hang together. Using Mol's concept of *fractal objects* (2002, p. 55) we can see how the enactment of an IS project proposal as it emerges through the reconfiguration of relations in the actor-network is not necessarily *singular* but *multiple* or *fractional*. Sometimes multiple enactments consolidate themselves to make coherence – Law talks of 'fractional coherence' (2002) – that typically leads to a successful IS project proposal evaluation. Alternatively they may remain a fragmented set of loosely connected realities when the proposal fails.

In this context we can see the role of the evaluation methodology as an important non-human actor. Acting on behalf of ALFA Management Group, it exerts influence on the evaluation process by providing inscription forms and rules, and common matrices, thus allowing a consistent and comparable presentation of business and IS realities and evaluations across different projects. For example, the Head of Projects explains that methodologies exist:

> *for consistency across the organisation. First of all methodologies exist … to document activities. Especially with long stream projects, the likelihood of having the same people engaged at the start then at the end probably is low. The likelihood of someone hanging around to the full cycle of project is low, they need to move on, they get promoted, they work on a new project. So the whole thing about the business case and methodologies surrounding it is about communicating what are these core objectives, be it to the sponsors, be it to the project team, be it to the powers, be in the organisation, be it to the executive who sponsors it. Even though I am not on the core sponsorship team, we meet weekly, monthly, CEO is by de facto the sponsor so we need a tool to communicate to him in a simple way and in a consistent way. So when he sees Dianne's project, he compares it to Fred's project he has common metrics. So it's about the business case exists as a communications tool and as a common set of metrics in terms of being able to, if you like, bring together and be able to compare likes.*

From a point of view of a single IS project proposal, as we have seen above, the methodology is not at the centre of attention but acts on distance from periphery. If we see IS project proposals as complex and fractional objects we can understand the role of the evaluation methodology as enabling and enhancing fractional coherence. From this perspective we can see that while acting from the periphery, an evaluation methodology may be crucial for enacting sufficiently coherent business and IS realities inscribed in IS project proposals. On the other hand, at the company level at which different proposals compete for limited resources, the evaluation methodology is a more visible core actor as it regulates 'communication tools' or inscription devices, including a 'common set of matrices' that enable comparative evaluations and selection. In this sense the evaluation methodology can be seen as among the key actors in IS evaluation and selection from the company vantage point.

CONCLUSION

In this paper we proposed and empirically grounded a sociotechnical conception of IS projects evaluation. This conception departs from the dominant views of IS project proposals evaluation in the literature. The sociotechnical conception, inspired by and theorized within ANT, allows an investigation of IS projects evaluation in practice without pre-empting who the actors are and what they (can) do. The paper makes several key contributions.

The ANT account of the IS project evaluation processes in the ALFA Invest company enabled us to understand an eminently relational nature of IS proposals that emerge as focal actors within dynamic actor-networks. The IS project proposals are constitutively entangled with human beings and their imagined and enacted business/organizational/technological realities. Our analysis shows that the meaning of IS project proposal documents does not reside in the text of the document nor can it be subsumed by a sum of individual understandings. Instead its meaning is in the relations emerging between the document and all other actors in the network. Thus there is no IS or future IS-enabled business or organizational reality outside the actor-network. The actor-network that emerges and reconfigures as it produces IS business case is the key for our understanding of IS project evaluation and the role of methodologies in practices.

The traditional view of the IS pre-investment evaluation that assumes that we first develop project proposals and then evaluate them using as rigorous as possible methods, seems to be quite a mechanistic one. Our ANT account of the evaluation processes in the case company suggests that it is not possible to separate out the development of IS project proposals from their evaluation. One of our major arguments is that the IS evaluation practice (including the evaluation methodology itself) produces the object it evaluates, that is, the IS project

proposal, together with evaluative statements about this object. In other words the reality of business processes and their imagined IS (inscribed in the IS project proposal documents) and the evaluative statements of these realities are produced together. If we accept that then the question of an IS project proposal success and the nature of IS evaluation processes can be seen from a different and more useful perspective.

The key to understanding the meaning of evaluation processes and methodologies in practice is to appreciate relational materiality of actor-networks forming around IS project proposals as focal actors. As actors (business managers, IS experts and managers) mobilize and enrol in an actor-network around an IS project proposal document, this document emerges and transforms (into different versions) as a consequence of the relations forming within the actor-network. The IS project proposal document – from an idea to concept to preliminary business case – is an inscription device that emerges through its relations with and among different actors. As we have demonstrated the IS project proposal document is seen as an enacted and relational entity which inscribes visions and interests of these actors. It emerges depending on configurations and reconfigurations of the relations in the actor-network. Learning from ALFA Invest we can conclude that the enrolment of relevant actors (with required expertise and experience, from relevant parts of the business) in the actor-network of the IS project proposal and the translation of their expertise and interests into the project document are critical for IS project proposals evaluation. In the words of actors, the success of your IS project proposal depends on knowing your key people, taking 'your people on the journey', and engaging them in the production of the document so that they become committed and feel ownership.

Another contribution of the paper is about evaluation processes and how evaluation practices cope with different perspectives of pre-existing business, social and technological realities, how new realities (a vision of business processes with embedded IS proposed to be built) and statements about these realities are created, and how (and why) these realities hang together and become sufficiently coherent. Fragmented and loosely connected realities lead to IS proposal failure. When different realities seen in an IS project proposal document converge and consolidate so as to become sufficiently coherent – while not necessarily expressing singular reality – we are dealing with 'fractional coherence'. Given that a singular meaning and perfect coherence are not likely to be achieved, fractional coherence may be sufficient to produce a successful project proposal. While it seems that actors in ALFA Invest know this and also know to recognize when sufficient coherence is achieved, their experience is not translatable into descriptions or criteria meaningful to others. Further research should address the practical meaning of fractional coherence of business and realities in the IS project proposal documents.

Finally, the practice of IS evaluation – for which various methods propose a range of rigorous and well structured processes, models and calculation techniques – is shown to be vague, sometimes messy, and seemingly unsystematic. Is the IS evaluation vagueness a sign of poor evaluation methodology? Should (could) the practice be improved by the adoption of and stringent adherence to a more precise and exact methodology as most of the literature argues? We answer this question by showing that the key part of IS evaluation process is informal and vague "because much of the world is enacted in that way" (Law, 2004, p.14). In ALFA Invest they learned the problem is not a more precise and more stringently applied methodology as the Head of Projects clarifies:

> *[Y]eah there is a methodology, and the challenge is actually in the application of the methodology. Like with a lot of methodologies it could be beautifully bound in terms of the theory and then the practice comes down to well …, how good was I at estimating how much the costs were going to be. I said it wasn't going to cost more than x to run this, and you get to go live and you say no way we can run this without hiring 6 people so now your business case has changed from when you first started. So the challenge is in the application of the methodology not the methodology itself.*

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