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# Constructing IT Markets: How Industry Analysis Organise Technological Fields

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# CONSTRUCTING IT MARKETS: HOW INDUSTRY ANALYSIS ORGANISE TECHNOLOGICAL FIELDS

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## Abstract

This paper considers how specialist forms of consultants classify and organise new and emerging technology markets. It demonstrates how industry analysts and IT research firms have taken centre stage in the IT procurement market where they draw up signposts about the state of the industry and its future development – what we are describing as a ‘technological field’. Through discussing the emergence of a now well established technology – what has become widely known as Customer Relationship Management solutions - we show how these experts define the boundaries of a technological field. This article points to the process of categorisation applied to emerging artefacts and asks the question: What is at stake in these classifications and reclassifications? The classification of a technology is far from trivial. It proposes boundaries that link a class of often quite various artefacts whilst differentiating them from others. These categories do not simply allow industry analysts to order (and represent) the market/technology but also shape it. Analysts view and constitute markets through its various classifications. We show how this has both positive and negative consequences for technology adopters and software vendors alike. In doing so we draw (as well as build) on the notion from Information Systems (IS) research of ‘organizing vision’ developed by Swanson & Ramiller (1997) as well as recent scholarship within Economic Sociology on ‘product classifications’. The material for this paper was gathered in two related phases: during an ethnographic study of a local authority and its attempts to procure a new packaged software solution; and is part of an ongoing investigation into the nature and practice of industry analysts.

**Keywords:** CRM, Gartner, Technological Fields, Classifications, Organizing Visions

## 1 INTRODUCTION: WHAT’S IN A NAME?

What’s in a name? The question expresses succinctly the challenge facing the adopters of information technologies (IT) and systems. More so than other industries perhaps, the IT sector is typified by accelerated rates of technical change involving the constant development and proliferation of new solutions onto the market. The differences between technologies can often seem rather amorphous to a computer systems user considering between solutions. One only has to look back at the recent history of information systems development to see a field dominated principally by processes of incremental development (as well as conceptions of their business application), which is only occasionally punctuated by more radical changes, with discontinuities often loosely associated with changes in terminology (MRP, MRPII, ERP, ERPII and more recently CRM, eCRM to list but a few). However, the name applied to a technology is far from trivial. It proposes boundaries that links a class of often quite various artefacts whilst differentiating them from others. As we shall see, the designation of a technology field reduces uncertainty for adopters and for developers alike but also shapes the technology and domain in important ways.

What’s in a name? This question also points to the fact that there are few things as basic or as important to Information Systems (IS) research as tracking and understanding the birth and evolution of new technological fields. In asking the question, we foreground analysis not simply of individual technologies but of the wider class of system to which these technologies belong. Contemporary IS research appears to have recently become preoccupied with micro-level studies of local and immediate social relations at

the expense of understandings of the broader technological field and its complex couplings with social institutions, actors and practices. This paper is part of a research programme on the Social Study of the IT Marketplace attempting to investigate the micro, meso and macro contexts in which today's packaged solutions are located, capturing the various actors who play a role in constituting systems and markets at different levels (Pollock & Williams, 2007, 2009 a,b).

Our analysis starts with reference to previous approaches that broadly share our aims – in particular Swanson & Ramiller's (1997) conception that new technological fields emerge through the proliferation of 'community discourses' or what they characterise more generally as 'organizing visions'. As they see it, a new terminology, or organisation vision, develops not in the hands of one single actor but many different 'story tellers' who go on to "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" (Swanson & Ramiller, 1997, 463). As a result and by necessity, these names and the understandings surrounding them "changes and grows over time in the re-telling, as the community finds its way" (Swanson & Ramiller, 1997, 463). Whilst we find this perspective useful, we also wish to extend and deepen it in a number of ways.

First, arguing that the establishment of new technological fields should not be limited to studying just communitarian forms of activities and how actors 'flexibly interpret' emerging developments. It appears that specific regimes of expertise also play a crucial role in the constitution and evolution of new technological fields, such as specialist forms of consultants and industry analysts (actors acknowledged as skilled and competent in the particular task of assessing the value and import of new technologies - see Mallach [1997]; Ramiller & Swanson [2003]; Firth & Swanson [2005]; Burks [2006]; Pollock & Williams [2009b]).

Second, in doing this, we also show the variety of tools and practices such experts deploy whilst constituting the market of technology artefacts. Names are not simply discourses but contain various intellectual and material 'equipment' (MacKenzie 2009) that must also be brought into the analysis if we are to understand what's at stake in these kinds of terminologies. What's *in* a name, it seems, is just as important as the work a name does.

Third, what this more material (rather than interpretive) reading also suggests is that emerging terminologies are more robust than previously thought (whilst discourses are quite fragile the various equipment described here tend to endure and names may thus become institutionalised). The fact that terminologies are robust suggests that they are not easily abandoned but actively compete with other and perhaps newer conceptualisations.

Fourth, the name of a particular technology is a site in which economic interests and technological commitments are at play and are being played out. Names can thus be a site of conflict and struggle as well as negotiation and alignment. What is at stake in these classifications and reclassifications?

We analyse the ideas and visions produced by industry analysts as their attempt to constitute new 'technological fields'<sup>27</sup>. Through discussing the constitution of one particular technological field, what has become widely known as 'Customer Relationship Management' (CRM) solutions, we show how these concepts and broader visions provide crucial resources within which vendors and management and technology consultants can articulate their offerings. In particular, we focus on how industry analysts 'classify' a market/technology. These categories not only allow industry analysts to order (and represent) the technological field but also shape it. Analysts view and constitute technologies/markets

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27 By technological field we mean those technologies that become identified under the umbrella of one terminology. That is, the same terminology is applied to a class of broadly similar, or, in some cases, different artefacts. We prefer the term technological field over organisational vision because it points to the process of categorisation applied to emerging artefacts and the different understandings that exist (at least initially) between broadly similar artefacts.

through their various classifications. We show how this has both positive and negative consequences for technology adopters and software vendors alike. The material presented is based on two related periods of fieldwork. These were ethnographic observation and interviews conducted over a one-year period between 2000 and 2001 at a local council in the UK. The precise period discussed is when Gartner were offering advice to the council during its attempts to select between various CRM solutions. This material has been supplemented with more recent research and interviews that are part of an ongoing study into the workings and practices of industry analysts (see Pollok 2009b).

## **2 STUDYING NEW TECHNOLOGICAL FIELDS**

Names matter. The labels given to technologies refer often not to specific homogeneous artefacts but to a more or less heterogeneous collection of artefacts (software, management techniques) which link a community (or, rather, several overlapping communities) of suppliers, intermediaries and adopters. Moreover, it is instructive to focus on the discontinuities and changes in designation. These do not reflect solely 'technical changes', though they are often associated with changes in the underlying technical architecture. To take one now well known example, the key event in the evolution of ERP from its predecessor, MRPII, for instance, was the 1992 launch of its R/3 product based upon client server technology (Pollock & Williams 2009a). With this technology, we find an interesting pattern of linkages between classes of technology/their nomenclature and managerial prescriptions of best practice and broader visions of business improvement. We can observe stable linkages, for example, between ERP and the idea of process improvement. We can also find instances in which looser, more opportunistic and ephemeral couplings are made (between JIT and CAPM or between ERP and e-business).

We note the longer-term intertwining of more general conceptions of technology and organisation; above all regarding the evolving concepts on the one hand of information integration and on the other of process integration. Thus, we found the linking of the idea of the flexible customer-oriented firm and CAPM and broader visions of Computer Integrated Manufacture (Webster and Williams 1993) and again today linking ERP systems and BPR.

Clearly, it is software suppliers who exercise particular influence over these changing prescriptions but, as we want to show, other forms of expertise - management consultants and latterly, commentators and industry analysts, as coordinators of community expectation – also play a role.

### **2.1 Organizing Visions**

Some of the issues we describe here have partially been addressed by Swanson & Ramiller (1997) who discuss the new 'buzzwords' and 'proclamations' surrounding new information technologies. Such terminologies, or what they describe more pithily as 'organizing visions', promote the promise of a particular technology whilst also conveying a strong message about the desirability and indeed, perhaps, the inevitability of following particular technological pathways.

Swanson and Ramiller (1997: 460) define an organizing vision as "a focal community idea for the application of IT in organizations". What interests us about their notion (and a point we wish to take issue with) is how for Swanson & Ramiller organizational visions appear to be both flexible and precarious. Organisational visions are discourses that evolve and change as they are interpreted differently by various communities: "The organizing vision is developed by many different story tellers, 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 grow over time in the re-telling, as the community finds its way" (Swanson & Ramiller, 1997, 463).

There is the suggestion that organizational visions are shaped equally within a community: "The establishment and maintenance of the discourse is, accordingly, negotiated within the community" (Swanson & Ramiller, 1997, 462). This community view can be seen most clearly in a discussion of CRM:

Conceived in the community of organizations interested in an information technology, an IT innovation concept is a community *idea* about the development and utilization of the IT. For example, 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).

This conception leads Swanson & Ramiller to focus almost exclusively on the diversity of visions (i.e., how they are pulled in different directions, interpreted in varying ways).

We agree that the arena in which technological designation names are discussed and debated is made up of a diffuse and plural array of players. However, it is not an open and equal community – in the way in which we might conceive of scientific communities operating under the Mertonian ideal, for example. Its internal structure comprises not just peer-like communities of practice (à la Wenger 1998), but also communities of (often conflicting) interest. It is characterised by asymmetries and entrenched conflicts as well as alignments of interest. Criticisms have been advanced of the failure of community of practice theory to develop an adequate analysis of power, ideology and conflict, particularly in inter-organisational settings and despite its initial recognition that these were potentially important (Fox 2000; Roberts 2006).

In other words, their view backgrounds the role of certain key actors who actively play a role in the shaping and development of visions and thus of the technologies they are connected to. What we want to show is that certain actors play an active role in the construction, maintenance and reshaping of organizational visions.

We also challenge the idea that organisational visions are simply ‘discourses’ or only ‘linguistically manifested’. “To begin with, an organizing vision exists because a collection of social actors agrees that it exists. This agreement is linguistically manifested: simply put, the actors find it possible to engage in discourse about organizing vision” (Swanson & Ramiller, 1997, 462).

## 2.2 Product Classifications

Both these aspects are nicely illustrated in an example taken from Economic Sociology and the discussion of ‘market critics’ and ‘product categories’. In his study of financial analysts Ezra Zuckerman (1999, 1399) argues that vendors must offer products that conform to accepted product categories “lest such offerings be screened out of consideration as incomparable to others”. Offering products that differ from accepted categories means such vendors are then viewed as ‘illegitimate’: “in interorganizational relations, and in markets more generally, unclassifiable actors and objects suffer social penalties because they threaten reigning interpretive frameworks” (Zuckerman, 1999, 1399). He goes on to argue that “For a product to compete in any market, it must be viewed by the relevant buying public as a player in the product categories in which it seeks to compete. In the case of mediated markets, this requires reviews from the critics who follow these categories. In the specific instance of the stock market, a firm seeks coverage from the analysts who follow the industries in which it participates. I have shown that success or failure at gaining such recognition has a significant impact on a firm’s fate in financial markets. All other things held equal, firms that cultivate an ego-centric network of reviews to securities analysts that reflects its industrial participation are more highly valued than those that do not” (Zuckerman, 1999, 1429).

The upshot of this line of thinking is that such are the pressures to ‘get counted’ (Kennedy 2008) there are various isomorphic pressures. “Consumers first screen out illegitimate options, and only then do they perform something akin to rational choice among legitimate alternatives. Second, the screen is a *social screen*, not designed by the actor but external to her, given in the categories that comprise market structure. Products that deviate from accepted categories 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” (Zuckerman, 1404, 1999).

The key issue here is that “the activity that analysts perform is fundamentally based on classifications: given the difficulty of simply plugging disputed or incomplete information into a valuation formula, analysts assess the value of a company by comparison with other companies in the same category” (Beunza & Garud, 2007, 21). Moreover, the classification is external to the actor – it is something she draws upon when making a decision. The view on a technology is not simply the result of communitarian processes but interpretations of technology are arrived at through interactions with forms of intellectual and material equipment.

We intend to focus on the emergence of new technological fields as classifications/categories rather than organisation visions because it gives our analysis more purchase (it allows us to focus on the role of those actors who, in some respects, control the classification process, the asymmetries and alignments of interest).

Nevertheless, this approach too has weaknesses. Our first critique of Zuckerman is that categories are not simply a “social screen” but, as we will show below, a socio-technical one. Second, we fall short of suggesting that such classifications create the isomorphic pressures asserted by neo-institutional theory as causing organisations to become increasingly similar. This is because we are sceptical of accounts such as the neo-institutionalist isomorphism thesis, which simply emphasise stability or change. Our analysis seeks to explore the intricate interplay between stabilising and dynamising factors, which often lead, as we will show, to outcomes that are more uneven. A further critique of Zuckerman, and related to the above, is that in his approach there is little process of interaction between actors (i.e., between those doing the reviewing or between reviewer and actor being reviewed). Critics seemingly assign vendors to slots – and there is no obvious debate or contention about the process (which seems highly unlikely given the importance of the review process). We find useful here Beunza and Garud’s (2007) critique:

According to Zuckerman (1999), however, the comparative valuation undertaken by analysts takes place in a passive manner, leading to dysfunctional consequences for the companies being valued. Analysts strive to maintain legitimacy in the face of investors. This leads to a rigid insistence on fitting companies into existing slots (as opposed to creating new ones when required), which in turn makes investors screen out of their coverage those companies that do not belong to any pre-existing category, depressing their market value as a result. Consequently, analysts are said to create an ‘illegitimacy discount’ for hybrid organizations that perpetuates existing industry structure and stifles innovation (Beunza & Garud 2007, 21).

In contrast to this, we find useful the framework developed by Beunza and Garud (2007) where they suggest that actors like financial analysts partake in ‘frame-making’ and that these frames can often be the subject of dispute or controversy. What they are suggesting is that key actors operate with – or construct - a particular ‘socio technical frame’ that influences the development of new technologies. “Analysts are active builders of frames, rather than passive classifiers of stocks into categories” (34). “We denote by calculative frame the internally consistent network of associations, including (among others) categories, metrics and analogies, that yield the necessary estimates which go into the valuation of a company” (Beunza & Garud 2007, 26). The socio-technical frame comprises an ‘equipment’. This equipment can be cognitive (such as analogies or comparisons) or material (such as lists). Beunza & Garud (2007) argue that analysts persevere with their frames but that this perseverance leads to continued disparities (‘sustained differences in valuation that arise from a disparity in calculative frames’ (29)). They describe these as ‘framing controversies’, which they argue can lead to the eventual ‘abandoning’ of a frame. Through the process of frame building, controversy, and eventual abandoning of a frame they “document the tendency of successful analysts to disrupt, rather than perpetuate, existing industry categorical schemes” (Beunza & Garud, 2007, 34).

### **3 DESCRIPTION OF INFLUENCE OF INDUSTRY ANALYSTS**

Industry analysts represent an important development in the IT marketplace. At the outset, the new institutions of information and technology and business improvement were rudimentary and inchoate. Over the decades, however, the institutional frameworks for promoting and discussing new

technologies have become better established. Industry analysts have emerged as central actors in particular through helping to establish and constitute technological fields.

They have been particularly influential as mobilisers of community opinion in the case of ERP. As Lopes notes, the term Enterprise Resource Planning was 'designed' by the technology industry analyst organisation, the Gartner Group, for instance, which proclaimed ERP as the 'new information systems paradigm' (Klaus et al. 2000). An April 1990 Gartner publication, Computer Integrated Manufacturing, described their view of ERP 'which we consider the software architecture for the next generation of MRP II'; a checklist of technical features anticipated 'the continuing evolution of computing systems' including graphical user interfaces, relational databases and client/server models (cited in Wang and Ramiller 2004). As described by Mabert et al. (2001: 69–70): 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. After Gartner coined the term 'ERP', other players (most notably vendors and consultants) began to flesh out what ERP was and how it worked, followed by adopter accounts of the organisational benefits of its adoption (Wang and Ramiller 2004). More recently Gartner declared in 2000 that ERP is 'dead' and mapped out a transition to the next phase, which they described as extended ERP or ERP II (Bond et al. 2000). They predicted that by 2005 ERP II would displace ERP as the means to support internal and inter-enterprise process efficiency, while warning that many existing ERP vendors would not be able to achieve this paradigm shift because of the huge investments and technical challenges involved in redeveloping systems. Gartner's predictions (and warnings) were only partly borne out by subsequent experience. Judd (2006) notes, following Gartner's statements, that traditional ERP vendors were quick to rebadge their existing packages as meeting the ERP II requirements but to date have delivered only what he terms 'ERP-1.5' – that is, industry-customised versions of their existing products. Their influences raises questions – where do they get their influence from? Gartner are a large global organisation, do they present a uniform set of advice?

## **4 CONDUCTING A VENDOR RATING**

In what follows we will describe how Gartner have brought influence to bear on the notion of CRM. One of the most routine services that Gartner offer are to conduct a 'vendor rating'. That is, they are asked by their clients to provide assessments of IT vendors being considered within procurement processes. These rating can be on one or several vendors being considered. According to one Gartner document:

Gartner's vendor ratings are used to rate vendors as entities; however, they are also used to rate different aspects of a vendor, such as its strategy, organization, products, technology, marketing, financials or support. Vendors with a clear focus, solid products and an advantageous market position may be rated 'positive' or 'strong positive'. Vendors or product lines that lack these qualities may be rated 'caution' or 'strong negative'. Vendors that have potential, but which we believe should be very carefully evaluated, are rated 'promising' (Understanding Vendor Ratings, <http://www.gartner.com/pages/story.php.id.9328.s.8.jsp> downloaded 1st October 2008).

### **4.1 First episode - Gartner comments on Vendors**

Gartner were contacted by a City Council in the UK and asked to carry out a vendor rating for a number of vendors being considered for the delivery of a CRM system. They were sent the list of potential vendors, some details about them and the solutions they were offering, as well as a description of the features they would require from a future CRM system. A Gartner analyst (described as 'Bob') responded with brief comments on each of the vendors. These comments were summarised in a document that was then circulated within the procurement team:

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 [Bob's, the Gartner analyst] view is that they should be on the list of products to be considered.

ONYX is a US company and is very Microsoft orientated. They are involved in a number of London Authorities, but [Bob] was not aware of any involvement outside of London. They also have a presence in Munich and Paris. They work mainly in the private sector. Their products are good, but there would be some concern over scalability if we expected the operation to expand to hundreds of users in the front-office. Their products are more mid-market.

It is important that we determine what the longer term plan is in terms of numbers of staff that will be accessing the system, particularly in the front office. In choosing a solution it is important that we ensure it is capable of scaling up to our anticipated size.

With reference to [the joint venture partner working the Council] comments regarding having to download and duplicate data with the large vendor solutions, [Bob's] comment was that these vendors have pre-defined customer data schemas, which you have to use. They have a closed structure, which may require batch updates from existing systems, although it may be possible to make those updates virtually real-time.

Siebel has the largest share of the commercial marketplace, but he 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.

There was nothing particularly surprising about the bulk of the document and the comments given. Bob appeared to point simply to a range of issues to be considered. Only one vendor (Lagan) appeared to receive an unqualified endorsement whereas the remainder were seen to have both good and bad aspects. The market strength of the vendors was given particular attention. It was only through scrolling further down the document that one finds the surprise.

#### **4.2 Does the Vendor appear on a list?**

One vendor, whom we are calling 'NewVendor', was beginning to emerge as the 'favourite' amongst certain groups within the Council but received the following puzzling comment:

[Bob] 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. [NewVendor] 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 RH [one of the City Council IT managers] on what the US Analyst knew of them (note circulated within procurement team).

NewVendor did not appear on their 'list' thus Gartner were not able to provide comment (see below for how this issue is interpreted). Thus rather than provide a definitive assessment Gartner can only 'speculate' further about NewVendor based on the information sent to them by the Council:

A more open product could provide better integration. They speculated that the [NewVendor] product was a toolkit rather than a full solution. In this case their concern would be how much expertise [the joint venture partner] had with the product. It was explained that [NewVendor] staff would be likely to be involved in the installation as well. Bob would then be concerned about the ongoing support once the [NewVendor] specialists leave the site. He felt that [the City Council] would be the Guinea Pigs for this solution and in our position he would not be prepared to take the risk (note circulated within procurement team).

Despite Gartner's lack of prior knowledge concerning the vendor, this does not stop them raising concerns about whether this vendor was the correct option for the Council given the configuration of system that had been described to them. Indeed, they conclude by suggesting that the vendor might even be a 'risk'. What this initial discussion highlights is that Gartner are operating within a particular view of the world – or 'frame'. This begs the question as to just what this frame is and how it shapes the way Gartner view the CRM market.

#### **4.3 Has Anyone Else Asked For Information About NewVendor?**

When told of Gartner's view NewVendor were initially critical of how Gartner collect information (see below). Gartner, in turn, responded by pointing out that it was not *them* problematising NewVendor but, rather, the potential community of users highlighting a discrepancy. They describe how:

Gartner gets 80-90% of its information directly from Gartner clients talking about their experiences and technologies not from being briefed by technology vendors. Nonetheless Gartner hosted 150 CRM vendor briefings in Europe last year of which 30 or so were instigated at Gartner's request due to client calls. No client has asked us to ask for a

briefing from [NewVendor]. It does not mean that [NewVendor] is a bad solution – it just surprises us that we have not had a request (letter sent by Gartner).

NewVendor was unknown to those companies in the market for a CRM system. It thus came as a 'surprise' to Gartner that those considering adopting a CRM system had not considered NewVendor. There are a number of interesting aspects here. In providing this kind of defence of their knowledge claim Gartner are highlighting an interesting feature of today's procurement markets. Just as in previous decades informal social networks (word of mouth, personal recommendation, informal exchanges of information etc.) played a role in the selection of a technology, today, and in contrast to previous procurement practices, it was typical to solicit the opinion of a seemingly independent intermediary when choosing between technologies. Moreover, Gartner were highlighting their central role (how they had become an obligatory point of passage for the community of potential users and the market for potential offerings). All transactions, as they saw it, should move through them. All relationships should be mediated by their analysts. Those that did not, those relationships that escaped their attention, were not oversights or relationships that occurred outside of their attention but potential discrepancies.

In other words, one of the means by which Gartner decided on the suitability (or not) of one particular vendors was (not through private, idiosyncratic knowledge but) through public forms of knowledge. Were these vendors known to the potential community of users? Thus, the first part of the frame is community or public knowledge.

#### **4.4 Does the Vendor fit the Classification?**

Gartner's assessment of NewVendor caused some surprise amongst the council. The issue was reported back to NewVendor who then responded to the Council:

Their comment when it was pointed out that they were unknown to Gartner was that, in the 2 years the company has been in existence, it has not spent any time or effort in making itself known to industry analysts. This is because at present these companies do not have a category for what they are offering (the integrated framework approach) (note circulated within procurement team).

NewVendor see the problem as not with them or their systems but with Gartner and the narrow way in which they classify the CRM market. During the period of the procurement, and as has been highlighted above, there was much ambiguity about the nature and shape of CRM systems. What the CRM system should look like and what it should contain appears to be an open question. Moreover, as they saw it, NewVendor were offering something more than typical CRM vendors, and this did not fit into Gartner's existing technology classification. As they saw it, there was yet no 'category for what they are offering'. Reading between the lines, NewVendor see themselves as 'residual' within the research of industry analysts. They are residual because "the structure of the classification system has a limited choice between categories" (Star & Bowker, 2007, 274); or perhaps even because "the knowledge system informing the category structure is in flux" (Star & Bowker, 2007, 274). Thus, a further aspect of the frame is a narrow classification

#### **4.5 Gartner's Classification of CRM**

A focus on frames is useful as it highlights "controversies" – in particular the controversies surrounding classifications. It not only explains how and why controversies occur but suggests that they are likely. The sociologically interesting process is how such controversies are resolved (it concerns how competing claims for the nature and shape of CRM are overturned).

Key in all of this was the understanding of CRM. Gartner treated NewVendor as a conventional CRM vendor whilst NewVendor saw themselves as a vendor delivering more than a simple CRM solution (what they describe as the 'integrated framework approach'). That is, Gartner was assessing NewVendor through its emerging CRM frame. We can show this through describing how NewVendor and Gartner debate the particular details of NewVendor's systems. The exchange takes place when NewVendor were asked to 'say why this solution was preferred to those that already exist in the English city

councilmarketplace. They submit a two-page document that is then passed to Gartner for comment. Gartner respond by annotating the document and refuting specific points.

NewVendor begin by stating the uniqueness of their offering: “[NewVendor] is the first vendor to provide an integrated framework approach”. This is a system and approach that seemingly provides a more integrated type of solution compared to other types of systems (competitor systems are seemingly made up of distinct components that have to be brought together through laborious and maybe even risky programming work). This is a challenge to Gartner’s classification system – they are espousing an approach/technology with which Gartner are not familiar.

Gartner respond by stating how this is hyperbole and that this technology and emphasis is similar to what other CRM vendors have already been offering: “Loud Cloud, Graham Technologies and several others have said the same in the past”.

There is then a lengthy exchange where NewVendor set out in length just how their systems differed from others – emphasising in particular the disconnected and ‘patchwork’ nature of competitor solutions:

With other vendors, the Council 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 [NewVendor] components this would be a patchwork solution and it would be very difficult getting these components successfully integrated (NewVendor document).

NewVendor are stating that their solution already contains all the aspects other vendors will be required to bring in from elsewhere (a form of work that would be both costly and possibly prone to problems). Gartner refute this claim by stating how other systems already on the market will have most if not all of these capabilities and how some competitors might be able to 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 (eg Interactive Intelligence with Onyx and Siebel with Avaya). 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 response)

They also refute NewVendor’s suggestion that integrating the various components in one system would be problematic – and highlighting how NewVendor itself might suffer the same kind of integration problems:

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. NewVendor is not exempt from integration with the ACD system and the existing eGain applications (Gartner response).

This exchange goes on for some time.<sup>28</sup> What it highlights is that contrary to the organisational vision literature (which suggests that organisational visions develop in different directions in the hands of a

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<sup>28</sup> The exchange continues:

NewVendor: There could be overlap of functionality between components and issues over data replication and ownership with the multi-vendor solution.

Gartner: Agreed. This would also be true of the [NewVendor] solution – no vendor provides a comprehensive solution. We assume the argument here is that there would be less integration problems.

N: Any integration work could need significant rework when individual products are upgraded. The [NewVendor] solution is an integrated framework from a single vendor so is not subject to these problems.

G: We don’t have any datapoints to be able to agree or disagree whether this is true but we are sure that there would be subsequent [NewVendor] upgrades.

N: The solution is not simply a technological solution. It involves automating the business processes and ensuring these processes are customer-centric rather than based around the organisation or its employees. It does not impose its own data schemas as do other CRM providers. With other providers, data has to be replicated in the product’s own database. This gives major problems with data synchronisation. With the [NewVendor] solution, the data remains in the existing systems and is mapped to a virtual data model. There is no replication of data.

community – see Swanson & Ramiller [1997]; Wang & Swanson [2007]; Wang [2009]) is that here we see that one set of actors attempt to set out a particular view on others of how CRM should be developing. Gartner are not simply articulating but *imposing* their frame.

Moreover, in terms of how Gartner assess vendors this is never as a stand alone, single organisation but in relation to others – the analyst compares the new vendor product with their knowledge of existing more established technologies. What the analysts are doing here is pointing out that the apparently novel features of NewVendor are already contained within existing offerings. In other words, analysts undermine the claims of seemingly innovative or novel vendors by grouping them together with competitors and rival (Kennedy 2008, 275-6). Placing NewVendor in the context of other vendors is an attempt to weaken their claim for the novel nature of their technology. They also attempt to maintain existing categories (or resist enlargening classifications to account for more variability) so as to preserve the ability to commensurate (Espeland & Stevens 1998) that is to maintain comparability amongst vendors (Lounsbury & Rao, 2004, 972). Discrepancies about frames persist over time – analysts tend to persist in their positions. This raises the question – if presented with competing notions of CRM, or technologies that claim to do different things, do they maintain frames indefinitely?

#### 4.6 Gartner Do A Briefing

Since there was no available research on NewVendor, the City Council decide to ask Gartner to conduct a briefing (as clients of Gartner they had the possibility of commissioning a limited number of briefings each year). A US analyst (Dr S) was briefed on the needs of the local authority and then met with NewVendor staff (but not with any of their customers). She confirmed NewVendor's understanding of themselves as 'residual' in relation to Gartner's classification:

[Dr S] covered [NewVendor'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 procurement team).

Implicit in her description is a criticism of the vendor for failing to understand the role and influence of industry analysts (this includes how to relate to them, how much effort to invest in interacting with them, as well as with how to present offerings to them). Having said this, she advises the local authority not to give too much weight to Gartner's 'list':

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G: This is a valid argument which stands up against vendors like Siebel however it is not unique. Youcentric and Chordiant employee the same approach. Onyx provides a hybrid approach where there is some local data storage and some use of a virtual data model where real-time access to data is required.

N: The workflow and portal front-end enable processes to be automated in a customer centric way while still using existing systems that were not designed for this purpose. Leading products are feature rich, but largely targetted at commercial organisations.

G: Agreed – hence our recommendations of looking at existing deployments in the UK LA market. Typically Oracle, Onyx and Lagan along with a number of local government application specialists appear to be winning most projects but their experiences are less than 2 years old in most cases. The key question is what makes government different and which features are required and not required.

N: Local Authorities may therefore pay for many features they will never use, while paying even more to bend the product to fit their needs. They quote Gartner's research which says that 85% of enterprise IT projects fail to deliver business objectives, are out of date in 2 years and a typical installation uses only 7% of the functionality.

G: The highest failure rates lie in field sales applications in CRM with a number of marketing and self-service applications suffering too. Call centres have a lower failure rate mainly as employees in call centres are more likely to do what they are told. Technology usually represents less than 20% of the causes of failure. Therefore the skills of BT in change management are statistically the more likely risk of failure than the NewVendor application.

G: Overall the biggest concerns we expressed were with experience of [NewVendor] in the UK, of [the joint venture partner] using [NewVendor] and [the City Council] being the Guinea Pig for [NewVendor]. We have not seen any response in this document that addresses these concerns.

She advised not to read too much into the fact that they were not known to Gartner. It was in [NewVendor'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. They have a legacy of customers in the Insurance, Banking and Telco sectors both as NewVendor and former companies. Less so in the Government sector. The client list is impressive (note circulated within procurement team).

Indeed the 'impressive' features of the vendor are highlighted.

Analysts attending the briefing had been impressed with [NewVendor's] knowledge of their marketplace and their understanding of software evolution (note circulated within procurement team).

There was also discussion 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 [the 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.

[NewVendor] is still an emerging company and has to build a list of satisfied clients. RS would therefore expect them to ensure that projects were a success (note circulated within procurement team).

The analyst is highlighting how NewVendor is supported by a large and very well known partner organisation but also as a new company it is crucial for early projects to be successful (so as to build those all important 'reference sites').

The US analyst interprets the case of NewVendor differently. She acknowledges the failure of NewVendor for 'making themselves known to Gartner' but also highlights the difficulties a vendor such as NewVendor might have in conforming to Gartner's existing categories. She went on to address the problems raised by earlier Gartner analysis (the fact they were 'new', 'unknown') and concludes that these should not necessarily be reasons for concern and, could equally be read as reasons as to why to choose NewVendor (as a new company moving into a new market it would be keen to ensure the first project was a success). These are different reactions to the same vendor. Importantly, she reads NewVendor through a different frame. In particular, we note how this particular analyst is not a 'CRM specialist' but concentrates on 'business process outsourcing'.

[Dr S] said that she was not a CRM specialist, business process outsourcing was her speciality. It had been [NewVendor's] choice not to go into the CRM category. She emphasised, however, that [NewVendor] 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.

The analyst points out how NewVendor is 'not a business process outsourcer' either but she outlines some of its attributes (which are mainly positive). What this example throws into light is that NewVendor is being viewed through two different frames – to neither of which the vendor properly belongs (it is also 'residual' for these classifications). As a result, the analysts attached to these different frames see and say different things about the same vendor. Viewed through the CRM frame NewVendor is **compared** to other CRM vendors (often coming out second best or shown to be replicating what is already out there in the marketplace). However when viewed through the alternative (perhaps BPO) frame NewVendor is seen not simply as a CRM vendor but as offering 'broader services'. Thus, the analyst characterised NewVendor as 'providers of business process utility solutions/service providers rather than simply software suppliers'. In the CRM frame, NewVendor is assessed with **comparative measures** such as 'integration', 'risk' and 'community knowledge'. Whereas under the alternative frame, there is a focus on its previous history, the fact it will be eager 'to build a list of satisfied clients', and that it is backed by a significant partner, etc. Within the CRM frame there is a focus on **equipment** such as the lists constituted from community knowledge whereas in the alternative frame these are lists of 'impressive clients'.

## 5 CONCLUSIONS

Industry analysts play a crucial role in configuring particular development arenas and in mobilising consensus. It appears that various intermediaries hold the ropes and set the rules of game – that is

defining the boundaries of technology and markets or what we have termed the 'technological field'. This article has pointed to the process of categorisation applied to emerging artefacts and the different understandings that exist (at least initially) between broadly similar artefacts. What is at stake in these classifications and reclassifications? The classification of a technology is far from trivial. It proposes boundaries that link a class of often quite various artefacts whilst differentiating them from others. These categories do not simply allow industry analysts to order (and represent) the market/technology but also shape it. Analysts view and constitute markets through its various classifications. Clearly, on the one hand, this process has some positive effects for technology consumers, vendors and so on. The designation of a technology field reduces uncertainty for adopters and for developers: (1) it allows adopters to develop a generic case for particular innovation pathways (based upon an analysis of the potential performativity of that class of technology for certain types of organisational challenge), and, once this is accepted, paves the way for a comparative analysis of the relative advantages of particular offerings for their specific organisation; (2) the designation of a technology draws boundaries around a set of artefacts and their suppliers, and thereby creates a space in which some ranking may be possible; and (3) it allows developers to assess their offerings, their promotion, and enhancement in relation to the features of broadly comparable products and their likely future development trajectories. In addition, (4) we see a clustering of offerings that may serve to reinforce expectations about what functionality should be included and where the technology will go in future. Importantly, on the other hand, there are also negative effects. Analysts coordinate and control the classification process, preferring vendors to conform to existing classifications. We saw how the analysts studied have produced one particular view of

CRM technology and vendors are forced, if not to conform to it, to consider it during the compilation of their own solutions. They attempt to classify vendors according to existing classifications (instead of continually creating new ones) which has the result that they are blind to those that do not neatly fit their categories (Beunza & Garud 2005). Vendors that do not fit (or cannot conform) appear as anomalies in the analysts' view of the world with the result that these organisations are treated as 'illegitimate' (Zuckerman 1999).

While the vendor (NewVendor) described above has grown in size and influence globally, as far as we know, it has not been able to enter the market described in the paper (the local government market in the UK). Moreover, the type of solution they were proposing (the Integrated Framework Approach) has also had little success. Indeed, they no longer refer to their system in these terms but identify it along more conventional lines. What this suggests, as Hacking (1999) has noted, is that classifications do not necessarily stabilise settings but create movement. Some actors move closer too or conform with and some move further from or rebel against a classification. In the case described here, the vendor moved towards the notion of technology espoused by the industry analysts (even if it meant conforming to an apparently less innovative solution). Interesting in all of this is how industry analyst classifications appear 'authoritative'.

Whilst they could be challenged analysts firms have as we have seen ways to deal with contestations through, for instance, pointing to the provenance of their assessments (it is not *them* casting dispersions on the vendor but the fact that none of their clients have ever asked for information about NewVendor), the upshot being that it appears that analysts maintain their original classifications. Also, as Beunza & Garud (2005) identify whilst discussing the case of financial analysts, these kinds of experts tend to 'stick to their frame' because to do otherwise would diminish their credibility. What we are suggesting is that the classifications of industry analysts exhibit a strong and 'enduring' influence on technological market. Classifications, in other words, are strongly institutionalised. They advance in a slow and careful manner because here the analysts are attempting to define the field (and to organise change in the marketplace). This is in contrast to what Swanson & Ramiller (1997, 462) argue. It is not simply that organizational visions exists because a collection of social actors agrees that they exist, or that this agreement is manifested only linguistically. Rather the frame is made up of cognitive and material elements. Classifications, for instance, can work to include and exclude various actors – and can do so

with material force. As Bowker & Star (1998) suggest classifications are both symbolic and material. An example of this includes the various equipments that make up and allow classifications to work – such as ‘lists’. Whether or not someone appears on a list is not simply a matter for agreement. Moreover, the effect of a list is not purely a linguistic matter. Lists clearly have effects outside of what is said about them. In this case, they serve to problematise a particular software vendor. Whilst beliefs about technologies are clearly important, a conception of a technology that is incorporated only within ‘community ideas’ may have a precarious status. A form of incorporation that is in some senses deeper is their incorporation into more material devices. A conception of the market that is incorporated into a list can have effects even if people are sceptical of its accuracy or simply unaware of its existence.

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