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### Who Decides the Shape of Product Markets? The Knowledge Institutions that Name and Categorize New Technologies

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# WHO DECIDES THE SHAPE OF PRODUCT MARKETS?

## THE KNOWLEDGE INSTITUTIONS WHO NAME AND CATEGORIZE NEW TECHNOLOGIES

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*We consider naming and categorization practices within the information technology (IT) arena. In particular, with how certain terminologies are able to colonise wide areas of activity and endure for relatively long periods of time, despite the diversity and incremental evolution of individual technical instances. This raises the question as to who decides whether or not a particular vendor technology is part of a product category. Who decides the boundaries around a technology nomenclature? Existing Information Systems scholarship has tended to present terminologies as shaped by wide communities of players but this does not capture how particular kinds of knowledge institutions have emerged in recent years to police the confines of technological fields. The paper follows the work of one such group of experts – the industry analyst firm Gartner Inc. – and discusses their current and past role in the evolution of Customer Relationship Management (CRM) software. We show how they make regular (but not always successful) ‘naming interventions’ within the IT domain and how they attempt to regulate the boundaries that they and others have created through episodes of ‘categorisation work’. These experts not only attempt to exercise control over a terminology but also the interpretation of that name. Our arguments are informed by ethnographic observations carried out on the eve of the contemporary CRM boom and interviews conducted more recently as part of an ongoing investigation into industry analysts. The paper bridges a number of disparate bodies of literature from Information Systems, Economic Sociology, the Sociology of Scientific Knowledge, and Science and Technology Studies.*

# 1 INTRODUCTION

*Names matter.* The ways in which new technologies are named and categorized is a matter of basic importance to Information Systems (IS) research and other social scientific analyses. As those who have studied the information technology (IT) arena for any length of time will tell you, there appears a compulsion within this domain to rename technologies (Swanson and Ramiller 1997, Currie 2004). IT vendors periodically (and repeatedly) designate offerings differently from those of previous generations or from competitors. Between 1990 and 2002, for instance, industry application software vendors used nearly 400 different terminologies to describe products (Pontikes 2008). The conventional explanation for this is that competition pushes vendors to differentiate products from those of rivals. No one wants to be seen to be emulating a competitor and a new name would appear to constitute one important way to distinguish a difference.

Yet, despite this compulsion, certain designations appear able to colonize wide areas of activity. Some technologies may be given a standard nomenclature that can then prevail for a significant period of time (as evidenced by the recent examples of MRP, MRPII, ERP, CRM etc.). These names refer not to a specific homogeneous product but to a more or less heterogeneous collection of artefacts (software, management techniques) which then went onto link a community (or, rather, several overlapping communities) of suppliers, intermediaries and adopters. Such terminologies proposed a boundary that linked a group of (often quite various) artefacts while differentiating them from others. This begs an important question that IS scholars have yet fully to answer.

*Who decides?* Who determines the boundaries around a product terminology? By this we intend the question as to who judges whether or not an individual technology instance is included as part of a wider terminology. In other words, who, if anyone, is naming and categorizing technological fields?

Current scholarship has tended towards a *communitarian* framing of this important issue. Who shapes a name? *The community does.* The overall conception of a product market is seen to be moulded not by any one specific individual or group but by vendors, adopters, journalists and consultants together, in what Wang and Ramiller (2009) have described broadly as the ‘innovation community’.

Terminologies gain traction precisely because no one group or actor has the final say on their shape and meaning. Passing through many hands a name becomes a hook that can facilitate a variety of understandings and interpretations leading all sorts of vendors to rebadge their systems according to the latest terminology. Indeed, such diversity and ambiguity in meaning is seen to lead to richness and robustness in the process of innovation around a terminology (Swanson and Ramiller 1997).

This kind of formulation seems less adequate today. It represents a rather imprecise way to characterise what in fact has become a more organized process. One only has to look back at the recent history of information systems development, for instance, to see that, although the early stages of recent major innovations were characterised by initial ambiguity, later developments were pursued in a more structured manner. This was because at the outset of today's modern corporate information system, the 'institutions of information technology' were often rudimentary and inchoate (and early accounts of these categories resembled the communitarian account above), but, over time, the institutional framework surrounding these technologies have become better established (Abrahamson and Fairchild 2001, Wang and Swanson 2007, 2008, Swanson 2010). Comparing the development of information systems today with the development of systems from just a couple of decades ago, we are struck by the number of specialised intermediaries that now surround workplace information technologies.

We suggest that the communitarian view might be strengthened through foregrounding the emergence in recent years of the *knowledge institutions of information technology* that attempt to draw up and police the boundaries that surround new technological fields of activity (Swanson 2010). Clearly, vendors and other members of the wider community still feature centrally in the designation of a technology. However, the consensus surrounding an emerging field can often nowadays be steered *inter alia* by specialist forms of consultant known as 'industry analysts'. We are not alone in noting this important development. Wang and Ramiller (2009: 20) have pointed to how it is industry analysts who are often the 'originators' of new terminologies or, if not the authors, the body at least which attempts to "provide the first public articulation of [an] innovation" (see also Swanson 2010). What we

want to do here is to develop this insight further through describing and conceptualizing in detail the work of one highly influential industry analyst firm.

Our argument is that it is industry analysts who have established the cognitive authority to exercise control over the labelling of a technology and subsequent interpretation of that name. They do so through making continuous ‘naming interventions’ within the IT domain and then attempting to control how that name is carried forward through episodes of ‘categorisation work’. We focus specifically on one highly influential organization – perhaps the most prominent firm of analysts in relation to workplace information systems - Gartner Inc. (formerly the Gartner Group). We discuss its role in shaping the development and evolution of Customer Relationship Management (CRM) technologies.

The empirical part of the paper is presented in four ‘acts’. The first discusses how the analyst firm critically assessed a vendor seeking to enter a market for which it had no experience or reputation and where it was proposing to offer a novel CRM product. The second describes the various factors that shaped the analyst firm’s judgement – what we describe as its ‘knowledge frame’ (Beunza and Garud 2007). As well as focusing on the capacity of industry analysts to shape technological fields, we also attend to the constraints on how they proceed. We find them to be operating in a highly complex environment where their interventions can be, and often are, contested. Thus, thirdly, we describe the opposition that can swell up around assessments, which can then force the analysts to have to *defend* their position. Contestation also reveals the internal disagreements that can emerge around these naming/categorization practices. We show how individual analysts within in the same firm were at odds with each other about whether or not the particular vendor was part of the CRM field (or indeed to which field it belonged). Fourthly, we conclude by discussing the ambiguity that has now grown up around CRM and what this means for the shape and direction of this particular technological field.

Conceptualising the work of these market experts is not straightforward and requires the bridging of a number of disparate bodies of literature. This includes supplementing our conceptual toolkit with ideas from Economic Sociology on ‘critics’ (Zuckerman 1999, Rosa *et al.* 1999, 2003), the ‘finitist’ perspective from the Sociology of Scientific Knowledge (SSK) (Barnes *et al.* 1996), and recent

Science and Technology Studies (STS) investigations into economic and financial markets (Beunza and Garud 2007). Our article is based on a longitudinal study that includes ethnographic research conducted on the eve of the birth of contemporary CRM and interviews carried out more recently as part of an ongoing study into industry analysts.

## **2 COMMUNITY VERSUS COMMODITY**

A number of scholars have argued for the need to pay attention to the nomenclatures of technology supply and associated commentary as a site where technology futures are worked out and promises articulated and validated. In this respect, the new terminologies emerging within the IT sector have been conceptualised variously as ‘technological visions’ (Webster 1993), ‘organising visions’ (Swanson and Ramiller 1997), ‘practice-based imaginaries’ (Hyysalo 2006), ‘technological imaginaires’ (Flichy 2007), ‘fashions’ (Baskerville and Myers 2009), ‘IT innovation concepts’ (Wang 2009), to name but a few. We focus here predominately on the notion of organising vision as it offers perhaps the most comprehensive account of this phenomenon in the IT application sector.

Swanson and Ramiller (1997: 460) define an organizing vision as a “focal community idea for the application of information technology in organizations”. They developed the notion to show how the constant proliferation of ‘buzzwords’ in the information technology sector was not specious or hollow, as some had argued, but played an important role in mobilising the material and intellectual resources needed for innovation. One of the key aspects about organizing visions is that they are shaped not by specific individuals or groups but the wider IT innovation community. Terminologies are essentially seen as discourses that gain traction precisely because no one group or actor has the final say on their shape and meaning:

The organizing vision is developed by many different storytellers, who modify and embellish it to suit their own and their audiences’ tastes and interests, and only more or less fully, never in complete and definitive detail. It necessarily changes and grows over time in the re-telling, as the community finds its way (*ibid.* 463).

The analytical concept of an organising vision has given impetus to others to investigate the work names do in processes of innovation (Currie 2004, Wang and Swanson 2007, 2008, Swanson 2010). Relevant to our empirical focus, for instance, Wang (2009) has similarly theorised the rise of

Customer Relationship Management as an 'IT innovation concept'. He underlines how the term CRM was interpreted and understood differently across a diffuse and heterogeneous group of actors:

...the customer relationship management (CRM) concept was created and developed by the CRM community. The once leading vendor, Siebel Systems, despite its dominance in that community, never owned the concept; anyone interested in CRM can read, hear, write, and talk about the concept. Members of the CRM community may agree or disagree on certain aspects of the concept and, thus, promote or discredit the concept accordingly (Wang 2009: 6).

We find particularly useful the literature that draws attention to the wide range of constituencies now involved in the shaping of a new field and the resultant interpretive flexibility that can often surround an emerging technology. However, its focus on the 'diverse interorganizational community' (Swanson and Ramiller 1997: 458) may not sensitise fieldworkers to the presence and influence of the kinds of market actors described here. Moreover, whilst we acknowledge that the development of a technological field is not a space *owned* by any particular group of practitioners, vendors, users or analysts, it is also (increasingly) true that certain institutions now exert particular influence over it. The IT innovation community (Wang and Ramiller 2009), whilst it is *a community*, is not open and equal in the way in which we might conceive of 'scientific communities', say, operating under the Mertonian ideal (Mulkay 1976).

In some of the first large-scale packaged workplace information technologies, the main institutional repositories were practitioners: user organisations, management professions and professional associations (Swan *et al.* 2003). However, we also note a pattern familiar from other innovations: the establishment of a division of expert labour. From the 1970s onwards, we have seen the increasing influence of management consultants, and by the 1990s, consultancy organisations were beginning to collate information about supplier offerings, while by the twenty-first century we find a much more elaborate system of consultancy and advice, and the emergence of specialist industry analysts, making available formalised and systematised assessments of particular vendors and their offerings (Swanson 2010). Analysts are attempting to make comparative assessments of vendor technologies on a more commodified basis, a prerequisite for which is to define vendor systems and the application goals to which they are geared. What we witness is that a market is being built for new kinds of knowledge-based products. We would point to how, today, the development and evolution of technological fields are increasingly shaped by processes of 'commodification'. This imparts particular sets of dynamics to

the community. As Adler and Heckscher (2006: 30) suggest, whilst commenting on the ineffectiveness of new kinds of markets for supplying knowledge, “individuals get the output of specific expertise but not the ability to interact with it and improve it”. We think there is an important point to be made in relation to how new kinds of actors and forms of knowledge constitute markets. Unpacking this further requires that we combine insights from IS research with relevant scholarship from Economic Sociology on ‘mediated markets’.

## 2.1 Mediated Markets

Economic Sociologists describe mediated markets as the places where ‘critics’ (as in ‘food critic’, ‘theatre critic’, ‘wine critic’ etc.) play a pivotal role in shaping the nature of transactions between consumers and producers (Zuckerman 1999, Rosa *et al.* 1999, 2003). Critics are said to shape *demand* through endorsing products and this is said to nudge the choices of publics in certain directions. They also shape *supply* because whereas vendors are said to strive to differentiate themselves from competitors they are, through the presence of critics, seemingly forced to conform their goods in line with the main characteristics of other offerings in the *product category* targeted. Critics will seemingly only review those products that fit comfortably within the areas they cover (Zuckerman 1999). Those that do not fit within a particular category – because they are unclear, overly complex or ‘too novel’ - will be ‘screened out’ of consideration (*ibid.*). Products that fail to attract reviews and endorsements can be seen as ‘illegitimate’ (*ibid.*).

From the point of view of Economic Sociology, the product category becomes the central aspect in a mediated market. It is described by Zuckerman (1999) as a ‘social screen’. This screen is “not designed by the actor but external to her, given in the categories that comprise market structure” (*ibid.*: 1404). Actors, in other words, are forced to take this form of knowledge into account but are not necessarily able to shape it (cf. Adler and Heckscher 2006).

The analysis of market critics provides useful insights into how product categories can shape product development through exerting (often isomorphic) pressures on vendors. However, we see two weaknesses with the approach as it is currently set out. First, whilst reading this literature, we learn



rather little about the complexities and possible disagreements that may exist around categorization work. Critics appear able to apportion vendors within the confines of *stable* classifications and according to *fixed* vendor product properties. This lends to the reading that the screening of vendors is a routine and unproblematic activity – a view with which sociologists interested in classification would almost certainly take issue.

The ‘finitist’ perspective within the Sociology of Scientific Knowledge (SSK), for instance, portrays the creation and maintenance of classifications altogether differently. For them, the categorization of an artefact cannot be fixed in advance (Barnes *et al.* 1996). Deciding whether something counts as a particular instance of a wider classification requires a decision to be taken and a process to be carried out. This is often a difficult and ambiguous process, which can be delegated to various forms of ‘categorization work’. In this delegation, Barnes and colleagues (1996) note the central role of individual and collective ‘judgement’ in deciding. Moreover, even when a choice is made, there is every possibility of contestation, that a decision could be challenged: “No act of classification is ever infeasibly correct” (*ibid.*: 56).

Second, in weighing up the work on market critics, there are also obvious opportunities to bring in scholarship from Science and Technology Studies (STS), especially from those who have turned their attention to economic and financial markets (Callon 1998, 2007, MacKenzie 2006). These include scholars exploring the various *material artefacts* and *intellectual equipment* necessary for markets to operate (MacKenzie 2009). Researchers here have been seeking to recast and widen the debate on markets from one that focuses predominately on the ‘interpretative’ capacities of actors towards the tools and devices underlying and facilitating market-making processes (Callon *et al.* 2002). Extending this analysis to the work of critics, it might be suggested that conceptualising product categories as purely ‘social’ (or cognitive) would imply that they have a rather weak influence. An alternatively way to explain the constitutive effects of product categories might be to focus on the *equipment* involved in the screening processes. An exemplary instance of this latter ambition is a recent discussion of how securities analysts evaluate the issue of firm profitability (Beunza and Garud 2007).

### 2.1.1 Critics Construct Frames

Beunza and Garud's (2007) attempt to broaden the lens of Economic Sociology through suggesting that market categories are only one of the factors shaping the work of mediators. When securities analysts, for instance, attempt to value the potential profitability of a firm their view is shaped by what they call, drawing on Goffman, an 'analytical frame'. An analytical frame is made up of a range of socio-material devices. Once constructed these frames are said to act to focus the security analyst's attention on a specific set of circumstances, to the exclusion of other market information, directly suggesting how a new phenomena should be judged. Interestingly, they note how frames are susceptible to 'controversy'. Indeed there can and often are 'frame disputes', which as Goffman (1974: 323) notes are 'endemic to framing'. These disputes arise because, once committed, securities analysts tend to persevere with a frame. To do otherwise, would seemingly diminish their 'credibility' (Beunza and Garud 2007). This commitment inevitably leads to disparities between different securities analysts - particularly between those reviewing the same phenomena whilst using a *different* frame. A controversy can lead an analyst eventually to *abandon* a frame in favour of another.

In what follows, we employ several of the above ideas. We bring together the work on 'organizing visions' with that of 'product categories' (for new designations are surely also attempts to redraw the boundaries around classes of technology). We show how the industry analyst firm studied attempted to evaluate one particular vendor's CRM offering and how this was complicated and fraught with disagreements; but also how analysts appeared to have established methods and tools for seemingly resolving such matters, which, influenced by Beunza and Garud (2007), we describe as their 'knowledge frame'. We find useful Beunza and Garud's (*ibid.*) suggestion that frames can lead to disputes. However, our focus differs from theirs in one important respect in that we give greater attention to how industry analysts vigorously *defend* their frame. Before turning to the empirical material, we provide some detail on how we conducted our study.

### 3 RESEARCH METHODS

#### 3.1 Research Setting

Our focus is specifically on the commercial research firm known as ‘Gartner Inc.’. With over 4,000 employees and offices in 80 countries around the world, Gartner is widely recognised as the most influential of industry analysts (Burks 2006, Firth and Swanson 2002). It is reported to have over 60,000 clients from 10,000 different organizations (Drobik 2010). Founded in 1979 by Gideon Gartner, the firm operates (almost exclusively) within the information technology sector, where it provides four kinds of services: it runs ‘executive programs’; it has an established consultancy wing; it organises regular themed conferences and symposiums on various emerging technological topics; and it produces research for the IT market. It is the latter activity that forms the bulk of its enterprise, where 80% of revenues are generated, and the majority of its 1,200 analysts are employed (Drobik 2010).

The influence of Gartner’s research has been noted within IS research (Ramiller and Swanson 2003, Firth and Swanson 2005, Burks 2006, Swanson 2010), with the episode attracting most comment being their authoring and subsequent shaping of the Enterprise Resource Planning (ERP) terminology. The successful designation of ERP by Gartner is widely acknowledged as a key development in the recent history of information systems. This was also a moment in which this group of experts appeared to gain a certain amount of cognitive authority.

It was in their scenario document *ERP: A Vision of the Next-Generation MRP II* (Wylie 1990) that Gartner first coined the term ‘ERP’, proclaiming it the ‘new information system paradigm’. Mabert *et al.* (2001: 69-70), for instance, noted that Gartner not only created the term but set out what functionality it should contain:

The Gartner Group coined the term ‘enterprise resource planning’ in the early 1990s to describe the business software systems that evolved as an extension of MRP II-type systems. They stipulated that such software should include integrated modules for accounting, finance, sales and distribution, HRM, material management, and other business functions based on a common architecture that linked the enterprise to both customers and suppliers.

Soon after, other players (most notably vendors and consultants) began to flesh out what ERP was and how it worked, followed by adopter accounts of the organizational benefits of its adoption (Wang and Ramiller 2009). Outwith this initial involvement, Gartner appeared to exercise a hold over the activities of ERP vendors, in particular through the production of various ‘research tools’. This included, for instance, their ‘vendor briefings’ that worked to consolidate the existence of this domain of technological activity. Vendor briefings constituted particular vendor offerings – a technology like SAP’s R/3 system, for example - as an instance of ERP (Author Study 2009).

Gartner continued to chart ERP’s future development trajectory (Mabert *et al.* 2001, Judd 2006). In 2000, for instance, they boldly declared ERP ‘dead’ and mapped out a transition to the next phase (described as ‘extended ERP’ or ‘ERP II’ [Bond *et al.* 2000]). However, on this occasion, Gartner’s death sentence turned out to be premature. This evidences how these organizations wield complicated and highly uneven kinds of influence. Not all interventions are able to sustain themselves. This throws up questions in relation to how we understand the prominence of these actors – an influence characterised by demonstrable moments of success but also equally failure – in subsequent technological fields.

### 3.2 Research Approach

We have been able to map out the changing dynamics of CRM and Gartner’s role in shaping CRM over the period of several years. The benefits of a longitudinal approach are that it will reveal how the capacities of the various knowledge institutions to control and police the boundaries surrounding CRM are not static but changing over time. This has been possible through conducting studies at different stages in the development and maturation of CRM. We carried out an initial study at the turn of the century where we were able to witness Gartner’s role in advising potential adopters of the benefits and disadvantages of particular CRM packages (Author Study 2007). We were able to return to this study through conducting further fieldwork almost a decade later on the more general influence of industry analysts. Here, as well as collecting new data, we were able to gain particular insights by re-examining with the benefit of hindsight our initial findings.

Fieldwork for our first study was completed on the eve of the emergence of contemporary CRM. Then there appeared to be little doubt that Gartner (just as it had done a few years previously with ERP) would have a strong hand in influencing the direction of this new field. All of its early writing pointed to how this would be the case. For instance in *Top Ten Trends in CRM for 2001* Gartner fired a warning shot over the heads of any IT vendors who might have been thinking of simply rebranding their existing solutions as CRM systems: “About 500 enterprises claim to sell CRM software, but only 200 actually do so” (Gartner 2001: 2). Our later fieldwork, however, reveals that in this context Gartner did not have anything like the same kind of influence. There now appears to be a number of industry analysts or equivalent organization speaking with authority about this field (Wang 2009). This observation highlights the importance of a longitudinal perspective in understanding the evolution of technological fields (see Author Study 2011). It also reminds us that whilst certain market actors can exert influence, the achievement of a new field takes place in an extremely heterogeneous landscape, involving a diverse and unevenly malleable array of social and material elements.

### 3.2.1 *The First Study (2000)*

Our interest in Gartner grew when one of us conducted a year long ethnographic study at a public organization (the bulk of which is reported in [Author Study 2007]). This large institution (hereafter ‘UserOrg’) was attempting to complete the procurement of a new CRM system and had contacted Gartner to help in the evaluation of a number of prospective vendors. The procurement team were finding it difficult to assess critically the various options, thus an IT manager telephoned a Gartner analyst specialising in CRM. The advice received was then fed back to the wider procurement team (he would type up notes of his various discussions and circulate these at meetings of the wider procurement team). However, rather than clarify the situation, the analyst’s intervention created further confusion. It led to a hotly contested debate between Gartner and one particular vendor about the nature and novelty of their offering. This contestation is discussed below.

One of the authors had good access to UserOrg for over a period of a year. He was able to attend and observe the various meetings concerning the procurement, to collect material such as email

communications and official correspondence, and interview the various players involved in the selection process. In total, the fieldworker attended more than a dozen such meetings and conducted over twenty interviews.

### 3.2.2 *The Second Study (2009-2011)*

Our second viewpoint on Gartner was when we returned to study their role in shaping CRM several years later as part of a further study into the nature and role of industry analysts. Here we conducted interviews with Gartner as well as with a range of other players in the industry analysis space. In terms of which Gartner analysts we choose to interview, these were not chosen randomly but we deliberately singled out those we had witnessed in our earlier research at UserOrg. The aim was to see whether (and how) Gartner's view on CRM had developed in subsequent years. Two analysts in particular had been influential – one based in the UK and the other in North America. The American analyst has now left Gartner and is no longer an industry analyst – thus was not contacted. The UK analyst is still highly active in the field and we have interviewed him twice as part of our current study. We have also interviewed and had informal discussions with three other members of the CRM team. We also interviewed Gideon Gartner, the founder of Gartner, to help understand the history of Gartner's naming practices. We interviewed several analysts from other competitor firms to ask them about Gartner influence in naming technological fields. In addition, finally, we have interviewed a number of analyst relations (AR) experts (actors who advise IT firms on how to interact with industry analysts).

We have also been able to observe industry analysts going about their activities. For instance, we have attended on two occasions the annual two-day 'Gartner CRM symposium' in London. Here we have been able to observe and talk to with members of the wider Gartner CRM team as well as Gartner clients. We have participated in a number of Gartner web seminars on the topic of CRM. We have visited Gartner's offices in London. Furthermore, we have been involved in a number of telephone conferences organised by analyst relations (AR) experts concerning the topic of CRM. Furthermore, a large part of the work of industry analysts comes in a published form. Some of these documents have

been downloaded from the internet and other pieces have been passed to us from the various industry analysts and Gartner clients interviewed. Data gathering has not ceased. We will continue to monitor the activities of industry analysts for at least another year.

In terms of how we gathered data, our initial procurement study was exploratory (we were principally interested in the means and methods by which an organization compared several computer systems before selecting one). It was towards the end of this study that our attention was drawn (and this was something of a surprise) to the influence of industry analysts like Gartner. As we came to understand better Gartner's research process, we became particularly aware of the importance of their 'naming interventions' and 'categorization work'. Since much of the work of industry analysts appeared to be related to these two activities, this is where we focused our data collection. Thus, in the second stage of the research we purposefully directed interviews and discussions towards understanding how (and why) analysts named new technological trends, how they were able to categorise vendors as belonging to a particular classification, and so on.

### 3.3 Data Analysis

These two episodes of fieldwork have led to the collection of a large body of data. We initially identified those aspects of this data set that were related to naming and categorization and then set about sorting these into primary themes. For instance, this included the process of "how industry analysts actually categorized vendors", "what knowledge, practices and tools they had for doing this", "what tensions/difficulties surround such the process", and so on. This roughly followed the open coding process found within Grounded Theory (Glaser and Strauss 1967). Later we continued to develop our analysis through constructing a narrative to gain further insight into how these themes related to the chronology of events in the procurement study we had previously observed. We eventually settled for a dramaturgical structure because of the resources it offered for organizing this data. This was in particular the notion of 'the act', the idea that a 'drama' was unfolding and the focus on 'actors' and the various 'roles' they play (Feldman 1995). We felt that presenting our study in 'four

acts' usefully conveyed the sense that there was some kind of performance going on and that there were a number of elements that went into the making of that performance.

## 4 ACT ONE: YOU'RE NOT ON OUR LIST

We begin by discussing Gartner's intervention during the UserOrg procurement. Gartner had been asked to provide the organization with information on the various CRM systems being considered. The 'vendor briefing' is one of the most common research tools used by Gartner and other industry analyst firms to scope out the market. It is the principle vehicle whereby IT vendors present offerings and business strategies to analysts covering their particular product market (Gartner, no date). The idea is for analysts to collect information about vendors, which then form the basis of later assessments or recommendations. Gartner purportedly conduct more than 12,000 briefings with vendors every year (Drobik 2010). Vendors are 'selected' for briefings based on the research interests of the particular analyst firm but, also, in the case of Gartner, because this firm is attempting to "cover the breadth of IT subject matter" (Gartner, no date). It is also common for Gartner's clients to ask for briefings to be undertaken on their behalf. Alternatively, vendors (especially newcomers) may contact Gartner in order to brief them. Whilst Gartner advertise their coverage to be extensive, it also acknowledges that no analyst firm can cover *all* vendors in a market (*ibid.*).

### 4.1 Providing an Assessment of Vendors

Gartner was sent the names of the vendors as well as the basic description of the kinds of solutions offered. A Gartner analyst based in the UK (hereafter 'Tom'), responsible for providing research specifically on the CRM market, responded with his view on each of the possibilities. These were then summarised in a document by a UserOrg IT manager before being circulated within the wider UserOrg procurement team. The analyst's comments were described as follows:

**LAGAN** has done a good job in Birmingham and Belfast. They are very specifically working in the Local Government marketplace, they know the business well and [Tom's] view is that they should be on the list of products to be considered. **ONYX** is a US company and...work mainly in the private sector. Their products are good, but there would be some concern over scalability if we expected the operation to extend to hundreds of users in the front-office....[Tom] has a list of some 500 vendors of CRM, many of which he meets on a regular basis to track the development of their products. **[PICOLO]** is not on the list, he had not heard of them. He took an action to speak to a colleague based in America and come back to [UserOrg] on what the US Analyst knew of them. **SIEBEL** has the largest share of the commercial marketplace, but he [Tom] felt that in a few years, **ORACLE** will have



emerged as the leading supplier to the Local Government market. This is not because it has the best products, but because it is better at selling to Local Government (note circulated within UserOrg).

*Prima facie*, there was nothing particularly surprising about these reviews. Only one vendor (Lagan) appeared to receive an unqualified endorsement. The remainder were seen to have both a number of strengths and weaknesses. It was only through paying close attention to the detail of the document that one finds the bombshell. The vendor we are calling 'Picolo' appeared to be something of an anomaly in Gartner's eyes. It did not appear on any of its 'lists', meaning the analyst firm could not provide specific commentary on this vendor. The analyst stated how he would check with Gartner colleagues based in the US as to whether they could provide more detail. In the meantime, he provided some preliminary comments based on his analysis of the documentation sent:

They speculated that the [Picolo] product was a toolkit rather than a full solution. In this case their concern would be how much expertise [the 'joint venture partner' working with UserOrg] had with the product. It was explained that [Picolo] staff would be likely to be involved in the installation as well. [Tom] would then be concerned about the ongoing support once the [Picolo] specialists leave the site. He felt that [UserOrg] would be the Guinea Pigs for this solution and in our position he would not be prepared to take the risk (note circulated within UserOrg).

Based on limited information, the analyst was able to raise a number of concerns about Picolo, consisting mainly of the fact that Picolo appeared not to have a 'complete' local government CRM solution available. Since previous customers were all from different sectors (telecommunications and banking), this meant it would have to carry out extensive redevelopment of its existing system.

UserOrg would potentially therefore be 'guinea pigs' for this work. In the analyst's view, it was not worth taking the 'risk'. Later the same week the Gartner analyst gets back in touch to say that he had spoken to his US colleagues and they too were *unaware* of Picolo. No vendor briefings had been carried out on this vendor. Gartner therefore could not provide further information. This latest news caused some disconcertion amongst UserOrg employees: Picolo had attracted many complimentary comments about both its technical ability and the willingness of its technical staff to address the needs of UserOrg. For many people it was their 'preferred option'. This was now seemingly being challenged.

UserOrg thought it necessary to give Picolo the opportunity to respond to the (potentially damaging) review, which it choose to do and in a robust manner. Picolo pointed to a number of issues related to the status of its software (this included the fact that whilst its solution was 'new', the various

components going into it were “tried and tested products” already running in various other sites around the world). It also raised some objections to the kinds of research produced by industry analyst firms. In particular, it pointed out how “...at present these companies do not have a category for what [Picolo] are offering...”. As a result, because of the narrow way these experts currently conceived of Customer Relationship Management, Picolo had therefore “...not spent any time making itself known to industry analysts”.

When informed about Picolo’s comments, Gartner, in turn, sought to defend its own position. The analyst pointed out how it was not *him* problematising Picolo but the Gartner client base. He describes how one important way Gartner gets information was not simply through “being briefed” by technology vendors but through contact with their own clients. He goes on to add how the CRM team had conducted over 150 CRM vendor briefings in the last year alone and only a small number of these had been initiated at the request of vendors. The bulk came through requests from their clients. The important point, he notes, was that in all these requests “[n]o client has asked us to ask for a briefing from [Picolo]”, which he thought was something of a ‘surprise’.

To summarise, the industry analyst firm Gartner has thrown into question a procurement choice through casting doubt over one particular vendor – the newcomer that had emerged as the favourite. In the eyes of Gartner, Picolo was an unknown quantity. As they saw it, they were *not* part of the CRM field. They thus provided a potentially critical review of this particular offering – one that later leads to Picolo being *removed* from the user organization’s list of possible options (for more detail on this see Author Study 2007). This begs the question: Why was this vendor problematised in this way?

Answering this requires investigating Gartner’s research process.

## **5 ACT TWO: GARTNER’S KNOWLEDGE FRAME**

### **5.1 Making Sense of a Bit of Chaos**

The information technology market is extremely complex. It is fast changing with the constant arrival of innovations, concepts and terminologies (Swanson and Ramiller 1997). Through conducting their

research industry analysts see their job as ‘trying to make sense of a bit of chaos’ (interview, Gartner analyst). They are attempting to provide some ‘clarity’ to those paying for their services. Here we want to show that they have established means for doing this. This includes the methods to scrutinise the claims vendors make about technologies. This task is facilitated by a wide range of social and technical components. Perhaps another way to say this is that these analysts have established ‘frames’ (Beunza and Garud 2007) through which they view developments in the market. Let us look in more detail at the nature and form of these frames.

### 5.1.1 Naming Interventions

An essential part of Gartner’s framing of an emerging technological field is the various ‘naming interventions’ it makes. Gartner are prolific in designating technologies - the successful naming of ERP being only the tip of the iceberg (Mabert *et al.* 2001). Here an industry analyst reflects on why firms like his have emerged to perform this role:

...often they [IT vendors] don’t have the clout in their own right to name... They haven’t got the independence to be able to; unless they are so huge that they dictate, determine what the market is called. But that is rare. Normally somebody wants a third party to make that ‘naming intervention’. It could be academia that does it; sometimes it is. It could be a group of vendors who get together and start using common terms. But normally the vendors are desperately trying to use different terms because they don’t want to be seen to be copying or following a competitor. So what happens with us is we [Gartner] are in effect drawing a starting line saying: ‘there is the line’. And everybody lines up behind it... (interview, Gartner analyst).

Naming interventions are the analysts’ means of sorting the world for its clients. It is not just their expertise and knowledge that makes them well placed to do this but also because - and apparently unlike other commercial actors – as the analyst goes onto describe, they have no ‘axe to grind’. They seemingly have the ‘independence’ and ‘credibility’ to name a technology. They are the only ones able to draw a ‘sensible box’ or ‘starting line’ from which others can build. A Gartner analyst talked us through what he thought his firm was doing in coining new terms:

When something like CRM comes up or ERP or whatever, you’ll find that what was going on there was that analysts were going: ‘Look there’s a pattern. There’s a trend. It’s consolidating. This is coalescing or whatever. This vendor has bought that one. This is going to go in that direction. It’s all going to end up like that. And that’s going to be called [pauses for effect] ‘ERP’’. We are doing that for the users. The vendors then go: ‘Great. That is where we are going. Boom! We’re an ERP vendor’. They do it because they can see that we have drawn a box around a market that they are slap right bang in the middle of and they feel that they can dominate it or have a serious part to play (interview, Gartner analyst).

Gartner is attempting to make sense of developments for *users*. The particular analyst is clear about this. He repeated it several times during interviews and discussions. However, he also notes how these interventions affect the activities of vendors – who will often align themselves around a new terminology. He explained this (constitutive) effect through describing how Gartner had been influential in classifying some of the technologies related to CRM:

...we coin[ed]...acronyms like 'MRM', which is Marketing Resource Management in about 2001. EFM - I think we came up with in about 2005..... So, for example, in marketing, we used to talk about MOM...which is like Marketing *Operations* Management. We decided we would prefer the term Marketing *Resource* Management. I can't remember exactly why, but it was about the resourcing, staffing and operational issues, and it is interesting now you will hardly ever see the term MOM. It just got *slaughtered* by MRM. And every vendor says 'We are an MRM vendor'. And it got its own momentum and off it went. That is kind of how it works (interview, Gartner analyst).

According to the analyst, their terms acquire their 'own momentum' and that seemingly 'is kind of how it works'. Of course, just *how* it works is the issue that needs to be explained. When pressed for further detail on what Gartner did when coining terms, the analyst talked us through an example that he and a colleague had recently been involved in:

I can tell you the story of EFM very clearly, because I have been involved in that with one with my colleagues.... [He] and I were looking at it and saying... 'well wait a minute. There is an elite group of Feedback Management vendors here who are giving multi-channel, real time, and they are doing analytics, and they are handling multiple different processes with one tool, and they are pitching themselves as a means to consolidate, a bit like ERP, down to one tool for handling all inbound and outbound feedback between themselves and the customer'. So we said it is: '*something* Feedback Management'. And we noticed that there is a company up in Boston [who] started to use the term 'EFM' – Enterprise Feedback Management – and we went 'that's the term we like'. So we basically stole it and started using it. We said... 'this is EFM and this is FM. This is Feedback Management and this is Enterprise Feedback Management and these are the players in the market and this is what is going on'. We started that about...2005. And if you look around now, any Feedback Management vendor who is of any decent type will have EFM slapped all over their website because that is the term (interview, Gartner analyst).

Interestingly, as the analyst (perhaps unintentionally) lets slip, Gartner are not always strictly the authors of terms. However, it is the organization that further develops and gives increased impetus to them; they help *shepherd* terms. And the analyst thought that Gartner's seeming ability to successfully promote terms as related to 'timing' and its extensive connections to the wider community:

If Gartner steps in at the right moment - and it is coalescing; and no term has got dominant position - with Gartner getting in and stamping it, with the right timing, then that is what the term becomes. Because Gartner has got a rough contact with so many customers; because that is where we get our information. Yet we know most of the vendors. We are a big organization. We can get organizations to agree that is the term. Because we in effect draw a box around something and say: 'That is the market. There's the definition of it. These are the elements. These are the players. This is how you evaluate it. This is how you compare' (interview, Gartner analyst).

Gartner (more than any other industry analyst firm) has been successful in naming technologies.

However, whilst it appears to have had continued success, there has also been a number of ‘failures’.

What is interesting to note is that the majority of these are not public failures because most naming interventions tend to ‘die internally’:

More difficult is where you try something out and it doesn’t fly. What tends to happen there is that it tends to die internally more often than not. In other words, an analyst becomes an advocate of something...there’s a team of people who created it, but the key issue is that there is a team of people involved but there is one leader who is passionate about it and relentless. That is the key thing. It is partly the intellectual curiosity and the intellectual exercise of ‘that’s the way things are going’, ‘that’s the trend’, and being right! It is a combination of that but also being an absolute heavy, marketing it to death - internally first, because unless it flies internally it will never get outside. So normally by the time it has got outside it has got 20 or 30 analysts behind it, going ‘yeah. That’s the term we are going to use. That’s the term. That makes sense. That’s the term I’m going to use. I’ll make sure that I’ll reference that in my work’. And so it has got momentum in it. And Gartner will hammer away at it for several years often, till it gets enough momentum to get it going (interview, Gartner analyst).

Conceiving of and shepherding a name is not simply an ‘intellectual exercise’ but equally involves enrolling and convincing others. If a terminology is to get outside Gartner, then, it must already have mobilised an internal community of support. This means that individual analysts must become ‘passionate’ about a concept such that they can persuade others of its benefits (‘marketing it to death – internally first’). Thus by the time it gets ‘outside’, if it is indeed to get outside, then there must already a significant group committed to its success. Here we get a glimpse of both the internal community that must be mobilised within Gartner but also of the organizational machinery that needs to be set in train to help shepherd a term.

### *5.1.2 Intellectual and Material Equipment*

Thus far, in common with the notion of organizing vision (Swanson and Ramiller 1997), we have talked primarily about new terminologies as ‘discourses’. However, in the last section, we also introduced the notion of ‘organizational machinery’. By this, we intend that the frames of industry analysts are both symbolic *and* material. Names are aided in their operation with various kind of ‘equipment’. We saw this quite vividly in the case of Pícolo where a classification worked to problematise this particular actor (a classification is what MacKenzie [2009] might term ‘intellectual equipment’). Gartner’s definition of CRM was not simply a theoretical construct but one supported by

various kind of listings, as we see below, including lists of players and their products' core characteristics.

This said, it should be noted however that many of these lists appeared to have a particularly 'local flavour'. We describe what we mean by this through discussing Gartner's attempts to computerise their lists (see Leyshon and Thrift [1999] for a discussion of the automation of lists). In principle, lists could be held on enterprise-wide electronic databases within Gartner, such that information belonging to one analyst could be made available to colleagues elsewhere, especially those located in different geographical locations. However, as we saw in the discussion of Picolo, even those analysts specialising in the same area did not appear routinely to share information with each other. The UK analyst, for instance, had to check via the telephone with US colleagues as to whether anyone in the US offices had information on Picolo. It seems the computerisation of lists occurs but only in a rather limited way. An analyst explains why this is so:

We've got skills databases: 'who knows what'. Client services team uses that, so it is to route the call to the right analyst. Each team has knowledge bases. They tried these glorified schemes of having a centralised knowledge base. There are *some* company wide ones...But we are not keeping volumes of information on each vendor because it changes so fast, to maintain it. It is usually just garbage most of what is in there. You look at it, and you go: 'Where the hell did this come from? It is about 3 years old'. Hopeless! So it's got to be maintained frequently. So what you are really seeing is that each analyst has to maintain their own 'pod of knowledge' and the job will be to find the analyst with the knowledge (interview, Gartner analyst).

The analyst notes the problem of how information stored within centralised information sources quickly becomes 'garbage'. Obviously, as noted at the outset of the paper, this is a world that is changing quickly, where knowledge is contextual and contingent. It thus appears that analysts do not work with formalised (centralised) kinds of information but keep control of their own individual 'pods of knowledge'. Lists and knowledge are attached to particular (groups of) analysts. We return to this point in Act Three, where we argue that a corollary of this is that analysts can often end up employing different frames when analysing the same vendor.

### *5.1.3 Frames are Entangled within the Wider User Community*

Discussing these local forms of knowledge begs the question as to how analysts form their views (or compile their lists). Where does their knowledge come from? There appears to be three main sources:

talking amongst themselves (for instance, where they ‘peer review’ each others reports); meeting with (and quizzing) the actual vendors that are being assessed (the ‘vendor briefings’ discussed above); and through interacting with their clients (who are often the actual users of these technologies). In all our dealings with Gartner, these latter interactions were said to be the primary opinion-forming source for analysts (and this was evidenced by the discussion of Picolo above). A Gartner analyst expresses the scale of the interactions analysts might have over a ‘normal’ year:

...some of the analysts last year were doing a thousand enquires, that’s a thousand calls a year, 200 working days doing five calls a day, that’s five hours on the phone a day just talking to customers...Then face to face like I am doing here, there might be another 150, 200 conversations like that in a year so, [then] 700 face to face conversations of 20 minutes up to an hour. That’s a lot of data in just one area. So as long as you are narrow enough in your focus, you would have to be an idiot, I personally believe you would have to be an idiot not to work out what is going on in that area (interview, Gartner analyst).

Thus built into a frame is this process of interaction with clients. This can involve relatively simple interchanges: for instance, the number of times an analyst is asked about a particular vendor. It can also – and perhaps especially – come from more qualitative forms of dialogue: such as continually hearing comments of a certain type about a vendor. An analyst describes how most of these comments came when they were explicitly searching for feedback on particular vendors (as when they called up the ‘references’ supplied by vendors) but also in other interactions where it was common for their clients to be candid about their experiences with vendors. An analyst gives an example of typical kinds of feedback:

‘Oh yeah, I forgot to tell you that they were complete idiots. They did x,y,z’. And you go ‘Right. Why’s that?’ ‘Oh, they did this. They sent this guy along and his name is’, that sort of thing. Sometimes you can even get down to which individuals in which companies are screwing up (interview, Gartner analyst).

To summarise, what we are arguing is that, in order to make sense of the IT domain, Gartner builds knowledge frames. These frames then go onto create boundaries within the marketplace (primarily but not exclusively through ‘naming interventions’); they generate certain kinds of problematics amongst technology vendors (through episodes of ‘categorization work’). The frames of industry analysts are supported by intellectual and material equipment (lists and databases); and are shaped by the interactions analysts have with wider communities of users. The next section shows a further aspect of frame making which concerns the ability of industry analysts to ‘defend’ their frames. We examine

this by returning to Gartner's encounter with Picolo and showing the further forms of contestation that emerged between these actors.

## 5.2 Gartner Defend their Frame

The discussion around Picolo's system was characterised by two starkly contrasting positions. On the one hand, Picolo saw itself as an innovative player, offering more than a simple CRM solution. The problem, in their view, lay with Gartner's rather narrow classification of CRM. On the other hand, Gartner strongly disagreed. Everything in their frame pointed to the fact that Picolo would be 'a risk'. They were not, in their view, part of the CRM field. The issue came to a head when Picolo were asked to say what exactly was unique about their proposal. Gartner, in turn, was invited to comment on these claims. The episode was played out when Picolo produced a document describing how their solution differed from those offered by competitors. We reproduce the main parts of the exchange here. Picolo begins by outlining the novel features of their system:

[Picolo] is the first vendor to provide an *integrated framework approach* (Picolo document, *our emphasis*).

The 'integrated framework approach' is Picolo's own terminology. This seemingly provides a more connected type of CRM solution. Gartner's repost however is that Picolo's claims are exaggerated and that their approach is similar to what other vendors are already offering:

Loud Cloud. Graham Technologies and several others have said the same in the past (Gartner Comments appended to Picolo document).

Picolo sets out the details of how its offering differs from others – emphasising particularly the disconnected and 'patchwork' nature of competitor technologies:

With other vendors, [UserOrg] would be buying separate products for CRM, Portal front-end, CTI, workflow and document management, email automation and rules engines. While individually these might compare favourably with the [Picolo] components, this would be a patchwork solution and it would be very difficult getting these components successfully integrated (Picolo document).

Picolo state that competitor systems are made up of distinct components that have to be brought together through laborious (and potentially risky) forms of programming work. They point to how their solution already contains important integration functionality that other vendors would be required to bring in from elsewhere. Gartner refute this, noting how there are already systems on the market



with most if not all of these capabilities. As Gartner see it, other vendors could market their systems in the exact same way:

The majority of vendors in this space will provide some form of portal front-end, call management, eService, workflow, email automation and rules engines plus CTI integration (but not CTI). Usually this is achieved through partnerships with a small number of partners (e.g. Interactive Intelligence with Onyx and Siebel with Avaya) (Gartner comments appended to Picolo document).

Gartner then focus on the similarity between Picolo's and one other vendor system:

It is interesting the degree of overlap with eGain. We would see eGain as a vendor that already competes in the eService, email, workflow and a portal front-end but not in the area of CTI or call management. Software vendors have not traditionally crossed the boundary between application and infrastructure but Avaya with Quintus and Altitude would make the same arguments as those made here (Gartner comments appended to Picolo document).

Here they concede a novel feature of the Picolo system - that it is has 'crossed the boundary between application and infrastructure' - but also point out how other vendors might make the same claim (see Rao *et al.* [2005] for a discussion of the difficulties this kind of 'boundary crossing' within product categories brings). Gartner also refutes the suggestion that integrating the various components in one system would be problematic – highlighting how Picolo itself might suffer the same kind of integration difficulties:

We disagree that all combinations are very difficult to get them to work together – it depends on the combination of products selected and whether that combination has been achieved before. [Picolo] is not exempt from integration with the ACD system and the existing eGain applications (Gartner comments appended to Picolo document).

This exchange highlights further aspects of Gartner's frame – in particular the issue of *commensuration*. Espeland and Stevens (1998) suggest that powerful actors attempt to maintain existing classifications (and resist enlargement to account for more variability) to preserve their ability to commensurate. That is, to maintain comparability amongst vendors (Lounsbury and Rao 2004). In other words, their methods are fundamentally relative: they assess vendors not as stand-alone organizations but always in relation to others. The result is that Gartner is able to point out that the apparently novel features of Picolo's Integrated Framework Solution are already contained within existing offerings.

To summarise, what we have shown is that when contested Gartner will robustly defend its frame. It does this mostly through processes of commensuration, which, as argued by Espeland and Stevens (1998), can appear a highly robust mechanism to defend seemingly controversial decisions. It is one

that seemingly puts decision making on a ‘neutral’ plane (everyone can see the characteristics of competing systems, such that individual bias is apparently pushed out of the frame). Act three continues this focus on contestation but this time through discussing a face-to-face meeting between Gartner analysts and Picolo employees. Here we ask: If a frame shapes the way industry analysts assess a vendor then what happens if a vendor is viewed through different frames?

## **6 ACT THREE: INTERNAL DISSENT: NOT ALL IN GARTNER VIEW THINGS IN THE SAME WAY**

### **6.1 Different Reactions to the Same Data**

Since the confusion surrounding Picolo was growing rather than declining, and because there were no available research papers on the vendor, UserOrg decided to ask Gartner to conduct a vendor briefing on their behalf. (As a Gartner client, they had the possibility of commissioning a number of briefings each year). Thus, several weeks later, a number of US based analysts finally sat down with Picolo employees to quiz them about their technologies. The meeting appeared productive for both parties. One Gartner analyst (identified throughout as ‘Dr S’) feeds back her thoughts and assessment to UserOrg:

[Dr S] covered [Picolo’s] reasons for not making themselves known to Gartner before, i.e. an emerging company whose product doesn’t fit neatly into existing categories. They see themselves as providers of business process utility solutions/service providers rather than simply software suppliers. They customise their products for a particular industry sector and aim to share the cost across the customer base to reduce costs. [Dr S] felt they had a very theoretical way of presenting themselves and had found it difficult to find the appropriate analyst (note circulated within UserOrg).

This comment appears double-edged. On the one hand, Dr S points to the problem new IT vendors experience when starting out (they are an ‘emerging company’ and their products do not nearly fit into existing industry analyst categories). She identifies how Picolo thought itself ‘residual’ (Star and Bowker 2007) in relation to the way Gartner categorise and define CRM. On the other, she also indirectly criticises them for failing to understand the role and influence of industry analysts (how to relate to them, how much effort to invest in interacting with them, how to present its strategies and

products, and so on). However, Dr S then goes as far as to suggest that UserOrg should *not* give too much weight to the initial assessment of her UK colleagues:

She advised not to read too much into the fact that they were not known to Gartner. It was in [Picolo's] interest not to be classified with other CRM vendors as they offer broader services. They did not want to be seen as simply a software vendor. They had perhaps failed to take a more pragmatic approach to this (note circulated within UserOrg).

Indeed the analyst explicitly points out how it was advantageous for Picolo *not* to be compared with other CRM vendors since they were offering something different/more. She then lists further (mostly positive) aspects about Picolo that were not surfaced in the initial assessment:

Analysts attending the briefing had been impressed with [Picolo's] knowledge of their marketplace and their understanding of software evolution...[Picolo] have a legacy of customers in the Insurance, Banking and Telco sectors both as [Picolo] and former companies. Less so in the Government sector. The client list is impressive (note circulated within UserOrg).

The analyst commented positively on their 'knowledge of the marketplace' and their 'understanding of software evolution', two of the important criteria by which Gartner rates and evaluates vendors (see Author Study 2009). She also passes comment on their impressive 'client list', which, as already mentioned, was another of the criteria by which vendors are judged. When the conversation turns to some of the more thorny issues, the analyst gives her view of the 'risk' of going with an unknown quantity:

Asked for comments about it being risky going with a company we had not previously heard of, she said that it is not necessary always to go with a big name, but the risk has to be managed. A key question is who is responsible for delivery. It was explained that [a joint venture partner] is the prime contractor and [Dr S] said we then have to ask how we will be protected by [the joint venture partner] against non-delivery (note circulated within UserOrg).

What this analyst does is bring into the frame other factors. In particular, this is the fact that Picolo is not acting alone in supplying its systems but supported by a joint venture partner organization - a large telecommunications company with a recently established software and systems integration division. It is made clear that it is the joint venture partner that is ultimately responsible for delivering a successful project. The analyst also points out that it is also in Picolo's direct interest to ensure the project is a success:

[Picolo] is still an emerging company and has to build a list of satisfied clients. [Dr S] would therefore expect them to ensure that projects were a success (note circulated within UserOrg).

Comparing this assessment with the previous one, we find that the analysts are focusing on the same vendor but coming to different conclusions. In concluding the US analyst makes a point that goes

some way to explaining these contrasting assessments. Her area of expertise is not strictly speaking CRM solutions; she specialises in ‘Business Process Outsourcing’ (BPO):

[Dr S] said that she was not a CRM specialist; Business Process Outsourcing was her speciality. It had been [Picolo’s] choice not to go into the CRM category. She emphasised, however, that [Picolo] is not a Business Process Outsourcer. They work with partners, perhaps the most significant being a recent project in Australia with EDS as the partner (note circulated within User Org).

A way to conceptualise this, perhaps, is to suggest that the analyst is not committed to the same frame as her UK colleagues. She is investigating UserOrg from a different modality. It could be argued that vendor qualities are being constituted through two different frames, and because these organise responses, they each create different kinds of problematic. Viewed through the initial ‘CRM frame’ Picolo is compared to other CRM vendors (and is seen to be replicating only what is already in the marketplace). There is the use of particular kinds of equipment and interactions (‘lists’ constituted from community engagement). The problems raised include Picolo’s absence from ‘lists’, that they are ‘not known’ to the community, there is not a complete system available, which means there is a high level of ‘risk’ involved, and so on. Alternatively, the ‘BPO frame’ appears more diffuse. It is one that includes but is not limited to CRM (there are multiple overlapping technology suppliers who have a potential claim to be involved in this area). When constituted through this frame it is recognised how Picolo is offering ‘broader services’. Here the equipment includes ‘lists’, but this time of ‘impressive clients’. The issue on which the vendor is assessed is the fact that it is backed by a significant ‘joint venture partner’. Further, the US analyst reinterprets the problems raised by the earlier analyst (unknown, risk, etc.) and concludes that these may not necessarily be reasons for concern. They could equally be understood as reasons why to *choose* Picolo.

## 6.2 Competing Frames

What does this example of competing frames tell us? It suggests that this large industry analyst organization is not a ‘unity’; there is no single Gartner-wide community. Frame building appears to be an idiosyncratic ‘craft’ (as opposed to a standardised scientific) model of knowledge making. Analysts are highly reputed individuals trading in the Gartner realm – attempting to further their own reputations (authority). Indeed, and recalling the discussion above about how analysts work not with

centralised but with *individualised pods of knowledge*, an analyst revealed that one of the main difficulties Gartner has is of getting its people to speak with one voice:

...Gartner's like a herd of cats. It's like herding cats. The different analyst groups are all very independent of each other...We work in teams, where we work very tight in the teams, so we can back each other up, and we know what each other is doing. Outside of that team, there is a bit of a consolidation but at the kind of company level it has to be driven almost top down to make us look up and say 'what is going on in your area?' And we all come to meeting where we learn about each others research areas. But is more of an kind of interesting background information. It is not going to help me do my job (interview, Gartner analyst).

Interestingly, the passage above points to the difficulties of regulating this kind of knowledge and actor. Gartner regularly attempts to establish a more corporate view but analysts are seemingly pulled in alternative directions. This perhaps explains (in part) the internal contestation that exists around understandings of new technologies. Different 'teams' continue to read developments in different ways. They have their own 'lists' and 'pods of knowledge'. Those located in different geographical locations, for instance, and specialising in the study of one or other related technologies, came to differing conclusions. To make sense of this we argue that these analysts applied a different frame to the same vendor and this produced contrasting results. It turns out that there were often 'competing frames' at play within the analyst firm. The example is telling because it shows how the technological field Gartner is attempting to shepherd is contested *internally*. What we want to do now is show how the field was also contested *externally*. This brings us to the final act where we consider how frames are 'adopted' but also how they can be 'abandoned' (Beunza and Garud 2007).

## **7 ACT FOUR: FRAME TRANSFORMATION**

### **7.1 Adopting/Abandoning a Frame**

Gartner are widely seen as the coiners of the CRM concept (Norton 2000). However, whilst it was an early player in CRM's development, it was not the originator of the term. This is identified as the work of marketing academics whom were talking and writing about the importance of 'customer relationship marketing' during the 1980s (Firth and Lawrence 2006). Gartner's interest is said to have begun in the early 1990s when they noticed a growing interest in new kinds of software. One analyst described this early involvement:

I found in...1993 Gartner created a Sales Leadership Strategy Service...And we created a Sales Leadership Strategy Service, and a Customer Services Support Strategy, and an NKT service to focus on the marketing director. And that was between 93 and 95. So we were quite early in looking at the technologies for sales marketing, customer services completely separately. Then with about you know probably only 2 or 3 analysts in each team....That is amazingly early from a Gartner perspective. It was about 93, 95 we set up those services. I think only about 96, 97 we decided to put them together into a common group (interview, Gartner analyst).

Once this emerging field was identified (and in keeping with its practice of performing naming interventions) Gartner set about *re-designating* it. Even though already widely identified as *Customer Relationship Management* the analyst firm attempted to re-label the field as *Technology Enabled Relationship Management*:

And around about, just after maybe 98 or probably 98, I guess, 98, 99, [Gartner] came up with the term 'TERM'. Because [Gartner] said it's '*Technology Enabled Relationship Management*'. So we were pointing out that we're only going to look at technology not the strategy aspects of it. Our job is to look at the technologies that companies use. So they put the three teams together under one bucket called 'TERM' (interview, Gartner analyst).

Recalling the logic behind this new terminology, the analyst notes how the existing designation was founded on an interest in the 'strategic' aspects related to customer relationships (the interests of its academic founders). Gartner's proposed name instead was said to reflect an interest in purely the 'technologies' of CRM. This naming intervention did not enjoy the same kinds of success as earlier ones (the ERP terminology, around this period, was just reaching the heights of its popularity). Whilst Gartner attempted to extend the notion amongst their industry contacts, using all of its organizational apparatus and community networks, the name simply failed to 'ignite':

What we were defining as TERM was what most people would understand as CRM today. But nobody bought into the term TERM. It just didn't catch. It didn't ignite with people ... In effect, the industry itself decided it was CRM. That was the term they were going to use. So it was one of these, it comes to a point when it is no good pushing against the tide. Even though technically we were more accurate; it didn't matter (interview, Gartner analyst).

The analyst puts it quite starkly stating how the notion 'went down like a lead balloon' with the rest of the industry. Had the term been constitutive? Had it affected how vendors labelled their products? The analyst was certain that it had not:

No, not really. There might have been the odd one using it in their literature but they weren't saying 'we are a TERM vendor'. It didn't work. It never took off (interview, Gartner analyst).

The result was that Gartner was forced to abandon the term TERM:

We [Gartner] probably killed that in about 2000. It lasted probably only about a year, a year and a half, between about 99 and 2000 (interview, Gartner analyst).

What, if anything, does this failure tell us? It is a demonstration of the contingency surrounding the work of a powerful market actor. The industry analyst Gartner plays a crucial role in mobilising consensus around emerging technological fields. But this example shows however that it is not able to impose its view. Even the seemingly most influential of industry analysts can still fail to mobilise others around its vision of the world. We labour this point because we think it significant in terms of the shaping of a major organizational technology. We speculate that Gartner's failure to impose its frame had important consequences for this solution: CRM has not seen the same kinds of stability that one finds in earlier fields (like ERP). The biography of CRM appears to be different and perhaps more diffuse because of this.

## 7.2 Result of Abandoning: Increase in Ambiguity?

Shortly after the turn of the century, CRM technology had begun to resemble the 'organizing visions' described by Swanson and Ramiller (1997). The notion was being pulled in many different directions by various players. A Gartner analyst notes some of the transformations that CRM has experienced:

CRM has been called customer interaction management, technology-enabled relationship management, enterprise relationship management, demand chain management and customer value management (Maoz 2001).

During this period, one of the only things that commentators appeared to be able to agree on was the level of confusion that had now developed around the technology. A Gartner analyst interviewed in the practitioner press makes the following point:

Well, I think the people that are confused are analysts, journalists, vendors and, perhaps, consultants. I don't think the organizations that are involved are that confused about what they're trying to do. I've called it the 'flag-of-convenience' problem, in that they have a name for the program, the project, the initiative, the 'whatever they call it', internally. And, the term 'CRM' lost its shine in about 2001, so they renamed it in many cases, or they shut it down or repackaged it or refocused it, whatever (Thompson 2004).

Here the analyst points to how CRM has become nothing but a 'flag of convenience' – a term that could be 'shut down', 'repackaged' or 'refocused' depending on a player's interests and circumstances. Interestingly, despite their loosening grip on the field, this does not prevent Gartner from making periodic attempts to make further interventions. During the period, pushed by the apparent disaccord, but also the fact CRM was caught up in the fallout surrounding the bursting of the

dot.com bubble, Gartner continued to set up meetings with the idea of getting the major players to agree a new name:

It is interesting, around 2001, we talked to companies. We were talking about CRM strategies to people and they were saying: 'We would rather call it customer strategy supported by CRM technology'. So around 2001, when it got discredited with the 'bust', in 2001, 2003, there were a lot of companies saying that they don't want to call it CRM anymore. In fact, we had meetings with all the major integrators, consultancies to say: 'Shall we come up with a new term?'. The problem was nobody could agree a term. Everybody tries to fragment in different directions. So it never, CRM ended up having this double meaning: it means something to do with business strategy...which is the original meaning; and it means to do with the technology. So it has this, it is confusing to people... (interview, Gartner analyst).

What this suggests is that the framing capacities of industry analysts change over time. Despite its organizational machinery and extensive community connections, Gartner were seemingly unable to get the players to agree a common term. Thus they move from a rather rigid position to a more encompassing and open one. As a result, a certain amount of disorganization becomes evident in the sector. Indeed one analyst interviewed in the practitioner press describes how he advocates, when talking to clients, that they should now develop their *own* understanding of the term:

About 1998 Gartner sat down and wrote a big definition, which starts with the word, 'CRM', and defines it specifically as a business strategy, and we've stuck with that definition now for about—well, ever since '98. But, since 2002, our message has been pretty straightforward, which is: Ignore our definition of CRM, and in fact, ignore everybody else's definition of CRM and come up with your own definition....In fact, something we're doing right this moment is questioning not the definition of CRM but whether the term "CRM," itself, should still be used. And, we're wondering whether it's finally coming to an end as a useful acronym. Gartner had TERM up till about '99. And, since then, we've stuck with the industry phrase of CRM (Thompson 2004).

We have argued that the knowledge frame industry analysts apply to an area of activity allows them to inform and regulate the various goings on in that area. However, the frame that appeared applicable back in '1998' now no longer seemed to apply. Where at the beginning of the century Gartner was attempting to regulate the offerings of vendors, it had, just a few years later, as one analyst pointed out, become 'less dogmatic than [it was] were back in 98'. Gartner appears no longer to be the sole actor attempting to shepherd this particular field.

To summarise this section, what we have shown is that the industry analyst firm studied was not able to impose its view on the CRM field in the same way it had done in earlier years. CRM was now being understood and interpreted in many different ways (in this respect the work of Swanson and Ramiller [1997] shows itself still to be highly relevant). However, whereas these scholars suggest that (a certain amount of) ambiguity can aide the proliferation of a new name, we would argue that it is precisely this



ambiguity that industry analysts are attempting to police. If a technological field cannot be defined then it becomes difficult to regulate vendors within it. Thus, the increase in ambiguity meant that Gartner was forced to modify its position – or, in other words, to ‘break frame’ (Goffman 1974).

## 8 DISCUSSION

We join scholars interested in making sense of the abundance of new terminologies that continue to proliferate within the information technology domain (Swanson and Ramiller 1997, Wang 2009). Our particular entrance point has been to note the way certain standard and stable designations emerge and come to be applied to broadly similar, or, in some cases, differing set of artefacts. A more or less similar collection of rapidly evolving artefacts can be given common nomenclatures that then go on to endure for prolonged periods of time. We have sought to answer the question as to *who decides* whether or not a particular vendor technology is part of a wider terminology. Who, in other words, decides the boundaries around different nomenclatures? We have pointed to the effort of the ‘knowledge institutions of information technology’ (Abrahamson and Fairchild 2001, Wang and Swanson 2007, 2008, Swanson 2010) that shepherd the consensus around new and emerging technological fields. This is in particular the role of industry analysts – and specifically of Gartner Inc. – who appear to play a role in deciding not only a name but also the interpretation of that designation. Below we outline the various ways in which they do this (i-vii).

The firm of industry analysts studied is most well known for its *(i) naming interventions*. The designation of a technological field of activity is not trivial. If successful, such interventions can go on to provide crucial resources *and* constraints within which vendors and management and technology consultants’ articulate offerings. We have drawn on the ‘communitarian’ perspective to how new concepts achieve wide currency in a process catalysed through the activities of certain key players – in the case of Customer Relationship Management (CRM), notably vendors, consultants and industry analysts – but also ultimately sustained by the activities of wider communities of organizational users and others (Swanson and Ramiller 1997, Wang and Ramiller 2009, Wang 2009, Swanson 2010). Naming interventions can reduce uncertainty for adopters and developers alike. The establishment of a new field draws boundaries around a set of artefacts and their suppliers and thereby create a space in

which some sorting and ranking may be possible. This often paves the way for a comparative analysis by adopters of the relative advantages of particular offerings for their specific organization. Clustering new kinds of offerings together may also serve to reinforce expectations about what functionality should be included and where the technology will go in the future. This also allows vendors to assess their products, their promotion and enhancement in relation to the features of broadly comparable products and their likely future development trajectories (in some case differentiating their offering).

However, just as a name can include it can easily become a 'barrier' - something that 'prevents' and 'constrains'. This can generate controversy, especially amongst those that become marginalised by it. Industry analysts can be seen to police the boundaries that they and others have previously set out through performing various kinds of (ii) *categorization work*, where they are able to say whether or not a particular vendor solution is part of a technological field. They can do this because, as the work on 'critics' informs us, they view the world through 'product classifications' (Zuckerman 1999). in this view vendors that fall outside this lens "are penalized not simply because they raise information costs for consumers but because the social boundaries that divide product classes limit the consideration of such offerings" (*ibid.*, 1404). This perspective usefully flags how the IT innovation community (Wang and Ramiller 2009) is not an entirely open and equal community as there are forms of knowledge that actors are forced to take into account but which they are not necessarily able to shape (cf. Adler and Heckscher 2006).

We have also made use of the 'finitist' argument that categorization is not straightforward but involves 'a decision'. Reaching a decision can lead to various forms of 'contestation' and, as Barnes *et al.* (1996) suggest, experts can often categorize the same object in contrasting ways. We saw how the seemingly novel technology produced by one newcomer was problematised and then with how, in turn, it disputed the negative reviews it received (going as far as to call into question the industry analyst firm's research process). The newcomer appeared to fall between different 'frames' within the same industry analyst firm, each of which brought different problematics and qualities to the surface. This was damaging for the vendor's immediate and longer-term future: it not only lost out in the procurement contest described here but it also, as far as we know, has not been able to enter this

specific geographical and sectoral specific market; nor does it continue to position itself in the same way in relation to other CRM vendors. (Even though it was at odds with how the industry analyst firm (and others) conceived of CRM it has since come into line with the prevailing definition).

One other issue we raise with regard to the critics perspective is the suggestion that it is ‘social’ boundaries that limit the consideration of particular vendors. Zuckerman (1999) suggests that actors employ categories to *interpret* the offers set before them. Yet we are frankly sceptical that, by themselves, product terminologies can perform this role (particularly, as we learn from the finitist analysis, there can be much complexity and confusion surrounding classifications). Something else must be enabling these screening processes. One reason why the work of industry analyst is ‘authoritative’ is that their frames are shot through with various forms of (iii) *intellectual and material equipment*. The particular equipment we observed during fieldwork was ‘lists’. We might go as far as to suggest that one of the prime roles of industry analysts is filling out emerging technological fields with lists of varying description. List making appears to be rife within industry analysts firms. In all of the Gartner presentations and workshops that we attended the audience was treated to various kinds of lists: lists ‘of cool vendors’, ‘of the priorities of Chief Information Officers’, ‘of the various kinds of functionality found in systems’, ‘of ranked vendors’, etc. (see Bowker and Star [1994] for the importance of list making). Moreover, lists turn out to be particularly effective in sorting vendors. Whether or not someone appears on a list is (generally) not thought to be a matter for interpretation. A vendor’s absence from a list can have an effect even if people disagree about the accuracy of associated categorization process (Author Study 2007).

A further reason the work of industry analysts has influence is that, when necessary, they will vigorously (iv) *defend their frame*. It is here our paper adds (in some small way) to Beunza and Garud (2007). Industry analysts are not only frame builders but they have established ways to evidence and shore up their boundary work (meaning they are ‘frame defenders’). Indeed when making claims and interacting with clients we found there to be different modalities at play: they were times when industry analysts sought to signal quite clearly to adopters their (often critical) assessment of specific vendors, as well as contexts in which they were less candid as they sought to protect and shield

themselves. This was because, attached to recommendations, was the issue of liability and responsibility. Industry analysts need to make their views accountable – in terms of presenting them as the result of systematic process and in being able to defend their judgements. The principal ways in which industry analysts appeared to do this was through commensuration as well as by pointing to the provenance of assessments. Commensuration appears to provide industry analysts with a means to smooth away possible contestation (Espeland and Stevens 1998). The literature on product classifications suggests that placing a vendor in the context of others is an attempt to weaken its claim that its offerings are novel (Kennedy 2008). It is through comparing the offerings of different vendors that it seemingly becomes ‘obvious’ to everyone how things really stand. As for the provenance of their views, industry analysts claim that assessments are developed out of their many interactions with their client base. They rely on the testimony of these wider communities of users and decision makers. It is not *them* casting aspersions, they are simply reporting back (and aggregating) what their clients are reportedly telling them. In this respect, we might consider that the frames of industry analysts depend on these kinds of interactions. In other words, that they are *(v) entangled with wider communities of users*.

Another way of capturing all these various points (i-v) is to say that new terminologies are often coupled to the practices, artefacts and communities of those who produce them (Hyysalo 2006). This attempts to capture the role these market experts play in shepherding terms but also how they are simultaneously attempting to realise and regulate the various boundaries proposed by the designations they and others deploy.

We have also been careful to draw attention to the limits on how industry analysts proceed. These actors *have* become highly influential in drawing the boundaries around technologies but they are *not* able to impose their view. This was best exemplified, internally, when we saw how two teams of analysts failed to agree on the nature of the vendor technology they were both examining and then, externally, when the analyst firm was not able to convince others of the merits of a particular terminology (‘Technology Enabled Relationship Management’). This evidences how industry analysts have limits in relation to their capacity to organise and speak about the events they come across. These

experts are attempting to organise the consensus surrounding a technological field. It should perhaps be no surprise that they come across areas where the boundaries have already been drawn (or have been drawn differently to the ones they are proposing). When this happens, the industry analysts may *break frame* (Goffman 1974). In other words, these (vi) *experts do not always stick to their frame*. This contradicts Beunza and Garud's (2007) suggestion that, once committed, analysts necessarily persevere with a position because to do otherwise would seemingly bring into question their credibility. However, our fieldwork suggests that this may not be the only element here. Industry analyst firms recognise (and will at times openly acknowledge) 'misframings'. In other words, they are not afraid to withdraw a term that is competing against an incumbent terminology, especially if it appears only to be adding further confusion.

We also suggest that (vii) the *framing capacities of industry analysts may change over time*. When Gartner coined the notion of Enterprise Resource Planning (ERP) back in 1990, for instance, the firm had already been in existence for more than a decade. Whilst it had a number of rivals (Computer Intelligence, Dataquest, IDC, Input and Yankee were all well established by then) it had managed to develop the cognitive authority to make this important naming intervention. Few other organizations at the time could mobilise the organizational machinery and community connections necessary to draw and maintain the boundaries around a new technological field of activity. Ten years later, however, during the period when CRM was taking off, Gartner found itself competing with many other industry experts. Today, there is a large active body of industry experts and consultants writing, blogging, and selling ideas about technology. It appears that not only has a market for this form of boundary work been created but that competition between various intermediaries has helped foster the ambiguity that we now find surrounding discussions of CRM. Since no one player dominates this means that all attempts to define the particular technological field may have an effect.

## 8.1 Further Research

We conclude by calling for increased attention to the knowledge institutions of information technology (Abrahamson and Fairchild 2001, Wang and Swanson 2007, 2008, Swanson 2010). Through their appearance, we have seen a shift from a relatively simple market of ideas to a more

organised and structured one. Industry analysts play a crucial role in shaping technological fields. Their work may have immediate consequences for technology vendors and more broadly for the direction and pace of innovation within the wider IT arena. One implication of their work, not particularly emphasised in the present paper, is that it may stifle novelty. Vendors who offer something different may find their products do not conform to standard product definitions and thus may fall between classification schemes (and be problematized). This conjecture alone deserves further attention. Furthermore, we speculate that in a context of accelerating technological innovation, that gives new challenges and uncertainties to potential innovators or adopters, and where the normal processes of decision-making are deemed to be inadequate, there will be a growing number of experts of various types attempting to shape emerging technological fields. Clearly not all these actors will influence innovation in the same way or to the same extent; only a small number will produce terms able to designate actual fields; only some will be in a position to categorize vendor technologies. However, there is a need for IS scholars to develop the analytical tools and frameworks to allow researchers to carry out a systematic and sophisticated study of their influence. Our research also suggests we may need to address a possible spectrum of knowledge institutions with, at one end of the scale, powerful bodies such as the industry analyst firm described here, which explicitly sees itself as organising and shepherding technological fields, whilst at the other end actors and organizations that may be less central and may not necessarily even recognise their role as such. We have produced a study covering one part of the spectrum, where one group has managed to command the centre of attention, but there are many other kinds of organization and actor deserving of study. The recent upsurge of ‘technology bloggers’, for instance, is particularly pertinent in this latter respect (Davidson and Vaast 2009).

## References

- Adler, P. S., & Heckscher, C. (2006). Towards collaborative community in C. Heckscher & P. S. Adler (eds.), *The firm as a collaborative community: Reconstructing trust in the knowledge economy*: 11–106. New York: Oxford University Press.
- Abrahamson, E. & Fairchild, G. (2001). Knowledge industries and idea entrepreneurs: New dimensions of innovative products, services, and organizations. In C. B. Schoonhoven and E. Romanelli (Eds.), *The Entrepreneurship Dynamic: Origins of Entrepreneurship and the Evolution of Industries*: 147–177. Stanford, CA: Stanford University Press.

- Barnes, B., Bloor, D., & Henry, J. (1996). *Scientific Knowledge: A Sociological Analysis* (London: Athlone Press).
- Baskerville, R. & Myers, M. (2009). Fashion Waves in Information Systems Research and Practice, *MIS Quarterly*, (33)4, 647-662.
- Beunza D., & Garud, R. (2007). Calculators, Lemmings or Frame-makers? The Intermediary Role of Securities Analysts in M.Callon, Y.Millo and F.Muniesa (eds) *Market Devices*, Oxford: Blackwell Publishing.
- Bond, B., Genovese, Y., Miklovic, D., Zrimsek, B. & Rayner, N. (2000). ERP is Dead – Long Live ERP II, Gartner Group Research Note, RAS Services (October) 4.
- Bowker, G. & Star, S. (1999). *Sorting Things Out: Classification and its Consequences*, Cambridge, Massachusetts: MIT Press.
- Burks, T. (2006). Use of Information Technology Research Organizations as Innovation Support and Decision Making Tools, Proceedings of the 2006 Southern Association for Information Systems Conference.
- Callon, Michel (1998). An Essay on Framing and Overflowing' in M. Callon (ed.), *The Laws of the Markets* (Oxford: Blackwell): 244-69.
- Callon, Michel (2007). What Does it Mean to Say that Economics is Performative? in D. MacKenzie, F. Muniesa & L. Siu (eds), *On the Performativity of Economics: Do Economists Make Markets*, Princeton: Princeton University Press: 311-57.
- Callon, M., C. Meadel & V. Rabeharisoa (2002). The Economy of Qualities, *Economy & Society*, 32, 194-217.
- Currie, W. (2004). The Organizing Vision of Application Service Provision: A Process-oriented Analysis, *Information and Organization*, 14 (4), 237–267
- Davidson, E. & Vaast E. (2009). Tech Talk: An Investigation of Blogging in Technology Innovation and Discourse, *IEEE Transactions on Professional Communication*, (52), 1, March.
- Drobik, A. (2010). Getting Gartner: How to Understand What We Are Talking About, Presentation Given to the Customer Relationship Management Summit, London, 16th March.
- Espeland, W. & Stevens, M. (1998). Commensuration as a Process, *Annual Review of Sociology*, 24, 313-43.
- Feldman, M. (1995). *Strategies for Interpreting Qualitative Data*, Sage, London, UK.
- Firth, D. & Lawrence, C. (2006). An Institutional Perspective on Customer Relationship Management, *Journal of Information Technology Theory and Application*, (8)1, 21-31.
- Firth, D & Swanson, E (2005). How Useful are IT Research and Analysis Services?, *Business Horizons*, 48(2), 151-59.
- Flichy, P. (2007). *Understanding Technological Innovation: A Socio-Technical Approach*, Edward Elgar, Cheltenham, UK.
- Gartner (no date). Vendor Briefings, [http://www.gartner.com/it/about/vendor\\_briefings.jsp](http://www.gartner.com/it/about/vendor_briefings.jsp) (downloaded 10th May 2010).
- Gartner (2001). Top Ten Trends in CRM for 2001, Posted on December 14, 2000, <http://www.gartner.com/webletter/nortel/article1.html> (downloaded 19th May 2010).
- Gieryn, T. (1999). *Cultural Boundaries of Science: Credibility on the Line*. Chicago: University of Chicago Press.
- Glaser, B. and A. Strauss. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago, Aldine Publishing Company.
- Goffman E. (1974). *Frame Analysis: An Essay on the Organization of the Experience*. New York: Harper Colophon.
- Heusinkveld, S. & Benders, J. (2005). Contested Commodification: Consultancies and Their Struggle With New Concept Development, *Human Relations*, 58 (3), 283-310.
- Hyysalo, S. (2006). Representations of Use and Practice-Bound Imaginaries in Automating the Safety of the Elderly, *Social Studies of Science*, 36(4), 599–626.
- Judd, M. (2006). Open and flexible, *Internal Auditing and Business Risk*, June: 34-8.
- Kennedy, M (2008). Getting Counted: Markets, Media, and Reality, *American Sociological Review*, 73, 270-295.

- Lounsbury, M. & Rao, H. (2004). Sources of Durability and Change in Market Classifications: A Study of the Reconstitution of Product Categories in the American Mutual Fund Industry, 1944–1985, *Social Forces*, 82(3), 969-99.
- Leysdon, A. & Thrift, N. (1999). Lists Come Alive: Electronic Systems of Knowledge and the Rise of Credit-scoring in Retail Banking, *Economy and Society* 28, 434-466.
- Mabert, V., Soni, A. & Venkataramanan, M. (2001). Enterprise Resource Planning: Common Myths Versus Evolving Reality, *Business Horizons*, May-June: 69-76.
- MacKenzie, D. (2006). *An Engine, Not a Camera: How Financial Models Shape Markets*, Cambridge, MA: MIT Press.
- MacKenzie, D. (2009). *Material Markets: How Economic Agents are Constructed*, Oxford: Oxford University Press.
- Maoz, M. (2001). CRM: What's Right for Customers Is the Correct Approach, Gartner Research Document ID Number: AV-14-0605.
- Meissner, G. (2000). *SAP: Inside the Secret Software Power*, London/New York: McGraw-Hill.
- Mulkay, M.J. (1976). Norms and Ideology in Science, *Social Science Information*, 15: 637-56.
- Norton, D. (2000). The Latest Acronyms Will Keep You Up On CRM, *Tech Republic*, [http://articles.techrepublic.com.com/5100-10878\\_11-5030192.html](http://articles.techrepublic.com.com/5100-10878_11-5030192.html) (downloaded 21st April 2009).
- Pairat, R. & Jungthirapanich, C. (2005). A Chronological Review of ERP Research: An Analysis of ERP Inception, Evolution, and Direction, Engineering Management Conference, 11–13 September, 1: 288–92.
- Pontikes, E. (2008). Fitting in or Starting New? An Analysis of Invention, Constraint, and the Emergence of New Categories in the Software Industry, Working Paper.
- Ramiller, N. & Swanson, E. (2003). Organizing Visions for Information Technology and the Information Systems Executive Response, *Journal of Management Information Systems*, 20(1), 13-50.
- Rao, H., Monin, P. & Durand, R. (2005). Border Crossings: Bricolage and the Erosion of Category Boundaries in French Gastronomy, *American Sociological Review*, 70, 968–991.
- Rosa, J., Porac, J., Runser-Spanjol, J. & Saxon M. (1999). Sociocognitive Dynamics in a Product Market, *The Journal of Marketing*, 63, 64-77.
- Rosa, J., Judson, K. & Porac, J. (2003). On the Sociocognitive Dynamics Between Categories and Product Models in Mature Markets, *Journal of Business Research*, 58, 62-69.
- SAP (no date). SAP History: From Start-Up Software Vendor to Global Market Leader, Available online: <http://www.sap.com/company/history.epx> (downloaded 23 May 2007).
- Star, S. & Bowker, G. (2007). Enacting Silence: Residual Categories as a Challenge for Ethics, Information Systems, and Communication, *Ethics and Information Technology*, 9, 273-280.
- Suddaby R. & Greenwood, R., (2001). Colonizing knowledge: commodification as a dynamic of jurisdictional expansion in professional service firms, *Human Relations*, 54(7), 933–953.
- Swan, J., Scarbrough, H. and Robertson, H. (2003). Knowledge, Networking and Innovation: A Process View in L.V. Shavinina (ed.) *International Handbook of Innovation*, London: Elsevier Science.
- Swanson, E.B. (2010). Consultancies and Capabilities in Innovating with IT, *Journal of Strategic Information Systems*, 19, 17-27.
- Swanson, E.B. & Ramiller, N.C. (1997). The Organizing Vision in Information Systems Innovation, *Organization Science*, 8(5), 458-74.
- Thompson, B. (2004). The Reports of CRM Failure Are Highly Exaggerated: An Interview With Gartner's Ed Thompson, *Customer Think*, 7<sup>th</sup> December, [http://www.customerthink.com/interview/reports\\_crm\\_failure\\_highly\\_exaggerated](http://www.customerthink.com/interview/reports_crm_failure_highly_exaggerated) (downloaded 18th August 2008).
- Wang, P. (2009). Popular Concepts beyond Organizations: Exploring New Dimensions of Information Technology Innovations, *Journal of the Association for Information Systems*, 10(1), 1-30.
- Wang, P. & Ramiller, N. (2009). Community Learning in Information Technology Innovation, *MIS Quarterly*, 33(4), 709-734.
- Wang, P. & Swanson, E.B. (2007). Launching Professional Services Automation: Institutional Entrepreneurship for Information Technology Innovations, *Information and Organization*, 17, 59-88.
- Wang, P. & Swanson, E.B. (2008). Customer Relationship Management as Advertised: Exploiting and Sustaining Technological Momentum, *Information Technology & People*, 21(4), 323-349.



- Webster, J (1993). Chicken or Egg? The Interaction Between Manufacturing Technologies and Paradigms of Work Organization, *International Journal of Human Factors in Manufacturing*, 3(1), 53–67.
- Wylie, L. (1990). A Vision of the Next-Generation MRP II Computer Integrated Manufacturing, Scenario S-300-339, Gartner Group, 12 April.
- Zuckerman, E. (1999). The Categorical Imperative: Securities Analysts and the Illegitimacy of Discount, *American Journal of Sociology*, 104, 1398-1438.