The institutionalization of the 'cloud computing paradigm' within the professional community of information technology managers

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II.   Executive summary

The present dissertation initially discusses the emergence of 'cloud computing' within the global computer industry *at large*, arguing that the phenomenon that it is not really a technology *per se*, but a whole new way of thinking about and interacting socially around the use of already existing and proven technologies such as networking, hardware and software. As, it is reasoned, 'cloud computing' is a paradigm and an institution in the new sociological sense of the term. Having argued that global computer industry participants *at large* converged around the 'cloud computing paradigm' in 2008, the dissertation sets forth to investigate whether and to what possible gradation that the 'cloud computing paradigm' has been institutionalized within the professional community of information technology managers. An institutionalization of the 'cloud computing paradigm' within this specific professional community, it is reasoned, is essential for the global computer industry; this professional community occupies the formal hierarchical positions, which are responsible for the adoption of the 'cloud computing paradigm' and its associated technological structures in organizational life.

Having discussed organizational neoinstitutionalism, and presented a new sociological theory of institutionalization, the dissertation operationalizes the core tenets of self-same in an empirical study of the professional discourse on the 'cloud computing paradigm' in four principal outlets of the information technology management trade press, in the period from primo 2008 until ultimo 2012. The 'cloud computing paradigm', it is concluded, is medium institutionalized within the professional community.

III. Table of contents

IV.   Setting the stage

The present chapter introduces the topic of the present dissertation, and then proceeds to outline its research interest, its problem area and its research question. It concludes with a brief delimitation.

Introduction

Modern computer technologies – here taken to mean, roughly speaking, the tangible electronic circuit boards and semiconductors that can carry and process programmatic instructions and such intangible programmatic instructions themselves – have become ubiquitous in contemporary society. Through their many manifestations in highly disparate technological artifacts, computer technologies now permeate all corners of organizational and everyday life. The world we live in has undeniably been transformed by modern computer technologies, although perhaps more subtly and less revolutionarily than popular press terms like "Information Age" often suggest alongside celebrative announcements of new technological artifacts emerging from the industrial laboratories of the global computer industry (Ceruzzi 2003). Computer technologies are important and omnipresent, but remain only a small part of social life (Campbell-Kelly 2003), even though the global computer industry promulgates the discourse that we literally cannot 'live' without them.

Technological advancements, economic improvements and changing social preferences have been among the influences driving substantial changes in both the structure of the global computer industry, and in the application of its offerings in organizational life, from the time when its two sides emerged and collated into a whole half a century ago. But in spite of some minor bumps in the road, the pattern of supply and demand of computing capacity has prevailed throughout the second half of the 20th century. Some participants and observers of the global computer industry find this comment dull, numerous historians of technology included among them, arguing that social reality surrounding 'corporate computing' follows an innate logic of the technology itself. According to these 'technological determinists', to employ a derogatory epithet without any intent to point fingers, there can be only one explanation of this persistence in the face of otherwise extreme change: it has not yet been technically feasible, if even technically possible, to supply and consume computing capacity as anything but classical capital goods. This claim should not be accepted at face value.

It was only very recently, in the just concluded first decade of the 21st century, that the pattern of supply and demand of computing capacity begun to shake and shiver in its foundations, and its web of threads to unravel in the seams. Not that this was the first time it shook and shivered, but by the looks of it, the shaking and shivering will have more than transient consequences this time around. Earlier attempts to revolutionize the global computer industry with time-sharing, and utility-computing, were ephemeral and vanished due to thwarting and reluctance among the industry participants themselves (cf. Ceruzzi 2003; Campbell-Kelly 2003). But under the obscure epithet of 'cloud computing', a number of computer industry vendors have begun leasing of computing capacity as a service of late. Alongside recently the emerging 'big data' phenomenon, erected upon

the presumption that business insights can be mined out of exceedingly large sets of seemingly incoherent business data (see e.g. Hagerty 2013), 'cloud computing' is one of those modern 'computer technologies'[1] in which the global computer industry participants and its observers have vested greatest hopes for the future. For that reason alone, 'cloud computing' is an interesting subject of empirical inquiry. Approaching the mid-2010s, few can claim not to have been made acquainted with 'cloud computing' in one way or the other. The epithet surfaces in the recreational and productivity software that we have on our personal computers, our laptops, our tablets, our smartphones and now even our smart televisions. It surfaces on the internet as we access recreational and productivity web sites such as social media and web based e-mail. And the vendors of hardware, software and web sites increasingly use the epithet in their marketing efforts, trying to convince us that their products and services are based on 'cloud computing', or just '*the cloud'*, as it has gradually become known in popular discourse.

Yet, what makes 'cloud computing' really interesting for an organizational scientist, is that it is not really a technology *per se*; rather, it is a new way of thinking about and interacting socially around the use of already existing and proven technologies such as networking, hardware and software. The argument is not that 'cloud computing' is not erected upon new computer technologies, such as virtualization[2], but that these recede long into the background when the paradigmatic nature of 'cloud computing' is taken into consideration. 'Cloud computing' is paradigmatic because it subverts a consensual understanding of hardware and software artifacts as classical capital goods; a longstanding truth within the global computer industry, which was embodied in the 'mainframe paradigm' that dominated from the 1950s to the 1990s, and maintained by the 'client-server paradigm', that has

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[1] I put the term 'computer technologies' in quotation marks, seeing as I shall later bring into question, whether 'cloud computing' is *really* a 'computer technology' on an ontological level.
[2] Or, for that matter, new socio-technical trends such as the expansion of high-speed networking,

dominated from the 1990s until the time of writing. Historians of computer technology have traced this sedimented truth back to the maturation of the hardware and software sub industries of the global computer industry in the 1960s and 1980s, in that order, emphasizing their socially constructed and historically situated nature (cf. Campbell-Kelly 2003; Ceruzzi 2003)[3].

Research interest

The present dissertation embodies my fundamental academic interest with the implications of the emergence of the 'cloud computing paradigm' for the organizational forms of the global computer industry, and their associated exchange transactions with that part of organizational life, that lies beyond its boundaries. It goes without saying that this broad academic interest lends empirical support to theorization from multiple perspectives, but due to my educational affiliation with the scientific discipline of organizational studies, I pursue it from the theoretical vantage point of new sociological and, more particularly, organizational neoinstitutionalism[4].

Problem area

The specific research interest that I unfold in the present dissertation, with the purpose of shedding light on only a small fraction of these implications, is with the real-world sedimentation of the 'cloud computing paradigm' within the professional community of information technology managers. In terms of the exchange transactions between the global computer industry, and the organizational life that lies beyond its boundaries, the professional community of information technology managers is a proxy or surrogate that

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[3] For instance, in the 1950s early heydays of the global computer industry, when hardware was eagerly being exchanged as a capital good between industry participants and the more pioneering end users, the term 'software' had not yet been invented. All industry participants were engaged with the hardware sub industry, and programmatic instructions were handed to end users at no cost along with their hardware purchases, because industry participants basically did not understand at the time that software cloud possess value on the competitive marketplace (cf. Campbell-Kelly 2003; Ceruzzi 2003).
[4] The actor-network theory that thrives within science and technology studies (STS) was the obvious second choice. The scientific vocabulary of actor-network theory is methodologically incongruent with organizational neoinstitutionalism, and accordingly, the two perspectives cannot be applied side by side.

personifies the latter. That is, this specific professional community has a very pivotal part in the sedimentation of the 'cloud computing paradigm' in organizational life because its professionals *at large* occupy those formal hierarchical positions, which are responsible for the adoption of the new technological artifacts, that emerge from the industrial laboratories of the global computer industry. If information technology managers *at large* reject the 'cloud computing paradigm', and more explicitly the exchange transactions that it embodies, so does the organizations they personify. In other words, if information technology managers *at large* reject to lease in computer capacity from *'the cloud'* in favor of purchasing hardware and software artifacts as classical capital goods, so does the organizations for which they are the formal spokespersons on the matter. If organizational life at large rejects the exchange transactions embodied within the 'cloud computing paradigm', their associated organizational forms will collapse in the long run, solely because their *raison d'être* hinges on the sedimentation of the 'cloud computing paradigm'. In other words, if the 'cloud computing paradigm' does not successfully sediment as a new way of thinking about and interacting socially around the use of modern computer technologies in organizational life, there will be no market for *'the cloud'*, and therefore the new organizational forms launched only for this market will be dismantled.

Figure IV-1: A conceptual model of theorized relationships

Statement of curiosity

Recapitulating the abovementioned, the overarching research interest that drives the present dissertation forward can be condensed into the following broad statement of curiosity:

- To which gradation has the 'cloud computing paradigm' been institutionalized within the professional community of information technology managers?

Research question

Theorizing the 'cloud computing paradigm' as a premature institution (cf. Berger & Luckmann 1966), around which the participants of the global computer industry converged in 2008 (see e.g. Fitzgerald 2008; Morrison 2008; Morrison & Charny 2008c; Morrison & Charny 2008b; Morrison & Charny 2008a; Broersma 2008)[5], I investigate the gradation to which its

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[5] Converged *on the face of it*, that is. I do not refuse to acknowledge the subtle institutional power struggles that lead up to this overt convergence in the public discourse. Rather, I argue that since such power struggles have unfolded beyond closed doors and out of public view, they cannot be made subject to empirical analysis. Accordingly, I refrain from speculating about them (but see the discussion).

institutional legitimations have impacted the professional community of information technology managers, making the 'cloud computing paradigm' a legitimate and taken-for-granted institution within this sub universe of meaning (cf. Berger & Luckmann 1966) That is, within this professional community, I investigate the relative impact of institutional legitimations explaining and justifying the institutional change (cf. Berger & Luckmann 1966; Green 2004; Suddaby & Greenwood 2005; Colyvas & Powell 2006) from the 'client-server paradigm', as a mature institution that permeated the global computer industry since the early 1990s, to the 'cloud computing paradigm', as a premature institution that did not become very discernible until the late 2000s.

The overarching research question, through which the research interest and curiosity is pursued, can therefore be articulated as follows:

- To which gradation have institutional legitimations of the 'cloud computing paradigm' impacted the professional community of information technology managers, making it a legitimate and taken-for-granted institution within this sub universe of meaning?

Institutional legitimation is achieved through explanation and justification (cf. Berger & Luckmann 1966), which fundamentally relies on rhetoric as its means of persuasion (cf. Green 2004; Suddaby & Greenwood 2005). The gradation to which institutional legitimations have prevailed within a given sub universe of meaning, thereby making an institution legitimate and taken-for-granted, can be methodically inferred from the assumptions and 'habits of mind' revealed indirectly by authors of text through the emphasis, quotations and questions in their commentary (Colyvas & Powell 2006). But the absence of commentary gives way to inference as well. Blatantly present rhetoric vanishes (Green 2004), and "debates cease and conflicts or questions wither" (Colyvas & Powell 2006, p.315), the moment institutional

legitimations prevail and the legitimated institution becomes considerably legitimate and taken-for-granted. For that reason, I investigate how the information technology management trade press has 'discoursed' the 'cloud computing paradigm' in a 5 year period starting primo 2008 and ending ultimo 2012, based on the general methodological presumption of trade press discourse as simultaneously mirroring and shaping the views of the professional community that it represents, thereby in essence reflecting its 'dominant concerns' (cf. Green 2004).

Delimitations

It is possible to identify two broad and general applications of computer technologies in contemporary society. Firstly, there are the organizational applications of computer technologies around which the computer industry originally materialized in the 1950s and matured in the 1980s (Ceruzzi 2003; Campbell-Kelly 2003). But, secondly, there are also the recreational applications of computer technologies that materialized almost as an afterthought in the 1990s (Campbell-Kelly 2003; Ceruzzi 2003). It goes without saying that the 'cloud computing paradigm' applies to services offered by global computer industry participants to organizational and personal end users alike, but should also be emphasized, that my focus is strictly delimited to the former. That is, I make no theoretical or empirical claims with regards to the gradation of institutionalization of the 'cloud computing paradigm' in everyday life.

V.   Methodological considerations

The present chapter touches lightly upon the nature and roles of first the multiple paradigms (cf. e.g. Kuhn 1996; Lakatos & Musgrave 1970) in organizational studies (cf. Burell & Morgan 1979; Morgan 1980), then the nature and role of scientific language in self-same (cf. Astley 1985; Richardson 1994). Eventually, the methodological position of the dissertation is expounded, and its implications for my presumptions about the nature of society and the role of institutions discussed.

The role of multiple paradigms in organizational studies

The scientific disciplines within the formal and natural sciences are, like a subset of the applied scientific disciplines in the borderland where these and the social sciences meet, dominated by practically uniform paradigms that are more or less intermittently displaced in lieu of new and likewise uniform alternatives (cf. Kuhn 1996; Lakatos & Musgrave 1970). Paradigms are essentially sets of fundamental assumptions about the nature of the world, which are common to a community of theorists, and are mutually affirmed in between them through their daily interactions in the scientific community (Morgan 1980). These assumptions may concern ontology, epistemology and general methodology (Guba & Lincoln 1994). A paradigm

consists of different schools of thought, or research traditions, each driven by their own theoretical interests and commitments.

In a sharp contrast to their harder cousins, the soft scientific disciplines of the social sciences are characterized by a plethora of deeply contradictory paradigms and schools of thought that operate alongside both within and across them (cf. Astley 1985). This also applies in in organizational studies (cf. Burell & Morgan 1979; Morgan 1980), and particularly so, because of its inheritance from heterogeneous disciplinary ancestors. Organizational studies is noticeable by social scientists coming from different backgrounds, having brought with them quite different 'game rules' to the playing field.

Organizational studies has evolved to its current state of affairs in spite of these circumstances and has also, according to a widespread belief shared among its participants, benefited from the more nuanced view of complex and multifaceted phenomena that arises from the cultivation of different paradigms and schools of thought (cf. Burell & Morgan 1979; Morgan 1980; Astley & Van de Ven 1983; Gioia & Pitre 1990; Hassard 1991; Guba & Lincoln 1994; Schultz & Hatch 1996; Kaghan & N. Phillips 1998; but see Pfeffer 1993 for a rare integrationist exception). It is also important to emphasize that while organizational studies is marked by the orthodoxy of the functionalist paradigm (cf. Burell & Morgan 1979; Morgan 1980), this orthodoxy has not managed to establish an equivalent of the dominance enjoyed by the variations of positivism in the formal and natural sciences.

The role of language in organizational studies

Obviously, the processes of 'thinking up' and writing scientific knowledge are closely interrelated to one another. Scientific writing is a "process of discovery" (Richardson 1994, p.523) that cultivates scientific thinking and scientific language is the very "subject matter of scientific deliberation"

(Astley 1985, p.499). Scientific disciplines are consequently best understood as complicated "word systems created and maintained through a process of negotiation between adherents to alternative theoretical languages" (Astley 1985, p.499). There is no determinate relationship between social reality, and the scientific language, through which different scientific communities present their theoretical interpretations of it. Empirical phenomena often lend support to multiple theoretical interpretations, and therefore multiple scientific vocabularies, at once (Astley 1985). No theoretical interpretation, and no scientific language or vocabulary, is by nature more right or wrong than its alternatives; it only captures, and accentuates, different aspects of the empirical phenomenon in question (Astley 1985). Scientific language is essentially the constitutive force through which the organizational scientist subjectively employs a given scientific vocabulary with the often implicit purpose of constructing a particular and always partial view of social reality, and therefore, there is no innocent value free textual staging of scientific knowledge (Richardson 1994). The organizational scientist must struggle to make explicit this inherent subjectivity; that only a partial interpretation of the empirical phenomenon in question is presented, that some theoretical preconceptions are at work in upholding this interpretation and that there are reasonable reasons why these theoretical preconceptions are favored over relevant alternatives (Astley 1985). The organizational scientist must, in other words, steer clear of the "questionable metanarrative of scientific objectivity" (Richardson 1994, p.518) and liberate himself from the futile compulsion to "write a single text in which everything is said to everyone" (Richardson 1994, p.518) all at once. This paragraph, and the preceding, has introduced an operational understanding of the core methodological doctrines upon which the present dissertation has been erected. In an intentional effort to avoid associating myself with 'social constructivism' or 'constructivism' (cf. e.g. Sismondo 1993; Hacking 1999), 'postmodernism'

(cf. e.g. Cooper & Burell 1988; Chia 1995), let alone any other ambiguous methodological 'ism' with which social and organizational scientists have increasingly been decorating themselves, I merely refer to this position as 'methodological relativism'. To recap, my methodological position implies a cherishment of organizational studies as a multi-paradigmatic scientific discipline, in which the construction of scientific knowledge about social reality is inherently a subjective enterprise, which is at all times mediated by scientific culture, and is at all times subject to be constructed differently. This position is very common among organizational scientist adhering to the interpretive paradigm within organizational studies (cf. Morgan 1980).

A brief exposition of my methodological position

Organizational neoinstitutionalism is a broad and heterogeneous school of thought within organizational studies, and a specific and not always entirely consistent scientific language or vocabulary, which has proven particularly useful in explanations of social stability and change alike. As has already been argued above, the actor-network theory that thrives within science and technology studies (STS) was the obvious, but incongruent, second choice. The particular understanding of organizational neoinstitutionalism that is both theorized (see Berger & Luckmann 1966) and operationalized (see e.g. Green 2004; Suddaby & Greenwood 2005; Colyvas & Powell 2006) within the present dissertation is subjectivist and congruent with, or a variation over, the interpretive paradigm (cf. Burell & Morgan 1979; Morgan 1980) or the constructivist paradigm (cf. Guba & Lincoln 1994) within organizational studies. It should be emphasized, though, that while most understandings of organizational neoinstitutionalism are subjectivist, recent research into institutional change especially has been less congruent with the interpretive paradigm than its radical humanist cousin (cf. Burell & Morgan 1979). I shall return to this subject, and its implications, in the discussion in chapter

XII. The interpretive paradigm in organizational studies, though, revolves around scientific inquiry into the "nature of the social world at the level of subjective experience" (Burell & Morgan 1979). Epistemologically, then, the interpretive paradigm comprises theoretical schools of thought that attempt to explain the nature of social reality within the specific 'frame of reference' of its participants themselves (Burell & Morgan 1979). Ontologically, then, adherence to the interpretive paradigm suggests an understanding of social reality as basically constituted by intersubjectively shared meanings (Burell & Morgan 1979). Social reality does not exist in a concrete sense 'out there', but in a cognitive sense 'in here', and must be approached on those terms.

Implied presumptions about the nature of society

It should be emphasized that adherence to the interpretive paradigm in organizational studies implies a presumption of social reality as being essentially "cohesive, ordered and integrated" (Burell & Morgan 1979, p.31), and an interest with "the nature of the status quo, social order, consensus, social integration and cohesion, solidarity and actuality" (Burell & Morgan 1979, p.31). Concerns with conflict, domination and contradiction are thus generally left outside of the field of view (Burell & Morgan 1979). These presumption and interests are made very obvious in the new sociological institutionalism of Berger and Luckmann (1966). Berger and Luckmann (1966) define social order, in the broadest possible sense of the term, as a human product and an ongoing human production. For reasons that lie far beyond the scope of the present discussion, but have to do with the biological apparatus of human beings and more specifically the instinctual underdevelopment of self-same in contrast to other higher mammals, human beings essentially have to construct and maintain a social order around themselves in order to substitute for the lack of a 'natural order' inscribed in their biological constitution (Berger & Luckmann 1966). That

is, whereas the relationship between any other higher mammal and its environment is biologically 'programmed' into its instincts from birth and thus determined in advance, the relationship between human beings and their environments is imperfectly structured biologically through "highly unspecialized and undirected" (Berger & Luckmann 1966, p.66) instincts, which give rise to an "inherent instability" (Berger & Luckmann 1966, p.70) necessitating the maintenance of a social order without which humanity would theoretically be cast into chaos (Berger & Luckmann 1966). Social order is thus a social product anthropologically necessitated, produced and reproduced change of 'world-openness' into 'world-closedness'; and it is the *raison d'être* of institutionalization (cf. Berger & Luckmann 1966).

VI.　Explanation of terminology

The present chapter briefly introduces and explains the terminology of the present dissertation. First, it introduces the 'cloud computing paradigm'. Next, it introduces institutions and institutionalization (but refer to chapters VII and VIII for further elucidation). Then, it develops some conjectures about the 'cloud computing paradigm' as an institution. Ultimately, it develops some conjectures about the professional community of information technology managers.

A brief of the 'cloud computing paradigm'

It cannot be emphasized enough in advance that 'cloud computing' is a label attached to disparate offerings by disparate vendors, inasmuch as it is a new 'paradigm' in the global computer industry. There is no reason to assume a priori that 'cloud computing' offerings have anything in common, let alone differ significantly from other historical offerings, to which the label has not been attached by their vendors. For instance, a market research report commissioned by the global computer industry trade association Software & Information Industry Association (2004) devoted itself entirely to a discussion of the 'software as a service' business model that had been embryonic since the late 1990s, and later came to epitomize the 'cloud computing paradigm', without as much as mentioning 'cloud computing'. A

2009 article in the information technology management trade publication InformationWeek testified to the state of affairs through its very eloquent expression that "[...] the verdict is in: Cloud computing is for real and it's here to stay. The problem is that no one can define what cloud computing is" (see Anon 2009b). It follows, then, that any statements about the 'cloud computing paradigm' should be carried forward with much cautiousness.

Before proceeding, it should be emphasized that within the context of the present dissertation, the 'cloud computing paradigm' is not understood ontologically as a management fad (cf. e.g. Abrahamson 1991) or fashion (cf. e.g. Abrahamson 1996), but as an institution. It is of course recognized that bandwagon effects can and do appear in the context of information technology management and other similar managerial domains below the overall strategic management of the organization (cf. Abrahamson 1996), just as the affiliation (cf. Abrahamson 1996; Green 2004), or the attempted affiliation (cf. Kieser 1997), of these perspectives with organizational neoinstitutionalism is recognized as well. But while the 'cloud computing paradigm' does indeed lend empirical support to theories of faddish and fashion-like bandwagon effects encouraging the adoption of new social structures, these perspectives are based on a number of theoretical assumptions that cannot reasonably be justified on the whole within this empirical context. Firstly, these perspectives share an inadvertent anti-innovation bias (which is ironic seeing as Abrahamson 1991 lashed out at the pro-innovation bias in the more traditional theoretical perspectives on innovation), manifest in the belief that social structures that are diffused by bandwagon effects have either no or adverse technical effects on adopting organizations. On the contrary, though, the 'cloud computing paradigm' can reasonably be expected to have substantial and positive effects on adopting organizations. Second, these perspectives greatly overemphasize the role of

fashion setters in the production and dissemination social structures, since typical faddish and fashion-like social structures (e.g. quality circles, TQM, LEAN and similar management concepts and models) have usually been purely ideational products absent a discernible original source of origin. On the contrary, however, the 'cloud computing paradigm' is both an ideational product and the material and ontologically 'real' technological structures associated with self-same. That is, whereas fads and fashions are generally rationalized myths adopted symbolically, but not behaviorally (cf. Meyer & Rowan 1977 's decoupling argument), the 'cloud computing paradigm' is seen as a genuine institution with some very 'real' behavioral consequences.

The 'cloud computing paradigm'[6,7] suggests that end users lease in computer capacity through services accessed by means of the internet. Accordingly, the 'cloud computing paradigm' embodies the vision of the internet as a vast 'cloud' into which end users 'push' their data through broad network access, and from which computer capacity – that is, the capacity to compute on that data and produce usable information – 'flows' back to them by the very same means. McAfee (2011) articulated the abovementioned argument as follows in a recent article in Harvard Business Review:

> *"Cloud computing is a sharp departure from the status quo. Today most companies own their software and hardware and keep them 'on premise' in data centers and other specialized facilities. With cloud*

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[6] As my focus is restricted to an interpretive way of seeing the 'cloud computing paradigm', technological and managerial aspects of the phenomenon are downplayed throughout the thesis. There are, however, many largely technological (see e.g. Youseff et al. 2008; Iyer & Henderson 2010) and largely managerial (see e.g. Rappa 2004; Carr 2005; Carr 2008; Creeger 2009; Babcock 2010; Marston et al. 2011; Venters & Whitley 2012) discussions of the 'cloud computing paradigm' available in the literature. The National Institute of Standards and Technology has also put forward a formal standard (Mell & Grance 2011).

[7] Some authors distinguish between public, private, community and hybrid forms of cloud computing (see e.g. Babcock 2010; Iyer & Henderson 2010; Mell & Grance 2011), the latter three being pragmatic alternatives to 'true' 'cloud computing', and thus 'cloud computing' in name only (Ho 2010; Dignan 2010). As Carr (2005, p.70) has argued, true 'cloud computing' "will have arrived only when an outside suppliers takes responsibility for delivering all of a company's IT requirements [so that] ownership of the assets that have traditionally reside inside [...] data centers be consolidated and transferred to utilities". Although I agree that private, community and hybrid forms of 'cloud computing' are little different from 'client-server computing', I write from an interpretive vantage point and cannot make such ontological claims.

computing, in contrast, companies lease their digital assets, and their employees don't know the location of the computers, data centers, applications, and databases that they're using. These resources are just 'in the cloud' somewhere."

(McAfee 2011, p.126)

In the 'cloud computing paradigm', then, the internet thus becomes a 'black box' of computer capacity. In engineering terminology, a 'black box' is commonly understood as a device "which performs intricate functions but whose internal mechanism may not readily be inspected or understood" and can only be apprehended "in terms of the relationship between [its] inputs and [its] outputs" (Oxford English Dictionary 2011, meaning 2). No term encapsulates the essence of the 'cloud computing paradigm' better. The 'cloud computing paradigm', while important, does not completely obviate the end users need for neither hardware or software, which remains the means of getting broad network access to the 'cloud' in the first place. But by promulgating the idea that end users should unburden themselves of the hardware and software capital goods that the 'mainframe paradigm' promulgated from the 1950s to the early 1990s, and the 'client-server paradigm' proceeded to promulgate from the early 1990s to the late 2000s, it embodies a fundamental shift in the consumption of computer capacity (Carr 2005; Carr 2008; McAfee 2011); that is to say, in its true incarnation, it represents no less than a "deep and permanent shift in how computing power is generated and consumed" (McAfee 2011, p.126).

The 'mainframe paradigm', according to historians of technology, thrived in an era from the early 1950s until the early 1990s (cf. Campbell-Kelly 2003; Ceruzzi 2003). In the 'mainframe paradigm', mainframe computers were hugely expensive organizational machines bought as capital goods, then installed in "climate-controlled rooms, presided over by a priesthood of

technicians" (Ceruzzi 2003, p.77) in whole new organizational departments blueprinted around them. The climate-controlled rooms became known as data centers (cf. Carr 2005; Carr 2008), the priesthoods of technicians as IT professionals and the new organizational departments as IT departments. In the era of the 'mainframe paradigm', computing was hugely expensive and performance dreadful compared to contemporary standards; however, efficiency was high since mainframe computers were fully utilized, due to the huge capital expenditures vested in them (cf. Ceruzzi 2003; Carr 2008).

The 'client-server paradigm', also according to historians of technology, superseded the 'mainframe paradigm' and thrived in an era from the early 1990s (cf. Campbell-Kelly 2003; Ceruzzi 2003) until the time of writing. In fact, the 'cloud computing paradigm' is too recent to figure in historical accounts of the global computer industry; its yet unresolved fate lying at the core of the specific research interest unfolded in the present dissertation. While the 'client-server paradigm' democratized organizational computing with personal computers and productivity software, data centers remained important as downsized mainframes were installed to mediate between the personal computers and central enterprise software (cf. Carr 2008). The personal computers became known as 'clients' relative to the downsized mainframes, and the downsized mainframes became known as 'servers' relative to the personal computers (cf. Carr 2008). In the era of the 'client-server paradigm', computing became inexpensive meanwhile performance increased exponentially; however, efficiency plunged since most clients and servers became underutilized, due to the waning capital expenditures vested in them (cf. Carr 2008).

A brief of institutions

It has been argued above that the 'cloud computing paradigm' is theorized as a premature institution (cf. Berger & Luckmann 1966). Generally speaking, institutions are deeper social structures that govern social life by providing stability and meaning, and have attained a relatively high degree of resilience, which makes them less susceptible to wearing away than other and more transient social structures (Scott 2003; Scott 2005; Scott 2007). Aspects of this general understanding are highlighted and downplayed by different old and new institutionalisms, and as shall be discussed in detail, the present dissertation takes the new sociological institutionalism and its organizational cousin, organizational neoinstitutionalism, as its theoretical point of departure. Following Berger and Luckmann (1966), an institution is a slice of social order in the form of a shared meaning system or cognitive schema, that codifies into a 'typology of roles'[8] the meanings that its participants have come to take for granted about a corresponding slice of social reality. It should be emphasized that when institutionalized, a slice of social reality is subsumed under social control, meaning that the behavior of social actors proceed in an orderly fashion regardless of sanctions; yet, since institutionalization is a process and not a property variable, complete institutionalization is theoretically imaginable, while at the same time also highly dubious empirically (Berger & Luckmann 1966). A new sociological and organizational understanding of institutions is expounded at significant length in chapter VIII.

A brief of institutionalization

Institutions are never created instantaneously, but through 'sense-making' processes that unfold during the course of longitudinal social interactions

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[8] It should be notes that as Berger and Luckmann (1966) do not spell out the connotation and significance of roles in institutions, roles are downplayed within the context of the present dissertation.

between social actors (Berger & Luckmann 1966). However, once created, institutions exist in a premature state that is precarious and fragile (Berger & Luckmann 1966). For institutions to advance into their mature state and sediment themselves, thus attaining the relatively high degree of resilience mentioned above, they must cut the umbilical cord to their social origins through objectivation and take on a seemingly objective facticity (Berger & Luckmann 1966). This process depends entirely on the transmittance of the institutions to outsiders that are unacquainted with their social origins (Berger & Luckmann 1966). For the transmittance of institutions to succeed, they must be explained and justified to the outsiders, who had no part in the initially unfolded 'sense-making' processes themselves and must therefore be persuaded into taking them for granted as legitimate (Berger & Luckmann 1966). The process through which the creators of institutions explain and justify them to outsiders is institutional legitimation. A new sociological processual understanding of institutionalization is expounded at significant length in chapter VIII.

A brief of the institution of the 'cloud computing paradigm'

The premature institution of the 'cloud computing paradigm' essentially categorizes into a 'typology of roles', a complex web of shared meanings that global computer industry participants have come to take for granted about the future organization of the industry, through 'sense-making' processes that unfold during the course of longitudinal social interactions between them. It can reasonably be conjectured, that this process unfolded in the longitudinal period from emergence of the first time-sharing and utility computing services in the mid-1960s and their collective collapse in the mid-1970s (cf. Campbell-Kelly 2003), over the emergence of application service providers (ASP's) in the late 1990s and their likewise collective collapse in the early 2000s (cf. Campbell-Kelly 2003), to the emergence of

more sound software-as-a-service business models in the mid-2000s and the convergence around the 'cloud computing paradigm' in the late 2000s[9].

New meaningful relationships between new types of situations, new behaviors and new social actors have been institutionalized into new 'roles' available to global computer industry participants. These roles define a set of new meaningful organizational forms and a set of new meaningful exchange transactions to go along with them – the latter being 'glue' that binds the organizational forms together. Following the usage of the term by Haveman and Rao (1997), I take 'organizational forms' to connote the equivalents of new 'business models' (cf. e.g. Magretta 2002) in managerial jargon. The three organizational that have emerged with the premature institution of the 'cloud computing paradigm' (cf. Youseff et al. 2008; Iyer & Henderson 2010; Marston et al. 2011); the 'software as a service' vendor, the 'platform as a service' vendor and the finally 'infrastructure as a service' vendor. Although analytically distinct, these organizational forms coexist empirically in the same organizations within the global computer industry, suggesting that the organizational form of the 'cloud service vendor' is a more productive generalization. Within the present context, the technical and instrumental specifics of these organizational forms are unimportant; they all revolve around the leasing of computer capacity, on different levels of technical abstraction, by means of the internet. What is important, nonetheless, is to emphasize that organizational forms embody institutions and coevolve with them (Haveman & Rao 1997). That is, the organizational forms of the 'software as a service' vendor, the 'platform as a service' vendor and the 'infrastructure as a service' vendor can be expected to diffuse and proliferate, within the global computer industry, in conjunction with the institutionalization of the 'cloud computing paradigm'. Similarly, they can

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[9] Refer to chapter IV above, in which the apparent convergence of the global computer industry among the 'cloud computing paradigm' has been commented upon.

be expected to withdraw and wane in conjunction with yet inconceivable future attempts at its deinstitutionalization (cf. Oliver 1992). The structural and relational aspects of the institution are very purposefully downplayed, in favor of its more cognitive aspects, throughout the present dissertation.

A brief of the professional community of information technology managers

The professional community of information technology managers occupies the formal hierarchical positions, which are responsible for the adoption of the 'cloud computing paradigm' and its associated technological structures in organizational life. These formal hierarchical positions are variously labeled chief information officers (CIO's), chief technology officers (CTO's) and information technology directors. A recent survey reported that 66 percent of the global information technology managers were part of the business executive management committee of the organizations that they represented, and 38 percent reported directly to their corresponding chief executive officers (CEO's) (Johnson 2011). Therefore, in terms of the exchange transactions between global computer industry participants *at large*, and organizational life *at large*, this professional community is *the* personification of the latter.

I intentionally use the term 'professional community' instead of the term 'profession', since the global community of computer industry professionals (of which, it follows, the professional community of information technology managers is part) is neither as thoroughly organized nor as historically and institutionally influential as other more entrenched professions – e.g. the profession of the law, the profession of accounting or the profession of medicine to name but a few examples – which have repeatedly been made subject to analysis by organizational neoinstitutionalists. That is, the more entrenched professions occupy influential societal 'roles' that are deeply

involved with the production of regulation, which buttresses their status in society, and with the production formal education, which accredits new professionals according to aforesaid (cf. DiMaggio & Powell 1983; Scott 2008b).

Although the global community of computer industry professionals has its own professional organizations, and is represented at every business school and university of technology and engineering, it is a loosely coupled system in comparison to the more entrenched professions briefly exemplified in the discussion above. The global community of computer industry professionals is, of course, not entirely absent of those types of institutional agents that Scott (2008b) identify with professional authority. At the business schools, and the universities of technology and engineering, 'creative professionals' yield scientific knowledge, from technological inventions to management models, that seeps into and impacts the global computer industry (cf. Scott 2008b). In the technology services and consulting sub industry, 'carrier professionals' actively circulate both scientific and industrial knowledge between industry players (cf. Scott 2008b). Finally, the industry is packed with 'clinical professionals' (cf. Scott 2008b); formally educated 'university specialists' (cf. DiMaggio & Powell 1983) from a wide range of international engineering and technology universities. Yet, the true 'lords of the dance' in the global computer industry, are the established industry players, and not the professionals. The industry is powered by their industrial laboratories.

VII.   Theoretical backdrop

The present chapter initially introduces new institutionalism in as a broad school of thought, presents a prolegomena and introduction to organizational neoinstitutionalism, and then proceeds to discuss its core tenets and problems. Ultimately, a number of corrections are presented.

"Institutions are social structures that have attained a high degree of resilience. They are composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life."

(Scott 2003, p.880)

Based on an extensive review of old and new institutionalisms across the social sciences, Scott (see e.g. 2005 for his theoretical ambitions) proposed the pervasive definition of institutions cited above, as the foundation of his omnibus conception of institutions. I present his definition as one among many possible points of departure into organizational neoinstitutionalism, recognizing its grossly oversimplifying and synthesizing nature. Limitations aside, Scott's (2003) definition is the only one, that manages to condense the resemblances in how institutions are understood *at large* across the multifarious scientific discipline of the social sciences "united by little but a

common skepticism towards atomistic accounts of social processes and a common conviction that institutional arrangements and social processes matter" (DiMaggio & Powell 1991, p.3). New institutionalism has become one of the most prominent schools of thought within the social sciences in general and within the scientific discipline of organizational studies in particular. Every scientific discipline within the social sciences seems to have its own favored new institutional theories, and even within the same disciplines of the social sciences, there are a more or less infinite number of theoretical variations over the same themes (DiMaggio & Powell 1991; Greenwood et al. 2008). As a scientific discipline, organizational studies is no exception (DiMaggio & Powell 1991). The particular new institutionalism that flourishes within organizational studies is commonly referred to as new organizational institutionalism, or more eloquently as organizational neoinstitutionalism, and it is this portion of the new institutional literature that constitutes the theoretical backdrop of the present dissertation.

A prolegomena to organizational neoinstitutionalism

My purpose, with the present section, is to offer a brief prolegomena to organizational neoinstitutionalism. The organizational neoinstitutionalism, that was originally instituted by scholars at Stanford University and Yale University during the late 1970s and early 1980s (cf. Scott 2005), has become one of the most ubiquitous schools of thought within organizational studies. As the introductory chapter in a recent encyclopedic volume on organizational neoinstitutionalism went so far as to claim, it has perhaps the dominant approach to understanding organizations and organizational life in general, effectively superseding both the population ecology and resource dependency perspectives along the way (Greenwood et al. 2008). The observation that some of the seminal theoretical papers of the tradition

have risen to top the list of most cited sociological papers ever published sustains this line of argument[10].

It goes without saying that an interest with institutions in organizational life is at the core of organizational neoinstitutionalism, making it all the more interesting to observe, how institutions are seldom defined in the writings of its authors (cf. e.g. DiMaggio & Powell 1991). If institutions were defined, the definitions would reveal substantial disagreement. That is, reviewers of organizational neoinstitutionalism have found consensual agreement as to what the school of thought is not, but very little agreement as to what it is (Zucker 1987; Scott 1987; DiMaggio & Powell 1991; Greenwood et al. 2008; Wooten & Hoffman 2008). Part of the reason is that there is not one single organizational neoinstitutionalism, but manifold substantially different sub variants, each contradicting each other in important ways (Zucker 1987; Scott 1987; DiMaggio 1988; DiMaggio & Powell 1991). Zucker (1987), in her early review, found organizational neoinstitutionalism inherently difficult to explicate. Scott (1987), in his also early review, found that organizational neoinstitutionalism lacked conceptual transparency, offered disparate definitions of central concepts with a substantial variation among them, and was characterized by having a number of substantially different sub variants coexisting alongside one another. DiMaggio (1988, p.17) followed suit in his discussion paper regarding the role of interest and agency in organizational neoinstitutionalism, generalizing with much unease about a school of thought revealing "so much diversity in outlook and analytic focus as to suggest that what may seem, at a distance, to be a theory is in reality several theories (or, in some cases, approaches to theories) that are not on every point consistent with one another". However, all things considered, it may in fact be the interpretive stretch of organizational neoinstitutionalism

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[10] Citations to scientific papers can be monitored using the Social Science Citation Index (SSCI).

that many organizational scientists find alluring and employ to their own advantage (cf. Mizruchi & Fein 1999). As Czarniawska (2008, p.770) has argued, organizational neoinstitutionalism is "a framework, a vocabulary, a way of thinking about social life, which may take many paths". It is up to the organizational scientist to expound which path is taken (cf. Scott 1987).

An introduction to organizational neoinstitutionalism

The preceding section has offered a brief prolegomena to organizational neoinstitutionalism and underscored how the school of thought cannot be approached with a preconception of theoretical integrity or coherence. My purpose, with the present section, is therefore to offer a short introduction to organizational neoinstitutionalism, identifying those few consistencies that do exist between its sub variants and altogether make the school of thought discernible.

Firstly, it should be emphasized that organizational neoinstitutionalism diverges from other branches of new institutionalism by virtue of having a close association with the scientific discipline of sociology and therefore a distinct sociological flavor (DiMaggio & Powell 1991; Scott 2008a; Scott 2005). Organizational neoinstitutionalism is, in other words, underpinned by new sociological institutionalism. Generally speaking, new sociological institutionalism distinguishes itself from its alternatives by virtue of its preoccupation with "cognitive and cultural explanations" (DiMaggio & Powell 1991, p.8) of institutionalization[11]. New sociological institutionalism has been quite tolerant with regards to the range of social structures to which institutionalization might apply, but restrictive with regards to the

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[11] Alternative new institutionalisms, in contract, have been preoccupied with regulative and normative explanations, associating institutionalization with specific social structures such as formal regulation, standards, and contracts regardless of their relative resilience (DiMaggio & Powell 1991). In these new institutionalisms, institutions are "the products of human design, the outcomes of purposive actions by instrumentally oriented individuals" that are deliberately put in place by agentic social actors in order to serve desired social purposes (DiMaggio & Powell 1991, p.8).

attributes that social structures much have acquired in order to become institutions (cf. DiMaggio & Powell 1991). Social structures must generally have acquired a taken-for-granted "rulelike status in social thought and action" (originally underscored by Meyer & Rowan 1977, p.341; cited in DiMaggio & Powell 1991, p.9) for them to characterized as institutions in the new sociological sense of the term. In new sociological institutionalism, institutionalization is a historical process that cannot necessarily be traced back through time to the agentic actions of distinguishable social actors (DiMaggio & Powell 1991). Finally, and also in view of that, new sociological institutionalism involves an understanding of institutions as independent variables as "a matter of definition" (DiMaggio & Powell 1991, p.10). That is, all social action is embedded in and shaped by institutions (cf. Scott 1987), that are reproduced because their participants are unable to "conceive of appropriate alternatives" (DiMaggio & Powell 1991, p.11). It goes without saying that a juxtaposition of old and new sociological institutionalism lies beyond the scope of the present dissertation. Yet, in view of the preceding argument, it should be noted how the new sociological institutionalism diverges from the old sociological institutionalism by virtue of its cultural and cognitive a basis of reproduction through taken-for-grantedness in the background of cognition, not by moral and evaluations in the foreground. It arose within the cognitive turn in social theory (DiMaggio & Powell 1991).

The overarching theoretical focus

Secondly, while obvious, it should also be emphasized that organizational neoinstitutionalism diverges from other branches of new institutionalism by virtue of its restricted focus on institutionalization in organizational life. Generally speaking, as Tolbert (1985, p.2) emphasized, "widespread social conceptions of appropriate organizational form and behavior constitute the institutional environment of organizations". Likewise generally speaking,

two core defining elements characterize the consensual understanding institutions in organizational neoinstitutionalism (Zucker 1987). Firstly, institutions have a perceived exteriority to their participants expressed their "rule-like, social fact quality" (Zucker 1987, p.444). Secondly, institutions have a perceived objectivity expressed through their "embedding in formal structures [...] that are not tied to particular actors or situations" (Zucker 1987, p.444). The first core defining element is a direct extension of previously discussed underpinnings of organizational neoinstitutionalism in new sociological institutionalism, stressing the cultural and cognitive basis of reproduction. The second core definition element is an important restriction, because it emphasizes, that organizational neoinstitutionalism is preoccupied with institutions that materialize themselves in formal structural arrangements in organizational life; blueprinted organizational forms, contractual exchange transactions, positions, policies, programs and procedures (cf. e.g. Meyer & Rowan 1977). This is almost a compulsory element in an organizational neoinstitutionalist explanation (Zucker 1987).

Both Zucker (1987) and Scott (1987) accentuated, in their early reviews of organizational neoinstitutionalism, that the school of thought has multiple sub variants with each their different theoretical presumptions. However, one sub variant in particular has managed to become representative of the consensual understanding of organizational neoinstitutionalism presently shared amongst organizational scientists[12]. This specific sub variant gave rise to numerous theoretical ideas, but generally speaking, it was the view of organizations as existing in institutional environments and organizational fields that constituted the overarching theoretical backdrop against these ideas were all cultivated. The conception of institutional environments was pioneered by Meyer and Scott (1983), along with associates such as Rowan

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[12] Zucker (1987) referred to this sub variant as the "environment as institution"-approach, whereas Scott (1987) referred to it as the "institutions as a class of elements"-approach.

and Deal, and epitomized by Meyer and Rowan's (1977) seminal journal paper. It was later contested by alternate conceptions amongst which the conception of organizational fields, pioneered by DiMaggio and Powell (1983), prevailed to become the preferred unit of analysis in organizational neoinstitutionalism *at large* (Powell 2007; Wooten & Hoffman 2008). Like DiMaggio (1988), I generalize about this sub variant with much trepidation, and with the modest ambition of discussing some (but *not* all) of the core ideas that prevailed and characterized organizational neoinstitutionalism from the late 1970s until the time of writing. I approach the sub variant based on my understanding the way in which it unfolded, paying little or no attention to largely neglected aspects of the early theoretical formulations.

The overarching theoretical backdrop

Up until the late 1970s, organizations were generally (but *not* exclusively) seen as technical production systems in technical environments, the formal structures and informal behaviors of which were fashioned more or less absolutely by the technical requirements stemming from these (Scott 1987). Organizations were portrayed as social actors, who responded to situational circumstances in their technical environments, through the means of rational interpretation and appropriate action (Greenwood et al. 2008). The technical environments of organizations were generally understood to be little more than a loci of resources, of information, of competitors and other exchange partners (Scott 1987). It should be noted how terms such as 'technical', 'economical' and even 'market' environments and requirements are used interchangeable by organizational scientists in discussions of the orthodoxy that organizational neoinstitutionalism superseded. These terms all refer to the same underlying instrumental conception of organizational environments. It was against this instrumental contemporary theoretical backdrop that this specific sub variant of organizational neoinstitutionalism

encouraged a renewed interest with the consequences of the more salient aspects of organizational environments on organizational structures, and somewhat less explicitly, organizational behaviors (Scott 1987; Meyer & Rowan 1977; DiMaggio & Powell 1983). This renewed interest embodied a shift in the modus of explanations of organizational structure from the instrumental efficiency or productivity requirements of technical exchange transactions on the competitive marketplace to the broadly defined societal expectations that stemmed from their institutional environments and their more immediate organizational fields (cf. Meyer & Rowan 1977; DiMaggio & Powell 1983; Scott 1987). The initial theoretical ambition was not to substitute technical environments with institutional environments, and some authors (much evident in Meyer & Rowan 1977; less evident in DiMaggio & Powell 1983) accorded technical environments considerable attention. Later theoretical formulations were more bold and treated technical environments as subsumed within their institutional counterparts (Scott 1987; Zucker 1987; Greenwood et al. 2008).

Sources and outcomes of institutionalization

Central to this specific sub variant of organizational neoinstitutionalism was a concern with institutional environments as sources of rationalized myths defining, in a vocabulary of societally expected or socially desirable formal organizational arrangements, the organizational structures that an organization should adopt and maintain in order for it to be a rationally managed organization (Meyer & Rowan 1977). It should be emphasized that the concern with institutional environments, as it surfaced in organizational neoinstitionalism, was tied to a particular preoccupation with the whole modern institutional system as hotbed of an increasing rationalization of organizational life (Zucker 1987). Zucker (1987, p.446), in an early review, thus described the institutional environment as a "zeitgeist-like world-wide

phenomenon, that fuels growth of the state". Accordingly, the institutional environment was not a source of institutions per se, but of rationalized myths as a particular type of institutionally endorsed formal structural arrangements that were binding on organizational life. Furthermore, rather than institutions per se, rationalized myths were carriers (cf. Scott 2003) of the institution of rationality (cf. Meyer & Rowan 1977). Rationalized myths flowed in the institutional environment in the form of prescriptions that simultaneously identified societal expectations, as if they were technical requirements, and specified how for organizations to pursue them rationally (Meyer & Rowan 1977). Perhaps more central to this specific sub variant of organizational neoinstitutionalism was a concern with organizational fields as sources of institutional mechanisms of isomorphic change (DiMaggio & Powell 1983). While organizational fields were understood to be reminiscent of industries, or an aggregate of organizations involved in exchange transactions in a trade or manufacture, they were understood to additionally include the "totality of relevant actors" altogether constituting "a recognized area of institutional life" (DiMaggio & Powell 1983, p.148). It should be emphasized that the concern with Bourdieu's earlier conception of social fields (Scott 2008a; Powell 2007), as it surfaced in organizational neoinstitionalism, was also tied to a particular preoccupation with the accumulative rationalization of organizational life. The conception of organizational fields has later spun off abundant new conceptions subtly or overtly contradictory to the original conception (see Mazza & Pedersen 2004; see e.g. Hoffman 1999 for an example; Scott 2008a for discussions). The validity of these conceptions, and their relevance to organizational neoinstitutionalism, remains an open question.

Yet, two central point of divergence should be emphasized. Firstly, whereas the theoretical pioneers of the institutional environment were preoccupied

with rationalization of modern society *at large*, the theoretical pioneers of the organizational field were preoccupied with the structural homogeny resulting from rationalization of organizational fields as specific slices of social reality; more unambiguously, slices of social reality constituted by discernible types of social actors whose social interactions with one another revolved around a specific trade or manufacture, and were underpinned by the mechanisms of institutional isomorphic change rendering it more than 'just' an industry (cf. DiMaggio & Powell 1983; see also Wooten & Hoffman 2008). Secondly, both perspectives essentially understood organizational adoption of formal structural arrangements as a participation in an ongoing institutional reproduction driven by conformance to institutionally defined societal expectations, and manifested in the maintenance of institutionally defined societal legitimacy; an institutional reproduction which granted stability to organizational affairs by securing access to external resources and thus ultimately increased the survival prospects of organizations in the long run (Meyer & Rowan 1977; DiMaggio & Powell 1983; Zucker 1987). Organizations having similar institutionally endorsed formal structural arrangements imposed upon them, whether through rationalized myths or mechanisms of isomorphic change, were therefore understood to become isomorphic with one another in terms of their organizational structures. However, while the theoretical pioneers of the institutional environment understood structural isomorphism as a largely superficial and ceremonial phenomenon (Meyer & Rowan 1977), the theoretical pioneers of the organizational field understood structural isomorphism as a phenomenon that profoundly affected both "organizational forms and practices" in spite of its ritual aspects (DiMaggio & Powell 1983, p.148). The theoretical pioneers of the institutional environment understood it as overflowing with generalized, ambiguous and sharply inconsistent rationalized myths that promulgated institutionally endorsed formal structural arrangements which

were, in turn, profoundly inefficient when assessed in sternly technical terms by those organizations to whom they applied (Meyer & Rowan 1977). In order to cope with such sharply defined inconsistencies, organizations had no other option than to decouple their informal behaviors from the institutionally endorsed formal structural arrangements, which they yet incorporated into their organizational structures (Meyer & Rowan 1977). The theoretical pioneers of the organizational field, on the other hand, understood it to become progressively consistent and constraining through institutional reproduction (cf. DiMaggio & Powell 1983).

The elusive role of regulative and normative institutional reproduction

Central to this specific sub variant of organizational neoinstitutionalism is also a number of important limitations and inconsistencies that should be emphasized. The first limitation or inconsistency involves a departure from the alleged roots in new sociological institutionalism with regards to the attention accorded that is to regulative and normative explanations and the constant quest of organizations for societal legitimacy. DiMaggio (1988) went as far as to refer to the latter as domain assumption of organizational neoinstitutionalism, but as I shall argue, it is dubious whether that is the case. I have argued that the new sociological institutionalism distinguishes itself from its alternatives by virtue of a preoccupation with cognitive and cultural explanations regarding the institutionalization of social structures (DiMaggio & Powell 1991). Although institutionalization is typically understood as a qualitative state, institutions are understood to become discernible only insofar as they have acquired a taken-for-granted "rulelike status in social thought and action" (Meyer & Rowan 1977, p.341). Some organizational neoinstitutionalists have went as far as to hypothesize that the very existence of regulative and normative sanctions, in a given slice of social reality, may erode extant cognitive and cultural institutions by

rendering alternatives conceivable (Zucker 1987). Generally speaking, however, organizational neoinstitutionalists refrain from regulative and normative explanations unless these locate the modus of institutional reproduction in cognitively and culturally taken-for-granted assumptions, demonstrating how regulative and normative sanctions are fundamentally superfluous, when cognitive and cultural institutions have already subsumed a slice of social reality under control (Greenwood et al. 2008; cf. Berger & Luckmann 1966).

Yet, in contrast to this consensual understanding of the common theoretical enterprise, the theoretical pioneers of both institutional environments and organizational fields accorded much attention to regulative and normative production and reproduction of both rationalized myths and mechanisms of isomorphic change (Meyer & Rowan 1977; DiMaggio & Powell 1983). By virtue of their definitional discussion of institutions, in which they referred to Berger and Luckmann (1966), Meyer and Rowan's (1977) argument largely obfuscated societal expectations "enforced by public opinion, by the views of important constituents, by knowledge legitimated through the educational system, by social prestige, by the laws, and by the definitions of negligence and prudence used by the courts" with cognitively and culturally taken-for-granted institutions. This gives way to an "inherent ambiguity in their underlying phenomenological argument" (Tolbert & Zucker 1996, p.179), for the reason that it systematically maintains that organizations take rationalized myths for granted as legitimate, while at the same time perceiving them as deeply illegitimate directions for their own behavior. Meyer and Rowan (1977) accordingly leave behind the theoretical paradox of how a formal structural arrangement "can maintain its symbolic value in the face of widespread knowledge that its effect on individuals' behavior is negligible" (Tolbert & Zucker 1996, p.180). Although DiMaggio and Powell's

(1983) argument is without such deeply rooted inconsistencies, it similarly accords attention to coercive mechanisms of isomorphic change, that more or less subtly impel organizations to conform with societal expectations in order to maintain their institutionally defined societal legitimacy and thus increase their survival prospects in the long run. Such explanations, while employed by some organizational neoinstitutionalists, are essentially about resource dependencies (Tolbert & Zucker 1996; Greenwood et al. 2008).

Corrective: A focus on cultural and cognitive institutional reproduction

Based on his extensive review of institutionalism within the social sciences, Scott (2003; 2007) identified regulative explanations with the works of institutional economists, economic sociologists, and political scientists that work within scientific disciplines where institutionalization has another meaning than in organizational studies. Moreover, he identified normative explanations with the works of sociologists and social psychologists within the old sociological institutionalism (Scott 2003; Scott 2007). Eventually, he emphasized that organizational sociologists, cultural anthropologists and cognitive philologists prefer institutional explanations where "not rules or normative expectations, but taken-for-granted beliefs […] are seen to underlie social order" (Scott 2003, p.881). Generally speaking, two defining processes of institutional reproduction are thus central to organizational neoinstitutionalism (Zucker 1987). It should be emphasized that cultural and cognitive taken-for-grantedness, while not always spelled out explicitly (see e.g. DiMaggio & Powell 1983), is at the core of both processes. Firstly, some institutions are primarily reproduced through imitation or mimicry, as organizations adopt the formal structural arrangements of other similar organizations under circumstances of uncertainty (Zucker 1987). That is, as uncertainty about technical alternatives arises, organizations essentially model themselves on those of their peers that they perceived as being more

successful than themselves (DiMaggio & Powell 1983), leading widespread formal structural arrangements to become institutionally endorsed amongst the participants of an institutional environment or an organizational field. Secondly, some institutions are mainly reproduced for normative reasons, as "social facts [...] from external sources such as the professions" (Zucker 1987, p.444), become widespread institutionally endorsed formal structural arrangements amongst the participants of an institutional environment or an organizational field. DiMaggio and Powell (1983) primarily identified normative reasons of institutional reproduction with two phenomena. Firstly, the authors identified normative mechanisms with the rise of formal education in modern society and the consequences of such, emphasizing both the production of alumni with a shared cognitive base in academia, and the hiring, socialization and promotion policies in the field of practice, subsequently ensuring these alumni access to closely guarded career tracks in organizational life (DiMaggio & Powell 1983). Secondly, they identified normative mechanisms with the increasing professionalization efforts in the field of practice, producing more or less densely knitted professional networks in-between organizations, through which institutions flowed from center towards periphery (1983). It is important to emphasize the crucial difference between normative 'reasons' for institutional reproduction, and normative institutions. The former implies only that cultural and cognitive institutions embody both taken-for-granted values and taken-for-granted knowledge (viz. *'normative'* meaning knowledge), not that institutions are norms.

An overemphasis on relational and structural aspects of environments

Conceptions of organizational fields have generally accorded excessive attention to their relational and structural features (cf. Scott 2008a), thus neglecting their more salient features. Organizational fields were basically

conceptualized as immediate interorganizational networks, produced and reproduced through the same social interactions between their participants, through which the mechanisms of institutional isomorphic change flowed and were produced and reproduced as well (DiMaggio & Powell 1983). DiMaggio and Powell (1983) were ambiguous about the actual processes that reproduced organizational fields, but emphasized the 'connectedness' and 'structural equivalence' of types of social actors, only to mention shared meaning peripherally. Firstly, connectedness implied that social actors in organizational fields needed interact neither formally nor directly with one another, but could do so either informally or indirectly through different types of intermediaries that were social actors in the organizational field themselves (DiMaggio & Powell 1983)[13]. Secondly, structural equivalence implied that specific types of social actors became reciprocally discernible by having "ties of the same kind" (DiMaggio & Powell 1983, p.148) to the same set of other types of social actors within the organizational field[14]. That theoretical conceptions of institutional environments suffer from the same weakness as conceptions of organizational fields in this regard, is partially concealed by them having a magnitude rendering them less susceptible to the empirical analysis of discernible types of social actors. Institutional environments, much like organizational fields, were basically conceptualized as aggregated and more hazy interorganizational network structures that produced and reproduced the rationalized myths that flowed between their participants (cf. Greenwood et al. 2008; Meyer & Rowan 1977). Scott's (2008a, p.434) generalization that organizational fields are "interdependent populations of organizations participating in the same cultural and social sub-system" is thus often masked by a preoccupation

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[13] For instance, informal personnel flows and indirect social interactions through common membership of a professional association are social interactions between social actors in an organizational field.
[14] For instance, the professional associations of an organizational field could have little or no direct interaction with one another, but still become discernible as a type of social actors through having precisely the same type of transactions with the resource suppliers and consumers in their field.

with only those organizations, the mechanisms of institutional reproduction between which are discernible.

Corrective: A focus on sub-universes of meaning

While organizational neoinstitutionalists have generally overemphasis the relational and structural aspects of environments, Berger and Luckmann (1966) made reference to sub-universes of meaning. A sub-universe of meaning, according to Berger and Luckmann (1966), is a social edifice of meaning that is cognitively 'carried' by and only relevant to a particular collectivity within the larger institutional environment. That is, whereas organizational neoinstitutionalist conceptions of institutional environments and organizational fields direct attention towards the more tangible aspects of environments, the conception of sub-universes of meaning conversely draw attention to the more or less esoteric shared meaning systems of social groups, regardless the structural and relational aspects of their interaction (cf. Berger & Luckmann 1966). The professional community of information technology managers, in this sense, is therefore a sub-universe of meaning.

VIII. A theory of institutionalization

The present chapter in initially discusses the reasons why I adopt the new sociological institutionalism particularized by Berger and Luckmann (1966) as my theoretical foundation, proceeds to discuss the foundations of institutionalization. Ultimately, it proceeds to discuss the processes of institutional sedimentation and reification.

Based on the new sociological institutionalism particularized by Berger and Luckmann (1966), the present chapter outlines the core tenets of a theory of institutionalization. While especially the former of these tenets are offered mostly as a circumstantial clarification, the latter are later operationalized methodically based on organizational neoinstitutionalist interpretations (cf. Green 2004; Suddaby & Greenwood 2005; Colyvas & Powell 2006). The reader will note how I thus pay a not entirely insignificant revisit to some of the theoretical roots of organizational neoinstitutionalism (see also the discussion of presumptions about the nature of society in chapter V).

The open question, then, is why I have chosen this specific theoretical and methical framework over the growing plethora of alternatives that the institutional change sub portion of organizational neoinstitutionalism has

to offer (cf. Battilana et al. 2009). Few organizational neoinstitutionalists would probably identify neither Berger and Luckmann (1966), nor most of their followers in organizational neoinstitutionalism (see e.g. Zucker 1977; Tolbert & Zucker 1996), as neither headliners nor notable figures within the institutional change sub portion of organizational neoinstitutionalism. And understandably so; that is, Berger and Luckmann (1966) wrote from the vantage point of new sociological institutionalism before organizational neoinstitutionalism was instituted (by Meyer & Rowan 1977; Zucker 1977), and their most followers, before institutional change became discernible as a sub portion of organizational neoinstitutionalism. There are two reasons. Firstly, I find the depth its insights either misunderstood (see Meyer & Rowan 1977) or lost in translation (see Zucker 1977; Tolbert & Zucker 1996). I can only speculate, at this point, that this has to do with the set of limitations imposed upon organizational scientists by the literary genre of the academic journal article.

Secondly, I find that later correctives of organizational neoinstitutionalism (see DiMaggio 1988) and subsequent work that it has encouraged, has generally overemphasized the importance of *self*-interest and agency in institutional production and reproduction, conveying the understanding that social actors shrewdly engage in 'institutional work' in order to satisfy their own needs – at the detriment of the needs of others – upon whom they basically impose their own will. Against this theoretical turn in organizational neoinstitutionalism, my objection is that of agentic social actors often act upon their own interests, and satisfy their own needs, in a much less ingeniously and much more 'collectively oriented' way (cf. Berger & Luckmann 1966).

DiMaggio (1988) argued persuasively, but critically, that organizational neoinstitutionalists approach social reality from the vantage point of two

particular universal domain assumptions anchoring institutional arguments meaningfully on the individual level. Most importantly in the present context, he argued that humans prefer certainty and predictability as social actors in organizational life (DiMaggio 1988)[15]. He then unjustly proceeded to argue that the disinterest with interest and agency in organizational neoinstitutionalism rendered the school of thought unable to provide a complete theory of institutions, suggesting that such 'theory' should be concerned with institutionalization as "a product of the political efforts of actors to accomplish their ends" (DiMaggio 1988, p.13), as dependent on the "relative power of the actors who support, oppose or otherwise strive to influence it" (DiMaggio 1988, p.13), and as following an internal logic of contradiction. Much later institutional change literature has exhibited the same tendency to overemphasize institutional embeddedness, conveying the understanding that all institutional change takes places in hotbeds of contradictory institutions (see e.g. Seo & Creed 2002 for a theoretical exposition).

However, within the context of the present dissertation, it is important to emphasize the paradigmatic nature of DiMaggio's (1988) argument; that is, by virtue of his obvious adherence to the radical humanist paradigm within organizational studies (cf. Burell & Morgan 1979), his argument based upon paradigmatic presumptions about the nature of society, which are deeply incommensurable (cf. Kuhn 1996; Burell & Morgan 1979; Morgan 1980) with the paradigmatic presumptions in the interpretive new sociological institutionalism of Berger and Luckmann (1966). That is, an acceptance of DiMaggio's (1988) argument would require an impossible 'paradigmatic leap' on the level of meta-theoretical presumptions. As Burell and Morgan

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[15] He also argued that the interest of organizations as social actors in survival lead them to comply with the demands of other social actors, on which they depend for resources and legitimacy (DiMaggio 1988). As shall be discussed in considerable detail presently, this 'domain assumption' is at risk of conflating organizational neoinstitutionalism with resource dependency theory, and is perhaps not central to the new sociological institutionalism (cf. Tolbert & Zucker 1996; Greenwood et al. 2008).

(1979, p.25) argued, paradigms are "mutually exclusive, [...] accepting the assumptions of one, we defy the assumptions of all the others".

Habitualization of behavior by social actors

Having briefly touched upon the anthropological necessity and nature of social order, I shall now proceed to a theory of institutionalization based on the principal tenets of the new sociological institutionalism of Berger and Luckmann (1966). The initial phase in the formation of any social order is, according to Berger and Luckmann (1966), essentially the habitualization of behavior by human beings. It is important to emphasize that while habitualization of behavior is embryonic in any process of institutionalization, it paves the way for institutions, but does not necessarily manifest itself in their formation (Berger & Luckmann 1966). Whether or not institutions form, and the relative strength with which they subsume behavior under social control, is contingent upon the subsequent phases of the process of institutionalization. Habitualization of behavior is a fundamental anthropological necessity, and a psychological process, that proceeds undeterred irrespective of social interaction (Berger & Luckmann 1966).

Habitualization of behavior fundamentally point toward that human beings automatically cast frequently repeated behaviors that are necessitated by frequently re-experienced situations, into patterns of behavior that can then be reproduced relatively effortlessly over and over again in the same way in the future (Berger & Luckmann 1966). As human beings re-experience the same situations over and over again, habitualized behaviors essentially become the more or less convenient reactions that they employ in response to them. It should be noted here that I deliberately use the term 'situation' instead of 'problem' to point towards a set of circumstances in which

human beings are determined to realize specific objectives. Such situations can take the form of recurring problems (Tolbert & Zucker 1996; Berger & Luckmann 1966), but need not necessarily be quandaries that are regarded nu human beings "as unwelcome, harmful, or wrong and needing to be overcome" (see e.g. Oxford English Dictionary 2007, meaning 3. a.). It goes without saying that human beings react not only in response to perceived threats, but also in response to perceived opportunities.

Habitualized behaviors remain cognitively meaningful to human beings, but the deeper meanings associated with the habitualized behaviors become routinized and taken-for-granted parts of their stock of knowledge, so that they need not be questioned again in the future (Berger & Luckmann 1966). Frequently repeated behaviors can be habitualized, but it is the meanings associated with the behaviors and not the behaviors *per* se, that becomes routinized and taken-for-granted. It follows that habitualized behaviors are not performed unconsciously, instinctively or mechanically; rather, they are performed consciously as human beings re-experience situations over and over again, fall back on their stock of knowledge for appropriate behavioral responses to the experienced stimuli, heuristically locate the recognizable pattern of behavior previously performed, and perform it again because its meaningfulness is now taken-for-granted vis-à-vis the experienced stimuli.

In my reading of Berger and Luckmann (1966), the habitualization of behavior is principally a heuristic device within the cognizance of the social actor. What is taken for granted is the meaning of habitualized behavior in re-experienced situations – that is, which 'types of behaviors' are meaningful 'for me' to perform in which 'types of situations' (cf. Berger & Luckmann 1966). The benefit of this heuristic device is that it provides psychological relief in the form of a more stable cognitive backdrop against which solitary behavior can proceed with an absolute minimum of typically

distressful decision-making (Berger & Luckmann 1966). Habitualization of behavior can thus be summarized a partial psychological solution to the anthropologically necessitated need for social order previously discussed. This solution 'pushes' more trivial solitary behavior into the background of cognizance, thus making more room in the foreground of cognizance for the decision-making requirements imposed by infrequently repeated or entirely untried behaviors necessitated by likewise infrequently re-experienced or even entirely untried situations (Berger & Luckmann 1966).

Reciprocal typification of habitualized behavior by types of social actors

The second phase in the formation of social order is, according to Berger and Luckmann (1966), the reciprocal typification of habitualized behavior by types of social actors. Corresponding to habitualization of behavior, the reciprocal typification of habitualized behavior by types of social actors is truly embryonic in any process of institutionalization (Berger & Luckmann 1966). But in contrast to the phase that preceded it, this second phase does manifest itself in the formation of institutions, and is thus a premature form of institutionalization (Berger & Luckmann 1966). Reciprocal typification of habitualized behavior by types of social actors, like the phase that preceded it, is a fundamental anthropological necessity (Berger & Luckmann 1966). But unlike the phase that preceded it, it is a social rather than psychological process, that proceeds only in social interaction (Berger & Luckmann 1966). It should now be evident that habitualization of behavior, and the reciprocal typification of habitualized behavior by types of social actors, altogether are two core dynamics of institutionalization embryonic in all social interaction (Berger & Luckmann 1966). Nonetheless, for these dynamics to manifest themselves in the formation of institutions, they have to unfold in social interactions that "proceed in collectivities containing considerable number of people" (Berger & Luckmann 1966, p.73).

Reciprocal typification of habitualized behaviors by types of social actors essentially involves an ongoing social interaction in a large collective of human beings over the course of a longer period of time, during which the participants of the interaction perform each their respective habitualized behaviors in each their respective re-experienced situations, simultaneously observing and typifying the likewise habitualized behaviors of all of their counterparts in their re-experienced situations (Berger & Luckmann 1966). The reciprocity of the performed observations and typifications should be emphasized. All participants of the social interaction perform observations and typifications with reference to all the other participants of self-same, meaning that every participant has cross-observed and cross-typified the habitualized behavior of every other participant (Berger & Luckmann 1966).

It should also be emphasized that not only the habitualized behavior of the other social actors is observed and typified by the participants of the social interaction –that is, which 'types of behaviors' are meaningful to perform – but also the types of social actors performing the habitualized behaviors thus observed and typified – that is, which 'types of social actors' can meaningfully perform 'such types of behaviors' – and the types of situations that the social actors thus also observed and typified are performing them in – that is, in which 'types of situations' can such 'types of social actors' meaningfully perform such 'types of behaviors' (Berger & Luckmann 1966). What cultivates over the course of a longer period of time, then, is a shared meaning system or cognitive schema in the form of a typology that links together types of behaviors, types of social actors and types of situations. Each link in the typology can be labeled a role (Berger & Luckmann 1966), and the typology itself is an institution. In the phraseology of Berger and Luckmann (1966, p.72), institutions arise "whenever there is a reciprocal

typification habitualized actions by types of [social] actors" and accordingly "any such typification is an institution".

This shared meaning system or cognitive schema represents a convergence around typifications that all participants of the social interaction have in common (Berger & Luckmann 1966) and thus excludes presumed residual typifications that do not resonate. For participants of the social interaction to converge around typifications, they have to perceive the re-experienced situations and habitualized behaviors of one another as having a relevance to themselves (Berger & Luckmann 1966). It should be noted at this point that social interaction implies an interlock of relevance structures per se, as participants of any social interaction can be assumed to be participants of *that* specific social interaction, for the reason that they have an objective in common (cf. Berger & Luckmann 1966). It should also be noted that the convergence around typifications cannot be taken to equal a convergence around behavior – that is, that participants of the social interaction begin to perform exactly the same behavior in exactly the same situations. Although the participants of the social interaction will be mutually aware of the roles available in their shared meaning system or cognitive schema, they can only appropriate those roles of one another that resonate with their own position in the typology of social actors (less unambiguously in Berger & Luckmann 1966).

In my reading of Berger and Luckmann (1966), the reciprocal typification of habitualized behaviors by types of social actors is principally also a heuristic device within the cognizance of the social actor. It nevertheless differs from habitualization of behavior by virtue of its social-psychological character. What is now taken for granted is no longer just the meaning of habitualized behavior in re-experienced situations – that is, which 'types of behaviors' are meaningful 'for me' to perform in which 'types of situations' – but the

meanings that types of social actors ascribe to types of behavior in types of situations – that is, which 'types of behaviors' are meaningful from which 'types of social actors' in which 'types of situations' – and the same applies vice versa – that is, what 'types of behavior' are expected 'from me' in which 'types of situations' (cf. Berger & Luckmann 1966). Social actors can predict each other's behavior and take appropriate precautions. The mutual benefit of this heuristic device is that it provides psychological relief in the form of a more stable cognitive backdrop against which now also social behavior can proceed with the same absolute minimum of typically distressful decision-making (Berger & Luckmann 1966). As a result, the reciprocal typification of habitualized behaviors by types of actors can be summarized as a more complete social-psychological solution to the anthropologically necessitated need for social order previously discussed. This more complete solution also 'pushes' unimportant social behavior into the background of cognizance, thus making even more room in the foreground of cognizance for purposes already discussed above (Berger & Luckmann 1966).

Externalization and objectivation

The third phase in the formation of social order is, according to Berger and Luckmann (1966), the externalization and objectivation of the reciprocally typified habitualized behavior of types of social actors (but, for stylistic reasons, henceforth just 'objectivation'). It has been discussed above that habitualization of behaviors and reciprocal typifications of habitualized behavior by types of social actors are both dynamics that are embryonic in any process of institutionalization (Berger & Luckmann 1966). It has also been discussed that while the former dynamic does not necessarily lead to the formation of institutions, the latter dynamic is in fact a premature form of institutionalization (Berger & Luckmann 1966). It shall now be argued

that objectivation is the fundamental dynamic through which premature institutionalization advance into its mature state and institutions sediment.

A few points should be noted in advance. First, in my reading of Berger and Luckmann (1966), externalization and objectivation are two dynamics that always proceed alongside as two sides of the same coin. That is, reciprocally typified behavior by types of social actors cannot be externalized without simultaneously being objectified and vice versa. This reading leaves me to conclude that externalization and objectivation are in fact one and the same dynamic. It can be noted parenthetically that key followers of Berger and Luckmann (1966), within organizational neoinstitutionalism, have not find it necessary to distinguish between externalization and objectivation either (see Zucker 1977; Tolbert & Zucker 1996). Second, the terms 'objectivation' and 'objectification' are used interchangeably by Berger and Luckmann (1966) and their key followers within organizational neoinstitutionalism (see Zucker 1977; Tolbert & Zucker 1996). It goes without saying that they carry the same meaning and their usage is thus only a matter of preference.

A first step in unpacking the argument is to recognize how the social actors, who participated in the longitudinal social interaction that eventually led to the formation of a premature institution, remain themselves aware of their participation in that social interaction and the premature institution that became the outcome of self-same (Berger & Luckmann 1966). That is, they remain fully conscious that the premature institution – a shared meaning system, or cognitive schema, and within it the typology of roles – is a social product of their own making, and because it is so, they understand its inner workings (Berger & Luckmann 1966). In other words, as a social product of their own making, the premature institution remains fully transparent and easily changeable or even abolishable to them (Berger & Luckmann 1966). Recalling the previous discussed definitional differences, which distinguish

new sociological institutionalism from other new institutionalisms, it may be argued that premature institutions are indeed social conventions rather than they are institutions *per se* (cf. DiMaggio & Powell 1983). A second step in unpacking the argument is therefore to recognize that premature institutions must advance into mature institutions for them to become 'real' institutions in the new sociological sense of the term.

Transmittance

In my reading of Berger and Luckmann (1966), the fundamental dynamic of objectivation can heuristically be divided into the reciprocal sub-dynamics of transmittance and legitimation. Although they are empirically entwined, it is meaningful to keep the two sub-dynamics analytically distinct for the purpose at hand. In order for premature institutions to advance into mature institutions it is imperative that the social actors, who participated in the longitudinal social interaction that eventually led to the formation of a premature institution, transmit self-same to a collective of outsiders (Berger & Luckmann 1966). A collective of outsiders is taken to mean a collective of social actors, none of whom have themselves been involved in the social interaction that gave rise to the premature institution.

It should be noted that Berger and Luckmann (1966) wrote explicitly about the sociology of everyday life, thus pertaining to entrenched institutions, and the transmittance of premature institutions through consecutive layers of generations from parents to their children. But although they primarily suggested that the transmittance of premature institutions would proceed along the temporal dimension – that is, through time – their argument applies correspondingly to a transmittance of premature institutions that proceed along the spatial dimension – that is, through space – within an institutional environment, an organizational field or any other spatial unit of analysis that could be of interest to an organizational neoinstitutionalist

(see Meyer & Rowan 1977; DiMaggio & Powell 1983). Tolbert and Zucker's (1996) application of the argument confirms my assessment that historicity and objectivation need not necessarily be entwined, at the same time as Berger and Luckmann (1966, pp.86, 89) infer it parenthetically themselves. Yet, without delving further into a discussion that has to do with primary contra secondary socialization (cf. Berger & Luckmann 1966), I assume that the temporal transmittance of entrenched institutions over consecutive generations manifests itself in significantly stronger objectivation than does the spatial transmittance of more modest institutions in organizational life.

The transmittance of a premature institution from its creators to outsiders has two important consequences in terms of its advancement into a mature institution. First, since the outsiders initiated in the institution had no part in its making, the institution confronts them as 'a given', the inner workings of which they do not necessarily understand (Berger & Luckmann 1966). It confronts them not as fully transparent, but rather as fairly opaque, and not as easily changeable, but rather as fairly unchangeable (Berger & Luckmann 1966). That is, the institution confronts them as a facticity that is objectively 'real' on the face of, and it keeps doing so regardless of their understandings of its inner workings (Berger & Luckmann 1966). Second, as the creators of the institution transmit it to outsiders, it also 'thickens' and 'hardens' for themselves, because the outsiders' perception of it reflect back upon that of the creators (but the mechanisms through which this happens are left fairly undertheorized by Berger & Luckmann 1966). To sum up, the transmittance of premature institutions to outsiders is thus an antecedent of institutional maturation because it implies the enrollment of outsiders who have little or no knowledge of the social origins of the institutions transmitted to them. As a consequence of transmittance, the institutions transmitted become more 'real' and 'massive' to all parties involved (Berger & Luckmann 1966).

Legitimation

The importance of transmittance, as a sub-dynamic of objectivation, has been discussed above. It shall now be argued that transmittance proceeds alongside the equally important sub-dynamic of legitimation. At this point, Berger and Luckmann's (1966) previously discussed characterization of institutions should be repeated. An institution is a taken-for-granted shared meaning system or cognitive schema – in the form of a typology that links together types of behaviors, types of social actors and types of situations into roles. The shared meaning system or cognitive schema interweaves the meanings that types of social actors ascribe to types of behavior in types of situations. An institution essentially decrees which 'types of behaviors' are meaningful from which 'types of social actors' in which 'types of situations'. Taken-for-granted meanings are the glue that binds institutions together. The creators of institutions arrive at the taken-for-granted meanings that bind institutions together through longitudinal social interaction, and more specifically, through a process of habitualization of behavior and reciprocal typification of behavior by types of social actors. In other words, they arrive at the taken-for-granted meanings through *experience*, and will therefore remain conscious about the experienced circumstances that eventually led them to take the meanings for granted.

The problem that arises when an institution is transmitted from its creators to outsiders is that the taken-for-granted meanings are lost in the process. As the outsiders have not participated in the longitudinal social interaction themselves, the possibility of them arriving at the same taken-for-granted meanings through experience is lost forever. In order for the transmittance of institutions to outsiders' to succeed, their creators must thus persuasively explain and justify their own taken-for-granted meanings to the outsiders, so that the outsiders come to take them for granted as well. This process is

labeled legitimation and implies that the creators of institutions consciously codify their taken-for-granted meanings into the format of both persuasive and internally consistent legitimating formulas (Berger & Luckmann 1966). What cultivates, then, is a "canopy of legitimations, stretching over [the created institution as] a protective cover of both cognitive and normative interpretation" (Berger & Luckmann 1966, p.79).

Legitimation as a process or legitimacy as a property

It should be emphasized that Berger and Luckmann's (1966) understanding of legitimation should, by no means, be confused with the understanding of 'institutional legitimacy' that prevails within and seen as core characteristic organizational neoinstitutionalism. These two understandings of legitimacy and legitimation are diametric opposites. In Berger and Luckmann's (1966) understanding, institutions are the 'subjects' of legitimation and legitimacy. The creators of premature institutions attempt to legitimate them through legitimation, persuading social actors to take their meanings for granted, and successfully legitimated mature institutions have legitimacy because their meanings are now taken for granted (cf. Berger & Luckmann 1966). In this understanding, institutions are the 'subjects' of legitimation and legitimacy. In the understanding of 'institutional legitimacy' that prevails within organizational neoinstitutionalism, on the other hand, social actors attempt to legitimate themselves through legitimation, persuading other social actors to perceive of themselves as compliant with the institutional prescriptions in a given slice of social reality (cf. Suchman 1995). Roughly speaking, institutional prescriptions are taken to mean widely disseminated structures and behaviors that pervade a given slice of social reality, and that social actors must internalize these – often quite superficially – in order to obtain broad social support from their peers (cf. e.g. Meyer & Rowan 1977). It has been argued that organizational neoinstitutionalism is a vast and

diverse theoretical orientation. The particulars of how such persuasion is pursued by social actors, and the degree of active agency that is involved, depends largely on the understanding of institutions and institutional legitimacy promulgated in the specific authorship (cf. Suchman 1995). The defining characteristic of this understanding, however, is that organizations are the 'subjects' of legitimation and legitimacy because institutions are essentially legitimate by definition. The above assessment is confirmed by Green (2004, p.658) who argues that "neoinstitutional accounts assume a positive relationship between prior adoption [of structures and behaviors] and the production of legitimacy, whereas rhetorical theory emphasizes how justifications shape legitimacy". As shall be discussed in considerable details momentarily, rhetorical theory or analysis is essentially the methodical apparatus through which Berger and Luckmann's (1966) new sociological institutionalism can be operationalized. The key point of difference is that organizational neoinstitutionalism confers the diffusion of an institution with its legitimacy, assuming that the more diffused it is, the more legitimate it must be *to everyone*. Since all institutions are relatively widespread social structures, legitimacy becomes a definitional property of institutions. Berger and Luckmann (1966) and their followers, on the other hand, favor a more cautious and processual understanding of legitimacy. In this latter view, institutions are legitimate in various gradations to their participants, but only to outsiders insofar as legitimation is actively pursued through language (cf. Green 2004).

IX.   Methodical considerations

The present chapter expounds my methodical considerations, based upon the rhetorical and language analysis promulgated particularly by Green (2004) and Colyvas and Powell (2006). The chapter then proceeds to touch lightly upon the most conspicuous methodical path not taken. This path is discourse analysis.

Suddaby and Greenwood (2005) adopted rhetorical analysis as methodical approach to understand the process of legitimation. Rhetorical analysis, according to Suddaby and Greenwood (2005, p.40), is essentially a method of language analysis that is restricted in its focus to the persuasion and influence of social actors as reflected in "explicitly political or interest-laden discourse". Green (2004, p.654) confirms this assessment in arguing that "rhetoric is a type of instrumental discourse used to persuade audiences". Rhetorical analysis distinguishes itself from discourse analysis, as a large and interdisciplinary school of thought within the social sciences, by giving cognition precedence over language in its explanation of meaning (Suddaby & Greenwood 2005; cf. Jorgensen & L. Phillips 2002; Green 2004).That is, in rhetorical analysis, language is essentially seen as a means employed circumstantially by social actors in order to induce meaning in other social actors. For that reason, rhetorical analysis presumes a "direct and dynamic

relationship between rhetorical structures of speech or argument and the cognition and action of actors" (Suddaby & Greenwood 2005, p.40), thus connoting that "through rhetoric, actors produce and assign meaning, constructing both their identities and the world" (Green 2004, p.654).

Rhetorical analysis is not the inherent domain of discourse analysis, and in spite of commonalities, does not imply an affiliation with such. Rhetoric, like discourse (cf. Jorgensen & L. Phillips 2002), is a laymen's term and can be approached as such. For instance, laymen's understandings of rhetoric and discourse are reflected in Barley and Kunda's (1992) empirical study of the rhetoric of North American managerial discourse, and in Abrahamson's (1996) theoretical discussion of the promulgation of management fashion. The works of these authors reflect a laymen's understanding of rhetoric as "the art of using language effectively so as to persuade or influence others, [especially] the exploitation of figures of speech and other compositional techniques to this end [...]" (Oxford English Dictionary 2010, meaning 1. a).

Based on the understanding of rhetorical analysis promulgated by Suddaby and Greenwood (2005) in the context of institutional change, and by Green (2004) in the context of institutional diffusion, rhetorical analysis is largely consistent with the methodical presumptions promulgated by Berger and Luckmann (1966). This consistency is most evident in the work of Green (2004), according to whom the persuasiveness of rhetorical justifications and explanations in the legitimation of institutions, and the maturation of self-same, are two inexorably interlinked processes. More unambiguously, he argued that "as the persuasiveness of discourse increases, the production of taken-for-grantedness increases" (Green 2004, p.655). Due to the nature of their enterprise, Berger and Luckmann (1966) discussed the legitimizing efforts individuals as social actors. Yet, while only individuals can make rhetorical justifications and explanations, such legitimations can soundly be

conceptualized as expressing "the dominant concerns of individuals in firms, classes, or industries" (Green 2004, p.656). Such legitimations can be observed in various external and internal sources, the trade press being an example of the former (Green 2004). It goes without saying that within the context of the present dissertation, the unit of conceptualization is the information technology profession and the unit of analysis the information technology management trade press. That is, by investigating professional discourse in the information technology management trade press, it should be possible to conceptualize the 'dominant concerns' of the professional community of information technology managers with regards to the 'cloud computing paradigm'.

Suddaby and Greenwood (2005) were interested in rhetoric as it unfolded in the context of a 'profound' institutional change, which they approached based on an increasingly popular theoretical presumption of disintegration and contradiction between institutions, having each their own institutional logic (cf. Thornton & Ocasio 2008). Accordingly, Suddaby and Greenwood (2005) studied how discernible social actors used rhetoric as a means to encourage and discourage the legitimation of the institutional change in question – vis. the vision of 'multidisciplinary practices', combining law and accounting professional services in the same firm – within specific forums – vis. two of innumerable commissions – launched in the wake of a Big Five accounting firms 'shocking' acquisition of a corporate law firm. I shall not delve much deeper into the particulars of Suddaby and Greenwood's (2005) argument. What is important, within the present context, is to emphasize a key limitation: the authors' entire analysis is erected upon the theoretical presumption of disintegration and contradiction between institutions, vis. institutional logics, and unfolded in an empirical setting where discernible social actors can be seen performing deliberate rhetorical manipulations of

such institutional logics (cf. Suddaby & Greenwood 2005). Abrahamson's (1996) theoretical discussion of management fashions, which has more to do with institutional diffusion than change, is based on some of the same presumptions as is the work of Suddaby and Greenwood (2005). That is, the author conveys the understanding that discernible social actors – vis. 'fashion setters' – produce relatively complicated but eloquent rhetoric, by those means deliberately manipulating managers' understanding of which management practices are presently "both rational and at the forefront of management progress" (Abrahamson 1996, p.267). In both views, social actors are rhetors deeply engaged in theorization (cf. Strang & Meyer 1993).

As Suddaby and Greenwood (2005) argued themselves, in discussing the limitations of their study, it would be useful to investigate forums in which professional rhetoric is being created, rather than contested, and the forums in which "members of a discursive community […] try to legitimate innovations to their own members" (Suddaby & Greenwood 2005). Seeing as I do both of these things, there is a limit to the extent, to which I can use their work as a methodical yardstick. But more importantly, within the present context, Suddaby and Greenwood (2005) and Abrahamson (1996) both convey an understanding of rhetoric as blatantly present and traceable to discernible social actors with interests and agency (cf. DiMaggio 1988). Yet, while blatantly present rhetoric may proliferate in the earliest stages of legitimation (cf. Berger & Luckmann 1966), "evidence of acceptance is the lack of a need to linguistically support the practice" (Green 2004, p.656). As Green (2004) argued, in his theoretical discussion of institutional diffusion, there is reason to expect an increase in supportive justifications – that is, legitimation – from the time that social actors begin diffusion a managerial practice to the point where the managerial practice in question achieves a taken-for-granted status and thus becomes somewhat institutionalized in

the new sociological sense. From that tipping point and onwards, as the managerial practice has become significantly diffused and institutionalized, there is likewise reason to expect a decrease in supportive justifications (Green 2004). In the early stage of institutionalization, when a premature institution is transmitted from its initial creators to outsiders (cf. Berger & Luckmann 1966), supportive justifications are legitimating that the social structure embodied within the premature institution are solving "recurring practical problems" (Green 2004, p.657) and has value on those merits. But then, as the institution matures, the value of the social structure becomes increasingly taken-for-granted and supportive justifications less necessary (Green 2004). The point is that social actors seldom find reason to keep on justifying and explaining – viz. legitimating – social structures to other social actors who, at this point, have already adopted the social structures in question and are taking their value more or less for granted. To put it bluntly, then, "the highest degree of institutionalization is an ideal state of perfect taken-for-grantedness [which] reflects 100 percent diffusion of the practice, with no discursive justifications" (Green 2004, p.657). To presume a priori that discernible social actors are engaged in actively championing (cf. Abrahamson 1996; Green 2004) or even contesting (cf. Suddaby & Greenwood 2005) blatantly present rhetoric, is to presume that the social structure in question is not yet neither very diffused nor institutionalized.

This understanding largely resonates with the understanding promulgated by Colyvas and Powell (2006). In a study that at some points theoretically exceeded the boundaries of new sociological institutionalist explanation by including regulative and normative institutions, Colyvas and Powell (2006) otherwise masterfully investigated the institutionalization of technology transfer at Stanford University in the period from 1970 to 2000. In the following discussion, I disregard the structural and relational ramifications

of the authors' argument, pertaining only to its cognitive element. Through their study, the authors showed how increasing institutionalization of the social structures surrounding the disclosure of scientific inventions from academia to the field of practice, manifested itself in both the compression of discourse and the elaboration of formal structural arrangements (Colyvas & Powell 2006). Importantly, within the present context, the authors thus demonstrated that organizational scientists can methodically conjecture institutionalization from the assumptions and 'habits of mind' revealed indirectly by authors of text through emphasis, quotations and questions in their commentary (Colyvas & Powell 2006). However, contrary to the implicit understanding conveyed by Suddaby and Greenwood (2005) and Abrahamson (1996), Colyvas and Powell (2006) also emphasized how the absence of commentary testified to institutionalization. Consistent with the understanding conveyed by Green (2004), the authors pointed towards how "once a practice or regime acquires legitimacy, debates cease and conflicts or questions wither" (Colyvas & Powell 2006, p.315). While the authors pertained distinctly to legitimacy and taken-for-grantedness, they exhibited identical processes of discursive 'crystallization' and 'condensation' around the institutionalized social structure.

Colyvas and Powell (2006) analyzed letters and memos, exemplifying correspondence regarding the organization of the disclosure process, drawn from the dockets into which documentation of the process had been organized by the Office of Technology Licensing at the Stanford University. In terms of legitimation, the authors exhibited a chronological evolution from a language packed with supportive justifications, legitimizing the concept of technology transfer on an *ontological level* with statements about its general value, to a language discussing "which features of the activity [were] deemed desirable and what context or contingencies [made]

the practice appropriate" (Colyvas & Powell 2006, pp.321–323) based on an implicit assumption of the concept now being legitimate on an *ontological level*. This shift from an ontological discourse, materialized in "a broad debate about the appropriateness of the activity" (Colyvas & Powell 2006, p.323), to an instrumental discourse, materialized in a debate specifically concerned with the "classification of problems and the standardization of solutions" (Colyvas & Powell 2006, p.323), signifies the development of an institutional vocabulary in addition to the medium institutionalization of a social structure to its participants. Of course, as legitimation both diffuses and institutionalizes a social structure amongst new participants, new room is also created for new contestation; however, these are "over details, not fundamental debates over appropriateness" (Colyvas & Powell 2006, p.326). In terms of taken-for-grantedness, the authors exhibited a much similar chronological evolution from a language packed with confusions and clarifications regarding quite vague and arbitrary definitions of social and technical categories, to a language where much less had to be explained or made explicit, since definitions of social and technical categories had crystalized (Colyvas & Powell 2006)[16]. And in a similar fashion, this shift from 'bulky' discussions of the definitions of social and technical categories, to 'compressed' discussions where definitions are made "contingent on a set of particular circumstances or examples" (Colyvas & Powell 2006, p.339), signifies the development of an institutional vocabulary in addition to the medium institutionalization of a social structure to its participants.

But, of course, institutionalization has the potential to become high. In terms of legitimation, Colyvas and Powell (2006) thus exhibited how the pinpointed chronological evolution continued to high institutionalization,

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[16] The authors exhibited how, at least in terms of exchange transactions, this process stemmed partly from the emergence of organizational fields (cf. DiMaggio & Powell 1983), and the reciprocal typification of behavior and development of roles between its participants (cf. Berger & Luckmann 1966), thus indicating the structural and relational turn of the argument (cf. Colyvas & Powell 2006).

with the abovementioned classification of problems and standardization of solutions literally being 'compressed' into a compact language based on shared assumptions. Problems and solutions became well understood to participants, and easily mitigated by well understood formal structural arrangements put in place for the purpose, and therefore social actors needed only briefly to refer to these arrangements in their correspondence (Colyvas & Powell 2006). Recalling the argument of Green (2004), and generalizing beyond the context of technology transfer to the discourse on the 'cloud computing paradigm' in the information technology management trade press, it can be theorized that highly institutionalized social structures gradually become less frequently mentioned in the trade press discourse, for the reason that their problems and solutions no longer have much 'news value' to the professional community of information technology managers. Then, in terms of taken-for-granted, Colyvas and Powell (2006) exhibited how the chronological evolution continued to high institutionalization. As they articulated eloquently, when commenting upon one of their exhibits, "the bandwidth of definitions narrows and becomes less contingent or associated with context" (Colyvas & Powell 2006, p.339). When highly institutionalized, the definitions of social and technical categories became highly taken-for-granted; they became reified, abstract, concise, packaged, and encoded along with them much information about their attributes and characteristics (Colyvas & Powell 2006).

Taken together, the understandings promulgated by Green (2004) and Colyvas and Powell (2006) provide a rigorous methodical foundation for a study of institutionalization through legitimation. While the methodical exemplification of Colyvas and Powell (2006) convey an understanding of how different degrees of institutionalization can be discerned from text, the theorization of Green (2004) in conjunction with the empirically grounded

theorization of Colyvas and Powell (2006), are both useful in developing conjectures about the extent to which the 'cloud computing paradigm' can possibly be institutionalized in the professional community of information technology managers, and how that might disclose itself through analysis.

Final note on the methodical paths not taken

By pragmatically adopting rhetorical analysis as a methodical approach, based on the understandings promulgated by Green (2004) and Colyvas and Powell (2006), I avoid obscuring organizational institutionalism with the interdisciplinary school of thought of discourse analysis, and the deeply rooted methodological presumptions upon which it is based. It should be noted that discourse analysts have previously studied the process of legitimation, albeit without any distinct institutional flavor. For instance, Vaara et al. (2006) used critical discourse analysis to study the process of legitimation in the context of a large organizational merger. But, as has been argued by Jorgensen and L. Phillips (2002), discourse analysis should not be used "as a method of analysis detached from its theoretical and methodological foundations". The authors proceeded to argue that while there are many variants of discourse analysis, they are each essentially both theoretical and methodological frameworks in their own right, constituted by "philosophical (ontological and epistemological) premises regarding the role of language in the social construction of the world, second, theoretical models, third, methodological guidelines for how to approach a research domain, and fourth, specific techniques for analysis" (Jorgensen & L. Phillips 2002, p.4). In discourse analysis more than any other school of thought within the social sciences, "*theory* and *method* are intertwined and researchers must accept the basic philosophical premises in order to use discourse analysis as their method of empirical study" (Jorgensen & L. Phillips 2002, p.4, italics in original).

In a recent review of institutional change, Leca et al. (2009) emphasized the practical 'discursive strategies' of social actors a key vector of explanation in organizational neoinstitutionalists accounts of institutional change. What Leca et al. (2009) neglected to mention, was the crucial difference between the practical 'discursive strategies' of social actors, and the subsequent discursive analysis performed upon such *post factum* by organizational scientists. In my reading of institutional change, and presumably for the reasons discussed above, actual discourse analysis is rarely employed. Some authors have recently attempted to merge discourse analysis with new institutionalisms (see e.g. Schmidt 2010) in general and organizational neoinstitutionalism in particular (see e.g. N. Phillips et al. 2004). However, because of its deep rooted methodological presumptions, they have been obliged to give discourse analysis precedence over institutionalism, thereby also granting it the status of an overarching lens through which institutions and institutionalization is understood (cf. N. Phillips et al. 2004; Schmidt 2010). The validity and relevance of these understandings remains an open question; what can be established with certainty, on the other hand, is that they involve a departure from the new institutional way of seeing employed in the context of the present dissertation. In contrast, pragmatic adoption of rhetorical analysis does not.

X.   Data collection

The present chapter initially discusses the a delineation of the information technology management trade press, then proceeds to a meticulous expositions of the data collection, including choices made with regards to the sorting and coding of self-same.

Delineating the information technology management trade press

I commenced with an effort to delineate the most renowned publications of the global information technology management trade press. I focused on print media, and online media with historical roots in print media, as it has the strong brand recognition and loyal readership enabling its potential opinion leadership within a professional community. Contrary to 'new' media, such 'old' media publishes less content and more infrequently, but the content published is more immersive and can reasonably be presumed to attract more immersed readers. I understand such 'old' media content as "materials developed through group processes and formatted for public consumption" (Reay & Hinings 2005, p.361) that "represent the end result of internal negotiations designed to portray a particular point of view" (Reay & Hinings 2005, p.361). Needless to say, this particular point of view is that of the professional community of information technology managers. It should be noted, peripherally, that particularly the 'new' media share of

the general information technology management trade press is a hotbed of digital marketing sites, the opinion-forming and opinion-reflecting abilities of which – within a professional community – is extremely dubious. Having decided to focus on 'old' media, search engines such as Google and Yahoo, and the organized directory of the latter in particular, were highly useful in forming an overview of the field.

Four particular publications seemed to characterize the global information technology management trade press. These were the bi-weekly published periodical *CIO*, the irregularly published periodical *CIO Insight*, the once daily published newspaper InfoWorld that became the daily published online media *InfoWorld.com* in 2007, and finally the weekly published periodical *InformationWeek*. I did, of course, consider many other global computer industry trade press publications. The majority of these were quickly discarded as pertaining to either the interests of industry-specific roles (e.g. the *CRN* monthly periodical pertaining for value-added resellers and technology integrators), specific roles other than information technology managers (e.g. *SC Magazine* monthly periodical for information technology security professionals) or specific nationalities (e.g. the Indian edition of *CIO*). Some publications were also discarded because their broad and general focus on professional information technology content made it difficult to establish with any reasonable certainty, the degree to which they pertained to the interests of the professional community of information technology managers (e.g. *eWeek*). Ultimately, by focusing on the four most prominent information technology management trade press publications, I ensured a valid and generalizable overview of those trade press publications that have simultaneously formed and reflected the opinion of information technology managers with regards to 'cloud computing' in the period from primo 2008 until ultimo 2012.

Data collection

Within these publications, I began collecting content that could reasonably be presumed to have an opinion-forming and opinion-reflecting ability. I did not collect opinion pieces *per se*, in the traditional journalistic sense of the term, seeing as the opinion pieces – i.e. editorials, leading articles or leaders – of the publications mostly appeared as very diminutive abstracts or executive summaries, which only served to introduce the reader to the contents of the publication and point towards the specific content providing further elucidation. Accordingly, I collected both opinion pieces and other articles delving deeper into the 'cloud computing paradigm' in one way or the other. The common denominator was, accordingly that the content had to have to *somehow* pertain substantially, as opposed to superficially, to *something* regarding the 'cloud computing paradigm'.

I used the web site of the library at Copenhagen Business School, and more specifically the "Find Journals" web page, in order to initially establish the necessary overview of my access to the publications in question including, of course, my access to coverage of the timeframe previously determined (see CBS Library 2013b; CBS Library 2013a). It quickly stood clear to me that the SFX OpenURL link resolver on the Copenhagen Business School library web site pointed me in the direction of different databases with somewhat different implementations of their search functionality. For CIO, SFX returned the Business Source Complete database by EBSCO Publishing as the only possible database through which I had access to the publication and access to coverage of the timeframe previously determined. For CIO Insight, SFX returned the Business Source Complete database or the Business Insights: Essentials database by Gale as the as the two possible databases through which I had access to the publication and access to coverage of the timeframe previously determined. For InfoWorld.com, SFX

returned Business Insights: Essentials database as the only possible database through which I had access to the publication and access to coverage of the timeframe previously determined. For InformationWeek, SFX returned the Business Insights: Essentials database or the unrestricted historical issue archive available at the InformationWeek website as the two possible databases through which I had access to the publication and access to coverage of the timeframe previously determined. The fact that I could not access the four publications in question from the same database gave rise to the problem of comparability. That is, I now had to ensure that I applied identical search criteria and filters when accessing all four publications. I subjectively decided to access CIO through Business Source Complete and CIO Insight, InfoWorld.com and InformationWeek through Business Insights: Essentials.

Accessing and searching CIO

I initially opened the Business Source Complete database using SFX from the Copenhagen Business School library web site and choose "Search within this publication". Using the "Advanced Search", I constructed a search for all content published within the publication that contained the exact phrase '"cloud"' in its subject terms, and was published in the timeframe starting with the 1st of January 2008 and ending with the 31st of December 2012. I decided on the exact phrase 'cloud', instead of the exact phrase 'cloud computing', recognizing that 'cloud' has become widespread industry jargon and is often used without the 'computing' suffix. Due to the comparability with results retrieved from the Business Insights: Essentials database, I decided not to restrict my result set to specific document types in advance, using the proprietary search functionality made available by the Business Source Complete database.

More unambiguously, then, I constructed a search for the Boolean phrase 'JN "CIO" AND SU "cloud"', while using the "Published date from" section in the "Advanced Search" to restrict my result set to content published in the period starting with January 2008 and ending with December 2012 (which translated into the timeframe starting with the 1st of January 2008, and ending with the 31st of December 2012, according to the results page). My initial search yielded 102 results, which were distributed by volume over the half a decade in question, according to the graphical illustration below.
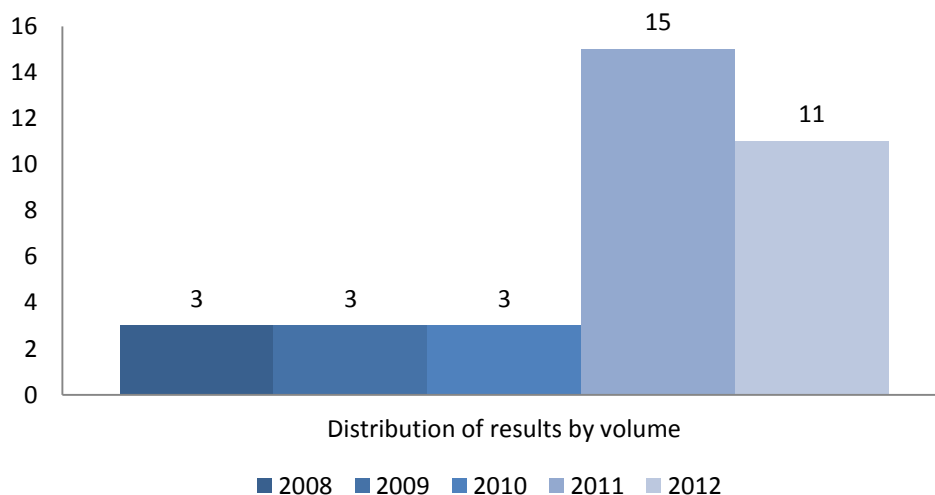

Distribution of results by volume

■ 2009 ■ 2010 ■ 2011 ■ 2012
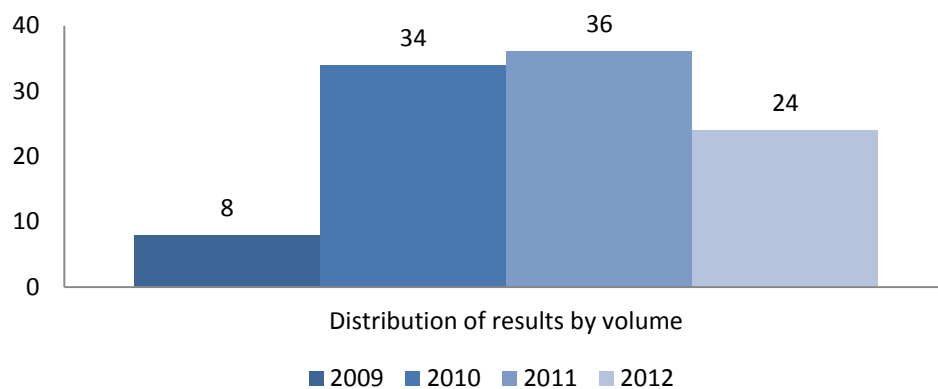
Accessing/searching CIO Insight, Infoworld.com and InformationWeek

I opened the Business Insights: Essentials database using SFX from the Copenhagen Business School library web site. Using the "Advanced Search", I constructed a search for all content published within the publication that contained the exact phrase 'cloud' in its subject terms, and was published in the timeframe starting with the 1st of January 2008 and ending with the 31st of December 2012. I used the exact phrase 'cloud', instead of the exact phrase 'cloud computing', for reasons already discussed in addition to reasons of comparability with results already retrieved from the Business Source Complete database. Due to the comparability with results retrieved from the Business Source Complete database, I decided not to restrict my result set to specific document types in advance, using the

proprietary search functionality made available by the Business Insights: Essentials database.

More unambiguously, then, I constructed a search for the 'Search term' '"cloud"', the 'Search Type' 'Subject' and variously the 'Publication Title' 'CioInsight', 'InfoWorld.com' and 'InformationWeek', while using the 'Start date' and 'End date' fields in the "Advanced Search" to restrict my result set to content published in the period starting with the 1st of January 2008 and ending with the 31st of December 2012. With regards to CIO Insight, my initial search yielded only 35 results, which were distributed by volume over the half a decade in question, according to the graphical illustration below.

Distribution of results by volume

■ 2008　■ 2009　■ 2010　■ 2011　■ 2012

With regards to InfoWorld.com, my initial search yielded only 25 results, which were distributed by volume over the half a decade in question, according to the graphical illustration below. It should be emphasized that both CIO Insight and InfoWorld.com yielded a ten to twentyfold larger volume of results when searching for content that contained the exact phrase 'cloud' either as a keyword term or within its body text; that is, more unambiguously, with the 'Search term' '"cloud"' and either the 'Search Type' 'Keyword' or the 'Search Type' 'Entire Document'. The additional results

were almost entirely product news or reviews, industry and company news or other types of content that could not reasonably pass for opinion pieces.

Distribution of results by volume

■ 2011 ■ 2012
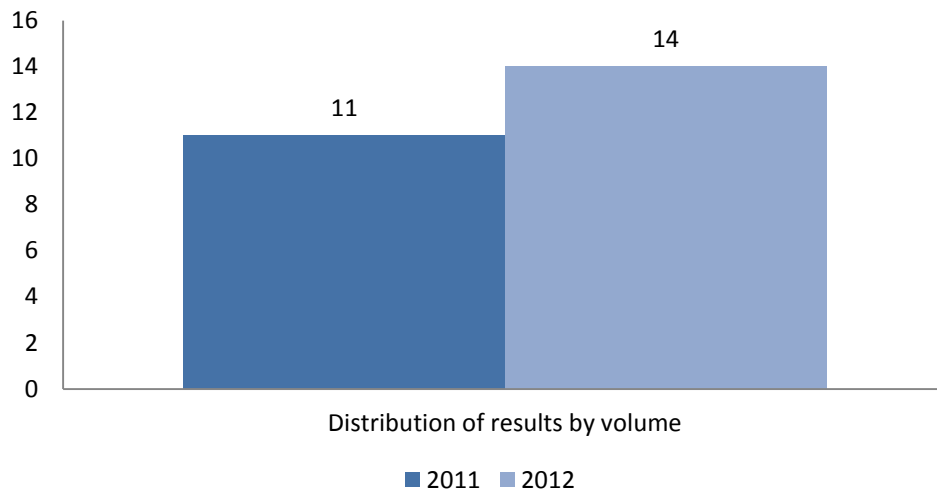
With regards to InformationWeek, my initial search yielded 236 results, which were distributed by volume over the half a decade in question, according to the graphical illustration below.

Distribution of results by volume

■ 2008 ■ 2009 ■ 2010 ■ 2011 ■ 2012
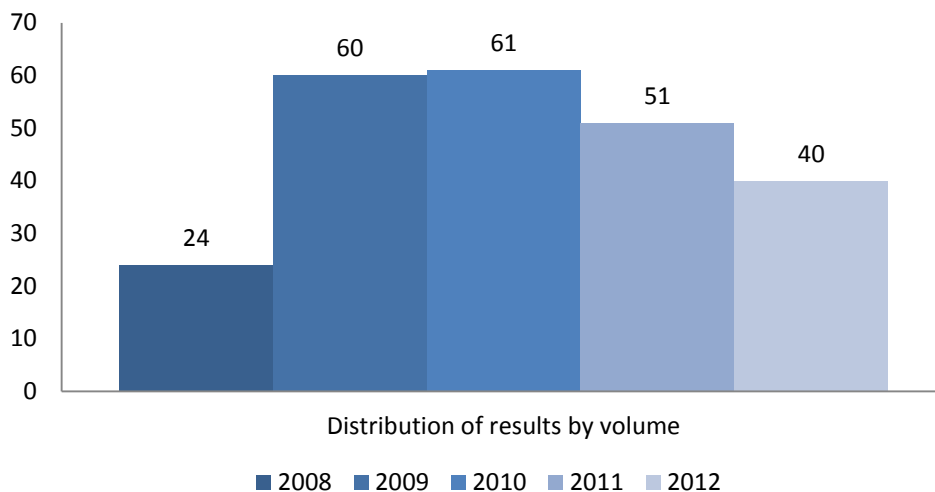
Isolating content with an opinion-forming and opinion-reflecting ability
I was interested in content with an opinion-forming and opinion-reflecting ability and initially tried to construct searches restricted to these types of content. However, for reasons that may have had to do with either the four

publications themselves or the two databases with which I accessed them, none of the publications had their content fixed with such information in neither their abstracts nor their subject or keyword tags. For comparability reasons that have already been discussed above, I could not to restrict my result sets to specific document types in advance, using the proprietary search functionality made available by the Business Source Complete and Business Insights: Essentials databases. However, besides that, none of the proprietary search functionalities sufficed for my purpose. Consequently, I was left with no other option than to manually sort the content, discarding all content with a dubious opinion-forming and opinion-reflecting ability. With regards to each of the four publications in isolation, I iterated through their entire result sets, while skimming all titles and abstracts. The Business Insight: Essentials database did not provide actual abstracts, but excerpts, which I thus skimmed instead. In the process, I systematically discarded all content with a dubious opinion-forming and opinion-reflecting ability. Of course, in the case of any significant doubt, I opened the item in question and skimmed its body text.

The open question remains how the organizational scientist can assess the opinion-forming and opinion-reflecting abilities of content published in the trade press or any kind of print media, 'old' or 'new', for that matter. In that regard, I decided to put my trust in the competence of the professional community of information technology professionals, thus presuming as a rule of thumb, that knowledgeable and educated professionals are generally able to distinguish potentially sponsored content with vested commercial interests – e.g. product news, reviews and comparisons, and industry and company news – from actual journalistic content. To me, it seemed entirely unreasonable and unjustified, to presume that the average information technology manager was merely a passive recipient of any media discourse.

Accordingly, based on this presumption about professionalism and human nature, I proceeded to discard the general types of content listed in Table I.

Type of discarded content	Example of type of discarded content
Product news, reviews and comparison content	See e.g. Pérez (2011) in CIO for an example of product news. See e.g. Pinto (2012) in InfoWorld.com for an example of a product review or comparison.
Industry and company news content	See e.g. (Anon 2009a) in CIO for an example of industry news. See e.g. Jackson (2010) in CIO for an example of company news.
Non-managerial technical content	See e.g. Beach (2010) in CIO.
Industry related content	See e.g. Biddick (2012) in InformationWeek.
Irrelevant content	See e.g. Nash (2010) in CIO.
Book review content	See e.g. (Anon 2009d) in CIO.

Table I: Types of discarded content

As an result of this effort, the 102 results initially yielded from CIO were reduced to 67, the 35 results initially yielded from CIO Insight were reduced to 21, the 25 results initially yielded from InfoWorld.com were reduced to 6, and in conclusion, the 236 results initially yielded from InformationWeek were reduced to 84. In the aggregate, 178 items were thus singled out for further analysis.

The process of sorting deserves further elucidation. Product news, reviews and comparison content was identified as content that profiled a product from an industry player, reviewed a product from an industry player or compared products from multiple industry players. Industry and company news content was identified as content that profiled an industry or company, or any given event within self-same. As an exception from these rules, content was included insofar as it performed any one of the abovementioned functions in the context of a more substantive discussion of the 'cloud computing paradigm'. Non-managerial technical content was identified as content that substantively discussed technical aspects of the 'cloud computing paradigm' inattentive to any substantive discussion of

managerial implications. Industry related content was identified as content that could not reasonably be of any concern to information technology professionals employed in organizational life beyond the borders of the global computer industry. Irrelevant content was identified as content that mentioned the 'cloud computing paradigm' peripherally, and could thus reasonably be understood as mislabeled, with regards to the subject terms leading me to skim its abstract or excerpt in the first place. In conclusion, book review content was discarded for self-explanatory reasons.

Coding

After having isolated the opinion pieces in each of the four publications, I downloaded the content from each publication into designated folders on my local NAS server[17], naming them according to an incremental numerical value and their titles. The content from was downloaded in the only formats made available by the Business Source Complete and Business Insights: Essentials databases respective; that is, content from CIO was downloaded in Portable Document Format (PDF), whereas content from CIO Insight, InfoWorld.com and InformationWeek was downloaded in Rich Text Format (RTF). Business Insights: Essentials had a proprietary Portable Document Format (PDF) export functionality, but it was out of order due to technical difficulties at the time of use. All Portable Document Format (PDF) files were downloaded in textual format, enabling effortless text recognition within them. After having downloaded the content from each publication into designated folders on my local NAS server, I imported each item into a folder by the name of the publication in question, within the NVivo 10 QDA computer software package from QSR International. In the process of doing so, I systematically applied the abstract or excerpt of each item in the 'Description' field in NVivo 10.

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[17] My local Network Attached Storage (NAS) server was backed up using the cloud-based services Microsoft Azure and Amazon Glacier.

After having imported each item, I proceeded to coding their content, reading through each of the total of 178 items that I had previously singled out for analysis. It should be emphasized that organizational scientists typically code such large amounts of data through a group process, allowing for a collective double-checking and validation of the coding as it proceeds (see e.g. Suddaby & Greenwood 2005). Also, as previously discussed, manifestations of rhetorical analysis have previously employed a 'selection strategy' leaving only rather blatantly rhetorical excerpts behind as residue (cf. Suddaby & Greenwood 2005). In contrast, I coded all of the content singlehandedly without a 'selection strategy' to opportunely remove the furtively rhetorical or entirely non-rhetorical content from the field of view. Rather, I generalized about the rhetoric of the content in its entirety, allowing me to account for whether the content was in fact very rhetorical at all with regards to the very ontology of the 'cloud computing paradigm'. The coding process was, however, susceptible to my fallibility and subjectivity.

I followed the coding scheme in Table II, which enabled me to account for both the predominant position of the content towards the 'cloud computing paradigm' and the general rhetorical archetype[18], if any, through which the content achieved its persuasiveness with regards to self-same position. Two guiding principles of my coding effort should be emphasized. Firstly, with regards to the former, I sensibly read between the lines of the items, making discretionary assessments about the attitude or tone of the individual item with regards to the 'cloud computing paradigm'. Secondly, with regards to the latter, I read through the individual paragraphs of the items, making likewise discretionary assessments about the most frequently occurring rhetorical archetype. However, as I quickly discovered how the majority items were largely disassociated and instrumental considerations of the

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[18] See appendix A for a clarification.

relative advantages and disadvantages of different applications of the 'cloud computing paradigm' under different situational circumstances, I found it necessary to introduce 'not applicable' in the sample space for the rhetorical coding. It follows from the above mentioned that coding of position and rhetorical archetype were forced choices (cf. Suddaby & Greenwood 2005). In the context of my analysis, authorship was unimportant. I was interested in generalizing about the entire professional community of information technology managers and perceived of each item as small fragment of a larger professional discourse.

Code	Description of sample space
ID	A unique combination of publication name plus incremental numerical value.
Publication	The publication name, i.e. CIO, CIO Insight, InfoWorld.com or InformationWeek.
Number	An incremental numerical value.
Position	The predominant position of the content toward the 'cloud computing paradigm'; i.e. either positive or negative.
Rhetoric	The general rhetorical argument of the content; i.e. either pathos, logos, ethos or not applicable.
Year	The year of publication; i.e. 2008, 2009, 2010, 2011 or 2012.
Irrelevant	A markup of potential irrelevance, allowing for second-round discarding of irrelevant items overlooked through the data collection process.
Comments	A textual comment regarding interesting aspects of the argument that should potentially be singled out for further analysis.

Table II: Coding scheme

XI.   Interpretation of key findings

The present chapter offers an elucidation of the key findings presented in the previous chapter. Following Colyvas and Powell (2006, p.316), the purpose of the elucidation is offered as an "existence proof of the features and processes", which I have previously highlighted and partly illustrated visually, "not as a comprehensive sampling" of the professional discourse on the 'cloud computing paradigm' in the global information technology trade press from primo 2008 until ultimo 2012. Such sampling would not only come at considerable length; it would also allude to the pervasiveness of technical and instrumental discourse in the information technology management trade press, and distract attention from the point of interest; that is, the development of some empirically grounded conjectures about the gradation to which institutional legitimations of the 'cloud computing paradigm' have impacted the professional community of information technology managers, making the 'cloud computing paradigm' a legitimate and taken-for-granted institution within this sub universe of meaning[19].

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[19] The reader may wish to refer to chapter IV for an exposition of the research question driving the present dissertation forward.
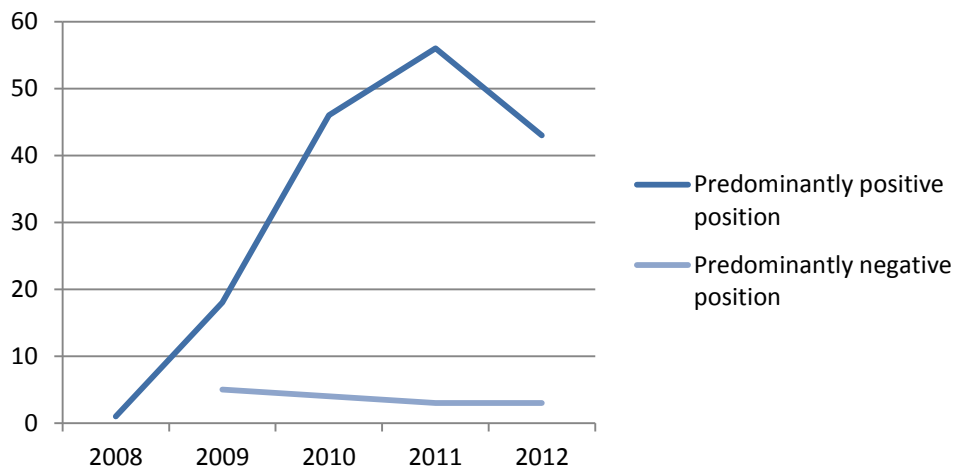
Graph I: The evolution of positive and negative professional discourse

Strong evidence of a predominantly positive discourse

It should be emphasized the vast majority of items (171 of 178) were coded as reflecting a predominantly positive position towards the 'cloud computing paradigm'. Given that these items amounted to 96.06% of all items published during the course of the 5 year period from 2008 until 2012 and focusing substantively on the 'cloud computing paradigm', this statement is more of a hard fact than a sweeping generalization. Moreover, amongst the few items (7 of 178) reflecting a predominantly negative position towards the 'cloud computing paradigm', some were very much on the verge between positions. For instance, a 2009 item in InformationWeek reported a survey that testified to a low acceptance of the 'cloud computing paradigm' among information technology managers in the United Kingdom (cf. Anon 2009c). But alongside a recitation of the reasons – which basically revolved around uncertainties regarding security, reliability and 'concept immaturity' – the item quoted a responsible manager from the firm, which released the recited survey, for statements suggesting that the 'cloud computing paradigm' had business value and a possibly bright future once the security and reliability concerns were 'ironed out' (cf. Anon 2009c). This exhibit testifies to a general tendency of the items to present negative

statements regarding the 'cloud computing paradigm', alongside positive statements regarding self-same, thereby making it exceedingly difficult to determine the predominant position of the item.

Strong evidence of a predominantly positive discourse in the entire period

In terms of trends or evolution over time, there was no evidence of an evolution from a predominantly negative position towards the 'cloud computing paradigm' towards a predominantly positive position towards self-same. That is, my coding efforts revealed that a predominantly positive discourse regarding the 'cloud computing paradigm' dominated the global information technology management trade press during the course of the 5 year period from 2008 until 2012. Of course, the absence of an analytically discernible evolution from a predominantly negative discourse towards a predominantly positive discourse alludes to concerns of an inherent bias in the timeframe investigated. That is, perhaps my findings would have been different, had I investigated the professional discourse further back in time?

In order to substantiate my findings, and forestall such concerns, I revisited the Business Source Complete and Business Insights: Essentials databases, redoing the same searches as previously discussed, but this time around, with a timeframe from primo 2000 until ultimo 2007. Two points should be emphasized. Firstly, the coverage of CIO Insight did not begin until primo 2002. Secondly, the InfoWorld daily newspaper was not dismantled until April 2007, meaning that I could now search through both its printed and online editions for the most part of the timeframe. Yet, be that as it may, my searches returned only a single and mislabeled result. Accordingly, it can be reasoned that a predominantly positive professional discourse surrounded the cloud computing phenomenon ever since it became discernible as a part

of the professional discourse of the professional community of information technology managers.

Unconvincing evidence of rhetorical persuasion

Despite the fact that the vast majority of items reflected a predominantly positive position towards the 'cloud computing paradigm', they generally reflected this position much more subtly than the proponents of rhetorical analysis tend to presume. That is, my coding efforts revealed that 132 of 178 items were largely disassociated and instrumental considerations, assessing the relative advantages and disadvantages of different applications of the 'cloud computing paradigm' under different situational circumstances. Of course, many of these items made rhetorical arguments which resembled the rhetorical archetype of logos. Rhetoric is subtly present in any textual staging; the rhetorical arguments of the vast majority of items, however, were really concerned with persuading the reader to understand different instrumental problems with the 'cloud computing paradigm' and different instrumental solutions to self-same. It would therefore be an unwarranted misconception to interpret the rhetorical arguments of these items as manifestations of active attempts to legitimatize to the 'cloud computing paradigm' through supportive justifications (cf. Green 2004).

The remaining 46 items were more rhetorically persuasive. Firstly, 44 items made very discernible use of the rhetorical archetype of ethos in presenting case studies (43 positive items, 1 negative item), which while generally being somewhat inconclusive about the actual outcomes of adopting the 'cloud computing paradigm', framed its adoption as being laudable by blatantly present rhetorical appeals to the character of prominent organizations. In terms of a positive position framed using the rhetorical archetype of ethos, a 2011 item in *CIO* framed the decision of services firm

Aquent to move its e-mail, enterprise resource planning system (ERP) and other crucial business applications, as resulting in the company gaining 'agility' and reducing its information technology expenditures by half (cf. Lemos 2011). Similarly, also in terms of a positive position framed using the rhetorical archetype of ethos, another 2011 item in *CIO* described how the dismantling of the bankrupt Lehman Brothers could not successfully have been handled, had it not been for a newly appointed information technology managers' decision to adopt the 'cloud computing paradigm' (cf. Bulkeley 2011).

Secondly, 2 items made likewise very discernible use of the rhetorical archetype of pathos in presenting personal narratives, framing its adoption as either very commendable or regrettable. In terms of a positive position framed using the rhetorical archetype of pathos, a 2012 item in *CIO* commenced with the author reminiscing a personal conversation that he had with the information technology manager at PepsiCo's Pizza Hut division in 1984. The information technology manager wrongly disregarded the rise of the 'client-server paradigm' in favor of the 'mainframe paradigm' already entrenched in the organization. Yet, seeing as the 'client-server paradigm' came to dominate organizational life, the information technology manager 'failed' and did so 'painfully':

> *"I'll never forget a conversation I had with the head of IT at PepsiCo's Pizza Hut division in 1984. At the time, Pizza Hut's technology operation was completely mainframe-based. The IT chief (who had a PhD in computer science) told me clearly, and quite loudly, that PCs were toys that would never be part of his organization. Over his dead body.*

Unfortunately, it turned out that way, figuratively speaking. PCs eventually became the primary technology for Pizza Hut employees to build spreadsheets, write memos and create presentations. In the field, PCs became the dominant technology at the point of sale. The CIO failed.

Oh my, that was painful."

<div align="right">(Hartung 2012)</div>

As previously mentioned, my coding efforts revealed that 132 of 178 items were largely disassociated and instrumental considerations, assessing the relative advantages and disadvantages of different applications of the 'cloud computing paradigm' under different situational circumstances. While I have briefly discussed that a number of items employed the rhetorical archetypes of ethos and pathos, primarily in framing adoption of the 'cloud computing paradigm' as laudable and commendable, the vast majority of items did not actively attempt to legitimize the 'cloud computing paradigm' by employing blatantly present rhetoric in supportive justifications. In terms of theoretical interpretation, these findings are thus indicative of what Green (2004, p.656) referred to as "the lack of a need to linguistically support the practice". That is, the pervasiveness of instrumental discourse and the relative absence of blatantly rhetorical arguments, testifies to the general acceptance of the 'cloud computing paradigm' within the professional community of information technology managers (cf. Green 2004; Colyvas & Powell 2006) as a specific sub-universe of meaning. More unambiguously, in a new sociological institutionalist sense, these findings therefore indicate that the 'cloud computing paradigm' has been relatively legitimate and taken-for-granted within the professional community of information technology managers during the entirety of the investigated timeframe from primo 2008 until ultimo 2012. In terms of theoretical

interpretations, these findings are likewise indicative of what Colyvas and Powell (2006) referred to as medium institutionalization. While Colyvas and Powell (2006) demonstrated that institutional legitimation ordinarily proceeds in terms of a chronological evolution from language packed with supportive justifications, legitimizing institutions on an ontological level with reference to their general value, I did not find any evidence of such. Rather, I interpret the pervasiveness of instrumental discourse as indicative of that the focus of the professional community has shifted from "a broad debate about the appropriateness of the activity" (2006, p.323) to a more instrumental debate, reflecting concerns with its actual and practical application in organizational life.

XII.   Discussion

As I initially embarked on my efforts to produce the present dissertation, I was convinced that the contemporary ubiquity of the 'cloud computing paradigm' was – at least partly – the outcome of an internal power struggle within the global computer industry. Retrospectively, I understand that my conviction was based on background readings of the practitioner-oriented publications of celebrated 'futurists' (see Carr 2005; Carr 2008; Rappa 2004), drawing upon the socio-economic and socio-technical toolkit of the large technological systems perspective within science and technology studies. Inspired by the works of Hughes (see e.g. 1987 for a condensed theoretical overview) on historical technologies such as drinking water and electricity, the authors framed the emergence of the 'cloud computing paradigm' as an unavoidable outcome of the historical inclination of *homo economicus* to consolidate the supply of utilities with broad application, when technologically feasible, and thus gain a more stable supply and significant economies of scale (Rappa 2004; Carr 2005; Carr 2008; but see also McAfee 2011 for an example of the resonance of the argument in the management press). Taken together, the historically and economically deterministic understanding promulgated by these authors thus portrayed the 'cloud computing paradigm' as a technology whose time had come, and elementary economics as the forces, which would diffuse it and lock it into its preordained place as the successor of the 'client-server paradigm' – cast, by them, in the very unflattering role of its dreadfully inefficient diametric opposite (Carr 2005; Carr 2008). The end users of computer capacity were

thus the beneficiaries of the 'cloud computing paradigm', and established computer industry participants, the reluctant benefactors with convincing economic incentives to maintain the historical oversupply materialized in the 'client-server-paradigm'.

Based on the conviction discussed above, institutional change seemed like an obvious topology to interpret the conjectured ensuing power struggles between, on the one hand, embodiments of the established organizational form of the 'client-server vendor' promulgating the mature institution of the 'client-server paradigm', and on the other hand, embodiments of the new organizational form of the 'cloud service vendor' promulgating the more premature institution of the 'cloud computing paradigm' (cf. e.g. Hoffman 1999). Calling into mind the earlier discussions of institutions, it should be emphasized that institutions are neither functionally nor logically integrated, since they have no ontologically 'real' existence outside of the cognition of their participants (Berger & Luckmann 1966). But according to this line of argument, institutional disintegration and contradiction can under no circumstances be anything else than a cognitive side-effect of the interpretation of institutions by their participants (Berger & Luckmann 1966). The fact that most entrenched institutions do appear integrated to their participants, can thus be attributed partly to the basic psychological need of human beings to experience their 'universe' as a meaningful whole (Berger & Luckmann 1966). For instance, it would be unbearably difficult for a human being to engage in the entrenched institution of the family meanwhile perceiving the church, the capitalist marketplace or any other entrenched institutions in modern society as tearing it apart.

Since the publication of the seminal chapter of Friedland and Alford (1991) in the canonical volume on organizational neoinstitutionalism edited by Powell and DiMaggio (1991), an ever increasing number of organizational

neoinstitutionalists have decided on institutional logics as the independent variables in explanations of institutional change (see e.g. Haveman & Rao 1997; Thornton & Ocasio 1999; Seo & Creed 2002). The presumption of disintegration and contradiction between institutions, each having their own internal logics, is at the core of this particular branch of organizational neoinstitutionalism (Thornton & Ocasio 2008). Institutional logics are thus understood as the independent preconditions that make embedded agency and institutional change possible, essentially by allowing social actors to juxtapose the institutional logics against one another (Thornton & Ocasio 2008). It cannot readily be disputed that many of the less entrenched institutions in organizational life appear disintegrated or contradictory. As Meyer and Rowan (1977, p.356) enunciated, "institutional environments are often pluralistic [...] and societies promulgate sharply inconsistent myths". Myths can be equaled with legitimations, but carry along with them the presumption of an inherent fallaciousness or unproductivity, which legitimations do not (cf. Berger & Luckmann 1966; Meyer & Rowan 1977).

Based on the conviction discussed above, institutional logics seemed as the independent variables, through which I could explain institutional change, against the backdrop of the disintegrated and contradictory institutions of the 'client-server paradigm' and the 'cloud computing paradigm'. However, calling into mind the earlier discussion of institutional disintegration and contradiction, I found myself in no position to make any *a priori* assertions with regards to conditions of institutional disintegration and contradiction in a given slice of social reality. Institutions may indeed appear as sharply inconsistent in their myths or legitimations to the organizational scientist, when perceived by him from his position as an uninitiated outsider. But the same institutions may simultaneously be interpreted as perfectly consistent in their myths or legitimations by their participants. The participants of

institutions may perceive of their typologies of roles as complimentary, thus variously applying to different behaviors, to different situations, to different social actors in altogether different slices of social reality. And, revealingly, my empirical analysis of the institutionalization of the 'cloud computing paradigm' within the professional community of information technology managers, and the persuasive overrepresentation of items reflecting a predominantly positive position towards selfsame, has provided empirical backing supporting this theorization. That is, much like the global computer industry participants *at large*, the professional community of information technology managers had largely converged around the 'cloud computing paradigm' in 2008.

XIII. Conclusion

With the present dissertation, I set forth to investigate the gradation to which the institutional legitimations of the 'cloud computing paradigm' had impacted the professional community of information technology managers, making the 'cloud computing paradigm' a legitimate and taken-for-granted institution within this sub-universe of meaning (cf. Berger & Luckmann 1966; Green 2004; Colyvas & Powell 2006). Therefore, in order to elucidate and answer this question, I investigated how professional discourse on the 'cloud computing paradigm' had unfolded in the information technology management trade press in a period from primo 2008, being the year the global computer industry *at large* converged around the 'cloud computing paradigm', to ultimo 2012. In doing so, I analyzed a total of 178 items, thus coding their predominant position towards the 'cloud computing paradigm' and the predominant rhetorical archetype, if any, through which they achieved their persuasiveness with regards to self-same position.

Firstly, my analysis revealed strong evidence of a predominantly positive position towards the 'cloud computing paradigm' in the vast majority of items analyzed, thus indicating the existence of a predominantly positive discourse regarding the phenomenon within the professional community of information technology managers. Secondly, my analysis revealed strong evidence of this predominantly positive discourse regarding the 'cloud computing paradigm' being largely instrumental, and as a consequence concerned with the relative advantages and disadvantages of applications of

the 'cloud computing paradigm' under different situational circumstances. In addition to the revelation that blatantly present rhetorical arguments were present in less than one third of the analyzed items (46 of 178 items), this finding was found indicative of a medium institutionalization of the 'cloud computing paradigm' within the professional community of information technology managers (cf. Colyvas & Powell 2006).

Accordingly, returning to the research question which I initially set forth to elucidate and answer, my conclusion can be précised as follows: Based on strong empirical evidence of a positive discourse regarding the 'cloud computing paradigm' within the information technology management trade press, in addition to a significant absence of blatantly rhetorical supportive justifications and commentary (cf. Green 2004; Colyvas & Powell 2006), I finalize with the conclusion that the global computer industry has been very successful in its expected institutional legitimations of the 'cloud computing paradigm' with regards to the professional community of information technology managers. That is, while the 'cloud computing paradigm' is a relatively recent phenomenon and cannot reasonably be understood as highly institutionalized due to its short history (cf. Colyvas & Powell 2006), my findings indicate that the professional community of information technology managers have taken it to heart in a gradation that resembles medium institutionalization.

XIV. References

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Appendix A: Rhetorical archetypes

Green (2004) emphasized the three rhetorical archetypes of pathos, logos and ethos. These rhetorical archetypes were also employed empirically by Suddaby and Greenwood (2005), although the authors did not go lengths to explicate them theoretically. Pathos, according to Green (2004), is rhetoric that appeals to the innermost emotions of the recipient. Psychologists have identified too many types of emotions to discuss here. What is important is not the specific type of emotion evoked, but the argument that appeals to emotions have a distinctive but fleeting ability to rapidly gain prominence in the cognition of their recipients (Green 2004).

Logos, also according to Green (2004), is rhetoric that appeals to the logic of the recipient – that is, to the recipients evaluation of the instrumentality of the social structure promulgated. Unlike appeals to emotions, appeals to logic do not have the ability to rapidly gain prominence in the limited cognitive attention of their recipients (Green 2004). That is, appeals based on logos are slower to gain prominence in the cognition of their recipients, because they require their recipients to validate them through a methodical calculation of means and ends (Green 2004). All things considered, appeals based on logos take longer time to manifest themselves in cognition than appeals to pathos, but are more persistent in cognition that appeals based on pathos once they are manifest (Green 2004).

Finally ethos, also according to Green (2004), is rhetoric that appeals to the moral and ethics of the recipient – that is, to the recipients evaluation of the

appropriateness of the social structure promulgated. Unlike rhetoric based on pathos and logos, which appeals to the concerns and interests of the recipient in various gradations, rhetoric based on ethos appears to concerns and interests shared amongst the participants of a slice of social reality (Green 2004). Appeals based on ethos are even slower that appeals based on logos to gain prominence in the cognition of their recipients; this is the case not only because they require their recipients to validate them against shared concerns and interests, but also because they potentially require the scarification of individual concerns and interests (Green 2004). All things considered, appeals based on ethos take longer time to manifest themselves in cognition than appeals based on pathos and logos, but are much more persistent and powerful in cognition than appeals based on paths and logos once they are manifest (Green 2004).