Seizing the Opportunity: Towards a Historiography of Information Systems

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ABSTRACT:

Historical perspectives are only timidly entering the world of IS research compared to historical research in management or organization studies. If major IS outlets have already published history-oriented papers, the number of historical papers - although increasing - remains low. We carried out a thematic analysis of all papers on History and IS published between 1972 and 2009 indexed on ABI and papers indexed in Google Scholar[TM] for the same period. We used a typology developed by theorists Usdiken and Kieser (2004) who classify historical organisation research into supplementarist, integrationist and reorientationist approaches. We outline their links with the epistemological stances well known in IS research, positivism, interpretivism and critical research; we then focus on their differences and historiographical characteristics. We found that most IS History papers are supplementarist descriptive case studies with limited uses of History. This paper then suggests that IS research could benefit from adopting integrationist and reorientationist historical perspectives and we offer some examples to illustrate how that would contribute to enriching, extending and challenging existing theories.

INTRODUCTION

Since the late 90s, a stream of research in IS has been promoting historical perspectives on organizational information systems (Mason *et al*, 1995, 1997a, 1997b; Bannister, 2002; Porra, *et al,* 2005; Land, 2010). The adoption of historical sensitivity is likely to be helpful in a field that is often driven by the 'awesome potential' of advanced ICTs. We often lose sight of issues as we are blinded by the glare of technology (Bannister, 2002; Land, 2010). If we acquire a historical dimension we may avoid regurgitating ideas with little awareness of their historical context, and being victims of IT fads and fashions (Westrup, 2005) which often damage the potential competitive advantage of firms. A lack of historical consciousness means that concepts and themes are often repackaged several years on, with little thought given to their historical context and origin (Bannister, 2002).

In contrast, an historical approach to organizations and their technological capabilities is an opportunity to develop reflexivity and criticism. It is a way to combat the universalistic and 'presentist' tendencies of general so-called management theory, or 'Heathrow Organisation Theory' after Gibson Burrell (1997). The latter allows business researchers to escape without any real sensitivity to the issues raised by the humanities and social sciences, to view technology as neutral, technical progress as natural, and to

view History[1] as hagiography (success stories, e.g. Peters and Waterman, success of IBM) rather than historiography.

From a managerial perspective, historical approaches can also help explore differently organisational assets through historical narratives about and by organisations (Brunninge, 2009) – for instance new elements for brand image, original corporate identities, memory, communication (Delahaye *et al*, 2009), culture (Barney, 1986) or forgotten products or processes (e.g. quality management, see Karsten *et al*, 2009). Corporate History has a relative malleability (Gioia *et al*, 2002) and is a resource managers use for differentiation (Foster *et al*, 2009).

Searching both for theoretical and methodological benefits, management and organization studies have experienced a move towards History (see Goodman and Kruger, 1988; Kieser, 1989, 1994). According to Clark and Rowlinson (2004), the historic 'turn' represents a transformation of organization studies in three senses, and this could apply equally well to IS research:

- Turn against the view that organization studies should constitute a branch of the *science* of society;
- Turn towards history, conceptualizing the past as process and context rather than as a *variable*;
- Turn to historiographical debates and historical theories of *interpretation* which recognize the inherent ambiguity of the term History itself.

Indeed, the use of historical perspectives has been criticized, in the fields of organization theory (Clarke and Rowlinson, 2004; Usdiken and Kieser, 2004; Kieser, 1994), management (Goodman and Kruger, 1988; O'Brien *et al*, 2004) and information systems (Bannister, 2002; Land, 2010) for its lack of achievement.

Clarke and Rowlinson (2004) provide a critical analysis of historical efforts in organisation studies. They argue that there have been minor rather than major applications of historical methods; for instance the discourse of contingency and strategic choice still seeks to identify universal characteristics, even if it is to allow for some variation between historical contexts. Research tries to include historical variability but still tends towards deterministic and universalist explanations. Some approaches like new institutionalism and organisational ecology have become more historical − with longitudinal studies of organisational fields and populations or use of large-scale historical databases. But their time frame is usually only a chronological time-line and presumes a linear account of history. Overall, organisation studies have only carried out limited historical research (Ibid). The same question can be raised about IS research. According to Land (2010), one can wonder if History is not (still) a "missed opportunity". We argue here that there are ways of avoiding "simple data dredging" (Goodman and Kruger, 1988) and we will make some suggestions to revisit and seize this historical opportunity.

This paper starts by examining IS historical research through a conceptual framework commonly used in management and organisation studies (Usdiken and Kieser, 2004) in order to evaluate the use of History in IS research systematically. We explain this framework by relating it to the epistemological viewpoints of positivism, interpretivism and critical theory which are well-accepted in IS research and we briefly outline corresponding historiographical methods. We then use this historical conceptual framework to analyse a large data set of IS History papers and provide suggestions for further historical IS research.

HISTORIOGRAPHICAL METHODS IN ORGANIZATION THEORY: A CONCEPTUAL FRAMEWORK

Usdiken and Kieser (2004)[2] have developed a typology which is summarised in Table 1. They classify different degrees of incorporation of historical approaches in organizational and management research and suggest that they fall into three categories:

- *supplementarist*, where historical 'context' is simply added and is only a complement to common positivist approaches still focusing on variables, although with a longer time span than usual. It "adheres to the view of organization theory as social scientistic[3] and merely adds History as another contextual variable,

alongside other variables such as national cultures" (Booth and Rowlinson, 2006: 8);

- *integrationist,* or a full consideration of History with new or stronger links between organization theory and history. The aim is "to enrich organization theory by developing links with the humanities, including history, literary theory and philosophy, without completely abandoning a social scientistic orientation" (Ibid: 8);

- and *reorientationist* or post-positivist, which examines and repositions dominant discourses including our own (such as progress or efficiency), and produces a criticism and renewal of organization theory itself, on the basis of history. This "involves a thoroughgoing critique of existing theories of organization for their ahistorical orientation" (Ibid: 8).

Usdiken and Kieser (2004) claim that supplementarist research seems to be more frequent in organization theory than integrationist and reorientationist organizational research.

<INSERT TABLE 1 ABOUT HERE >

Examples of historical *supplementarist* approaches in management and organization studies are how neo-institutional economics use historical analyses of corporate formations. Approaches like new institutionalism have become more 'historical': they study a small number of variables over longer historical periods, but usually are not rich contextual case studies of organizations on a long-term timescale. Their emphasis is on

persistence and homogeneity, and they exhibit a fear of lapsing into narrative interpretations of historical events that stress their complexity, uniqueness and contingency.

Examples of *integrationist* work can be found in the business History perspective applied to the world of organizations. Business historians have progressed to realise the potential of their work to inform contemporary managerial decision-making. More *interpretivist* and inductive analyses of History in organisational studies (Kieser, 1989, 1994) have abandoned 'general models' that are conceptualised independently of the phenomena to be explained. They are longitudinal case studies which try to account for subtle temporal and institutional dimensions, use processual (as opposed to factor) approaches and focus on contextual differences, organizational change and culture.

Reorientationist approaches are present in the History of management, and of management ideas and thought. They move beyond the following false dichotomy: whether History is merely a literary or narrative form, designed for political and moral edification ('Heathrow Organisation Theory'); or a science, designed for explanation of the past and prediction of the future (scientist analytical schemas) in which the logic of efficiency has been superimposed onto the narratives of historians. The so-called 'efficiency principle' militates against both historical and ethical considerations. It presumes that History is efficient, and it subordinates History to conceptual modelling. But reorientationist research is rare in organization studies (Usdiken and Kieser, 2004).

These three perspectives make sense in the field of History itself, which has always drawn on multiple epistemological stances. For clarification purposes, we relate the supplementarist-integrationist-reorientationist typology to the three epistemological positions of positivism, interpretivism and critical research, well known in IS research (Hirschheim, 1985; Orlikowski and Baroudi, 1991; Walsham, 1993, 1995; Klein and Myers, 1991).

Etymologically, History is an inquiry (στορίαι [Historíai] means 'inquiry' in Greek). Historiography can refer either to the History of History, or to the investigation of historical methods (Furay and Salevouris, 2000). Our focus here is more on the latter, in relationship with epistemological stances.

Positivistic researchers have defined History as driven by the search for truth, that is to say, 'facts' (Carr, 1961; Seignobos, 1901). Carr wanted to "show how it really was" (1961:3 quoted by Bannister, 2002). In classical historical research (Simiand, 1903) this often focuses on:

  - Chronologies which underscore the genealogy of present structures and habits and avoid the details specific to any particular period;
  - Centring History on the biography of individuals who embody a certain historical trend (like the common success and heroic stories in management);
  - Political ideas, i.e. giving priority to political History which underlines political ideology and trends, whose importance is often exaggerated;

- National interests (Le Goff, 2006) based on, or even legitimating, national frontiers. Continental or international world analyses are rarely carried out by classic historians.

A positivist historian will search for triangulation of traces and clues to get the 'real' picture of a context located in the past. Other researchers in historiography have challenged this view and proposed viewing History in a more *interpretivist* and *critical* way - see for instance Aron's (1938) invitation to work out a critical philosophy of History by drawing on Dilthey, Rickert, Simmel, and Max Weber. According to an *interpretivist* stance, Collingwood (1993) suggests defining History as "the study of thought"; History is the "re-enactment in the historian's mind of the thought whose History he/she is studying". Marrou (1954) invited historians to adopt a *critical* stance by concentrating on the fuzzy boundary between the study of the present and that of the past; she proposed that "from a logical point of view, there is nothing specific in understanding related to the past. It involves the same process as the understanding of others in the present, in particular (as most of the time and in the best situation, the document taken into account is a "text") the comprehension of articulated language" (p.83).

A *critical* historiographical perspective (Le Goff, 2006: 73) invites historians to "build a new scientific chronology which dates phenomena according to the duration of their effectiveness in History instead of the starting-point of their production". In other words, the emphasis is more on tracing the long-term effects and discourses associated with certain phenomena instead of the phenomena themselves. This leads to a stronger focus on institutions and social structures rather than isolated actions in organizations, and is a

good way to answer Braudel's (1958) well-known call for a "longue durée" (or long-term) perspective in history. There are few major social theories which are ahistorical or neglectful of this longue durée perspective. For instance institutionalism, evolutionism and structuration theory are all based on long-term historiographical logic and often, long-term observations.

To explain this further, let's look at one of the most fundamental questions debated in history: whether there is a 'typical' historical theorization of social transformations within societies and organizations. An example in IS research could be the typical conceptualization of IT providing a competitive advantage and transforming organizations which is (has been?) very dominant. This key question could be reversed. This would mean investigating its historiography i.e. the long-term duration of this conceptualization in its historical institutional and social context; for instance, the emergence of the notion of IT and competitive advantage in the context of deregulation and liberalisation in specific situations (e.g. US airlines which pioneered the use of IT for competitive advantage with SABRE in the 1980s), the relationship of IT to the shaping of free markets, and the social and economic effects on industry de/restructuring. It de-universalizes these conceptualisations, provides a critical analysis of their effectiveness and leads to more sophisticated theorizations. Similarly, Sauer (2008: 65, 75) has argued that "capitalism has motivated the exploitation of IT (…) for its potential rather than its actual value"; and more generally that historical 'backcasting' reveals "series of mutual adjustments" rather than outputs of a linear model.

Although there is an apparent link between Usdiken and Kieser's three categories and the respective epistemologies of *positivism*, *interpretivism*, and *critical* historical research above, there is an important difference. According to Orlikowski and Baroudi (1991: 5-6):

> "Positivist studies are premised on the existence of a priori fixed relationships within phenomena which are typically investigated with structured instrumentation. Such studies serve primarily to test theory, in an attempt to increase predictive understanding of phenomena.", whilst interpretive studies "assume that people create and associate their own subjective and intersubjective meanings as they interact with the world around them." (Ibid: 5). In contrast, "critical studies aim to critique the status quo, through the exposure of what are believed to be deep-seated, structural contradictions within social systems, and thereby to transform these alienating and restrictive social conditions." (Ibid: 5-6).

Whereas these three epistemologies are based on three distinctive views of knowledge and the social world, supplementarist, integrationist and reorientationist approaches form a continuum. This continuum is about the way in which the reference discipline (organisation studies or information systems in our case) is challenged by the historical approach. At the lowest end of the spectrum, supplementarism only adds History without affecting the premises of theory; for instance seeking correlations between variables (presumed to be stable) of organizational change over time. Integrationism goes a little further in identifying historical processes of, for instance, organisational change over

time, although it still aims to improve theories; at the highest end, conceptualizations of organizational change theories themselves are questioned through the reorientationist historical perspective.

In addition, we believe that interpretivism (as described by Walsham, 1993) can be integrationist or even re-orientationist; but that re-orientationism does not uniquely correspond to an interpretive perspective. Some reorientationist work can adopt an interpretivist, or even a positivist approach to critically de-construct organization theory. On the other hand, we see a more direct correspondence between supplementarism (e.g. in its understanding of time and actors) and positivism, Integrationism can be positivist or interpretivist but not critical. Rather than just adopting different epistemological stances, historical approaches operate on a continuum:

- consolidating existing theories (*supplementarist*, positivist, never critical),
- extending theories (*integrationist*, positivist or interpretivist), or
- challenging theories (*re-orientationist*, positivist or interpretivist, and always critical).

An element of critical approaches, as already quoted above, is the exposure of deep-seated contradictions (Orlikowski and Baroudi, 1991). To achieve this, an important tenet of criticality is the centrality of discourse where the constitutive powers of language are emphasised and 'natural' or 'universal' objects are viewed as discursively and historically produced. This idea grew out of the 'linguistic turn' in French post-

structuralist philosophy; it opposes the objectivists on the one hand, with their science aimed at predicting / controlling nature and people, and humanists on the other for privileging the individual's reported experience and a naïve version of human freedom (see Mitev and Howcroft, 2011). For instance, the Foucauldian version views discourses as systems of genealogical thought which are contingent upon, as well as informing, material practices (see Willcocks 2004). Thus, tracing the historical emergence of 'strategy' discourses at a particular time can lead to identifying deep seated contradictions, including the sustaining and enhancement of the prerogatives of management, the generation of a sense of personal security for managers, the expression of a gendered masculinity, and the facilitation and legitimisation of the exercise of power (Alvesson and Deetz, 1996). A reorientationist perspective challenges theories (here strategy, see also Knights and Morgan, 1991, 1995) and is an often neglected element of critical approaches in management. Critical IS research in particular was initially guided by the emancipatory Frankfurt school and many have argued (e.g. Howcroft and Trauth, 2004) that the relative dominance of the Habermassian approach is unnecessarily limiting and have suggested that other approaches may be of benefit; we believe historical perspectives can contribute.

There have been tense debates about historiography as a method. Beyond the issue of the existence of specific historical methods (Veyne, 1971), History is a material which is handled, analysed and narrated by historians. Historians process materials left by past actions through access to recorded events. Those can be written or oral, based on monuments (archaeology is close to history), pictures, objects or documents. To select

their primary material and develop an historical account, historians traditionally rely on the sets of criteria and associated questions outlined below (Langlois and Seignobos, 1897). Although positivist in their orientation, these criteria are still a deep part of historical rigour, whatever the epistemological position. They apply mainly to textual artefacts.

- *External* criteria: they deal with the physical features of materials under study (e.g. paper, ink or seals). To authenticate a document, skills in palaeography or epigraphy are often required. Historians of computing (e.g. Campbell Kelly, 2010) include artefacts such as algorithms.

- *Internal* criteria: these are related to the internal coherence/consistency of a text, i.e. examining whether different parts of a text are coherent with one another.

- *Source* criteria: where does this material come from? This is often a way to evaluate the authenticity and accuracy of a testimony. In a corporate environment, a leaflet will not be valued in the same way as personal notes in a retired chairperson's diary. The temporal distance between events described and the period of their writing/formalizing in the document will also be taken into account.

- *Range/target* criteria, related to the receiver of a text. In what ways the artefact may have been received by people of that time? What could have been the expectations of the builder/sender of the artefact? How did s/he frame it to anticipate receivers' response?

Additionally, Garraghan (1946) has suggested the following six types of questions corresponding to some of these criteria. These questions show great potential for the study of IS and computer programmes in organizations.

- When was the document/artefact written (date)? - *External*

- Where was it produced (localization)? - *External*

- By whom (authorship)? - *Source*

- From what pre-existing materials (analysis)? - *Source*

- In what original form (integrity)? - *Internal*

- With what evidential value (credibility)? - *Internal*

Beyond this critical examination of materials, historical methods focus on either the elaboration of a set of events (with the aim of constructing them 'objectively') or the understanding of perceptions/representations (or interpretations) of actors involved in a specific spatio-temporal setting. For a *positivist* historian, facts will be isolated and then gathered according to their similarity or topicality. Each fact is linked to a cause or a set of causes which will be uncovered through a systematic study of materials. For a more *interpretivist* historian, imagination will play a stronger role. S/he will have to put himself/herself in the shoes of remote (in time and space) stakeholders of the society, organization, tribe, etc. under study.

Eventually, whatever the epistemological stance (positivist, interpretivist or critical), comes the time of writing/narrating history. This stage of research has been thoroughly

investigated recently with the 'linguistic turn'. According to Munslow (2001: 1), "the recognition that History is a narrative about the past written in the here and now, rather than some distanced mirror of it, has been a significant issue within the profession for several years". We believe that current debates in IS research about interpretivist and critical research could be renewed through an exploration of historiography, which can help address two key interdependent pitfalls[4]: anachronism and acontextuality (Booth and Rowlinson, 2006).

Organizational scholars should give time serious consideration (see Orlikowski and Yates, 2002). Indeed, in many so-called historical studies, it is often assumed that "any society, from the prehistoric to the present, faces the same organizational problems as our own". Anachronism, presentism and universalism dominate. Universalism often "emphasizes continuity over change" (Booth and Rowlinson, 2006: 6). Many organizational studies are not anchored enough in time, space and context. They present "fictionalized organizations in a non-dated, extended present." The historic turn problematizes universalism and presentism:

> "It raises the question of the extent to which organizations, and organizational research need to be historicized, that is, located in a specific historical context. For example, was the multinational enterprise born in ancient Greece? Or is it a form of organization that is specific to a globalized, capitalist economy? In which case, were the forms of foreign direct investment during the first age of globalization comparable to those of the late 20th century? And in terms of the

present, how generalizable across time and space are the findings of an ethnographer from a fictionalized and supposedly typical organization?" (Booth and Rowlinson, 2006: 6).

There have been similar calls by Kieser (1989, 1994) for more interpretivist and inductive analyses of History in organisational studies and for abandoning 'general models' that are conceptualised independently of the phenomena to be explained.

Can the same difficulties be noticed in IS research? Has IS research been mainly supplementarist, integrationist or re-orientationist? How historical has been positivist, interpretivist and critical IS research? How can we revisit the opportunity offered by historiography (see Land, 2010)? These will be the issues which will be addressed next. We first examine existing historical IS research critically, using Usdiken and Kieser's (2004) classification to rank different degrees of incorporation of historical approaches into IS research. We then illustrate what the potential could be for historical analyses of IS.

FROM HISTORICAL PERSPECTIVES IN ORGANIZATION THEORY TO HISTORICAL PERSPECTIVES IN IS RESEARCH

In order to examine how historical approaches have been applied to IS research, we first present a thematic analysis of all papers on History and IS found through a systematic search of the ABI bibliographic database. We classify them using Usdiken and Kieser's (2004) typology already presented in the introduction above. Using a further search of Google Scholar[TM] and pre-existing literature reviews, we then propose a qualitative analysis of a few papers typical of each of Usdiken and Kieser's categories in order to discuss the main trends identified.

We provide an overview of IS papers with an historical perspective. In order to do this we concentrated on refereed journal articles since they are the type of publication that are regarded as being of highest quality, as compared to international conference papers or books[5]. Our concern is with papers deemed to be of a standard sufficiently high for international journal publication and thereby legitimised as worthy of interest to an international community. In addition, we focused specifically on journals that were located within the IS discipline and only considered papers which were located unequivocally within this literature. The journals chosen had information systems as their primary focus as opposed to management science, computer science, or information science. We selected journals whose principal readership is intended for those involved in the IS field.

The aim of this literature review is to provide an illustration of the quantity and nature of the types of papers that have been published in IS journals. We do not claim that the survey is exhaustive; nor do we assume that a more comprehensive survey (e.g. including

conference proceedings or using other databases) would deliver significantly different results. The analysis involved the identification of all research papers in ABI that might broadly be defined as a historical perspective on information systems. Using a further search on Google Scholar™ (http://scholar.google.com/)[6], we double checked our primary analysis in order to confirm general tendencies and identify complementary references, used in our discussion. Therefore, in our survey of relevant literature our intention is to focus on material that is published in outlets specifically targeted as IS. Our research goal is to learn how a historical perspective has been incorporated into the IS literature.

We constructed a data set by retrieving all academic papers with the words "information systems" and "history" (in citation and abstract) from ABI. Our search focused on full text academic papers. This resulted in 384 papers from 1972 to 2009. Among the 384 papers, we found a lot of irrelevant papers, i.e. papers using the word History from a technical perspective (e.g. "historical customer data") or only incidentally. We identified only 64 papers which were historical in their content. We then used the three dimensions mentioned earlier (supplementarist, integrationist, reorientationist) to code each paper (see Appendices 1 and 2 for raw data and additional analysis). The results are presented in a succinct form in Tables 2 and 3. An extract of the full list of papers identified on ABI along with their analytical coding can be found in Appendix 3.

<INSERT TABLES 2 AND 3 ABOUT HERE>

The main findings are:

- The very small number of historical papers (only 64 from 1972 to 2009, see also Appendix 3);

- A limited use of History for challenging theories (only 1.6% of reorientationist papers);

- The sharp increase of supplementarist papers consolidating existing theories (in particular in the 2000s, see also Figure 1);

- The fact that there is a moderate number of IS journals (see Table 1). Many interesting papers we found were published in journals in information science, history, computer science or economics.

Beyond this, historical IS papers follow a pattern: almost entirely absent reorientationist papers, a steady increase of integrationist publications and a dramatic increase of supplementarist articles (see Figure 1). History is therefore entering IS research through supplementarism (i.e. longer time-span of data collection and a focus on processes rather than variables or factors). From the mid nineties, it seems nonetheless that an increasing number of (integrationist) papers borrowed theories, concepts or methods from history. But this does not result in specific IS historical perspectives. Perhaps this is due to the fact that IS phenomena are relatively recent so historical 'data' are only slowly

accumulating and IS scholars need historical distance to be able to distinguish long-term historical trends.

<INSERT FIGURE 1 ABOUT HERE>

Our additional analysis based on Google Scholar[TM] produces the same results as our ABI analysis (see Appendix 4). From the 70s to the early 2000s, we identified 190 papers. The bulk was published in the 90s, with an increase in the late 90s. In addition, most articles were not published in IS journals and could be classified as supplementarist or integrationist (although we did not carry out such a systematic analysis as the one we did with ABI).

DISCUSSION

From Long-term Research to Historiography

Analysing these historical papers shows that: most are a description of events broadly covering a couple of decades of IS, within a single organization (see Land, 2000; Maier *et al*, 2002; D'Arcy *et al*, 2008; Chen and Hirschheim, 2004); some focused on using a few historical concepts or techniques applied to a broader time scale (Robey and Newman, 1996; Mason *et al*, 1997a, 1997b; Yates, 1997, 1999); researchers often relied on second hand data; their theorisation was not strongly linked to History; they developed concepts which could have been developed on the basis of non-historical data; and they did not include long-term analyses or broader institutional contexts. This is also confirmed by a more general analysis of historical papers, by means of Google Scholar[TM] (see Appendix 4), complemented by Bannister (2002)[7] and previous literature reviews by de Vaujany (2006) and Mitev and Howcroft (2005).

Clearly, historical research on organizational information systems has been relatively rare (Bannister, 2002). The Porra, Hirschheim and Parks' (2005) History of the Texaco corporate information technology functions, Yates' work (1999, 2005) on the structuring of early computer use in the life insurance industry, Winter and Taylor's (2001) analysis of the role of IT in proto-industrial and post-industrial organizations, or the Harvard MIS

History project (Mc Kenney *et al*, 1995) are among the rare, often cited references of historical works by IS scholars. Outside IS research, some historians of computing have also been interested in organizational computer systems. For instance, Wells (2000) studied artefacts and outdated computers in Wall Street and Heide (2004) analyzed record management systems in France between 1935 and 1944.

If some of this research has adopted a descriptive stance shedding light on the evolution of various forms of IS, there are few writings in IS that have worked out a historiography of IS. Among the rare historiographical conceptualizations within the field, Mason *et al* (1997a, 1997b) and Yates (1997, 1999) are worth examining further.

Mason *et al* first suggest that there are three main roles, which can be endorsed by historical figures: the leader (identifying phases of crisis), the "maestro" (mastering key business or technological domains) and the "supertech" (who will develop relevant innovations to overcome the crisis). Second, they propose two key concepts; in their notion of cascade, these researchers insist on the importance of discontinuities in the flow of events, which is very close to the well-known notion of punctuated equilibrium and strategic alignment (see Majchrzak *et al*, 2000). Following a crisis, IS would gradually converge to a balanced configuration of technology and human assets. This conceptualization of historical change proposes a three-part method consisting in the identification of key roles and variables, the specification of units of analysis, and the gathering of evidence.

Other IS historical studies have drawn on interpretive frameworks. For instance, Yates based her work on Giddens' structuration theory (Yates, 1997, 1999). Her method is less based on crisis identification and more on everyday continuous enactment of structure.

To better understand the supplementarist, integrationist and reorientationist approaches to IS History and their implications, we examined a sample of papers in more depth (see Table 4).

<INSERT TABLE 4 ABOUT HERE>

Supplementarist research tends to have a descriptive understanding of historical research to consolidate existing IS theories. For instance, Simon *et al* (2009, see also Table 4) juxtaposed the History of a leading US multinational company and its offshore vendors with the literature on offshore outsourcing to refine attributes of best practices/maturity for a model for mature IT governance. By contrast, Mason *et al* (1997a, 1997b) can be classified as *integrationist*; they use historical evidence to build and extend the theory that IT has become "the most influential force leading to restructuring of business and political economy as a whole". Their aim is to "reveal how IT forces have changed businesses, organisations, and industries" and they draw on the Schumpeterian creative/destructive approach to economic cycles. Their research base is "exemplary" IT-based business histories to "demonstrate" the effects of investments in IT on companies, industries and societies, exemplified by the Harvard MIS History Project. It consists of

accounts of success stories at Bank of America (McKenney *et al*, 1997), American Airlines, FedEx, Bank One, Wal-Mart, Frito-Lay and American Hospital Supply.

Studies for explaining IS in organisations can present both historical accounts and multivariate analysis, using a supplementarist approach, but can also expand into integrationist approaches to enrich IS theories. Accordingly, they recognise that present organisational forms and socio-technical arrangements have been shaped by past events (e.g. economic cycles) and their course of development has been influenced by the broader historical context. It implies turning to: processes of organisational and institutional change over time; development of organisational forms and variations across societal settings; path dependencies and continuities in organisational ideas and practices over time; historically specific material, social and cultural settings and their relations with organisations and technologies - these settings can include education, national institutions, economic and political history, the role of the State, religion, etc.

Supplementarist and integrationist stances dominate our ABI findings, and reorientationist research is rare. Reorientationist perspectives could challenge existing theories, generate new research questions as well as look at old questions in new ways (Usdiken and Kieser, 2004). By anchoring research findings more clearly to their social origins can push thinking about alternative explanations for phenomena, help identify more and less stable concepts, and expand research horizons. The reorientationist historical approach can help frame theory and research within their time-related boundaries, and provide perspective on the present through the past. Reorientationism helps confront current and popular organisational and managerial ideas with practices in the past likely to reveal continuities and similarities. Studying the fate of earlier

approaches and their features enables critical assessments of ideas that are currently promulgated. Universalist ahistorical stances are challenged and debates around what is made of History and how it is done are favoured.

For instance, revisiting the well-known stock of pioneer IT success stories would help understand how these discourses constituted our world at certain times and in certain spaces, and what their deep seated contradictions were. It would expose universalist Chandlerian heroic accounts of how particular technical solutions were seen as yielding superior results, and the effects of 'ideal types' of IT innovation such as cascade and crisis. Examining these mechanisms in the past would help understand the History of our intellectual constructs and their own historicity and help challenge the construction of current theories. As avenues for further historiographical research in IS, some of the ways in which History can help to extend or reshape IS theoretical underpinnings are explored further below.

Suggestions for Further Research

From the *integrationist* perspective, we believe a longue-durée historiographical outlook can help grasping the specificity of the institutional context of IS design, use or implementation in contemporary organizations. An example of a long-cycle approach is Martins' (2009) study of first-tier managers' roles from the industrial revolution to the 21st century which concludes that "if key factors are not considered from an in-depth

historical perspective (…) the people management role will remain a major organisational dilemma". Neo-institutional frameworks (DiMaggio and Powell, 1983; Scott, 2001), structuration theory (Giddens, 1984), evolutionary economics (Nelson and Winter, 1982) or social critical realism (Archer, 1995), to name but a few, can help modelling the dynamic of society, organizational fields or populations of organizations. Such theories can help understanding sociotechnical path-dependencies (Van Driel and Dolfsma, 2009). Notions such as increasing returns, lock-in or self-reinforcement are promising ways to extend organizational perspectives (Page, 2006). Models used in IS such as absorptive capability, critical success factors of IT project management or strategic alignment models of IS could be extended by the inclusion of these broader institutional factors and their history. Such is also the case of rising sociomaterial approaches (see Orlikowski, 2007). The integration of long-term perspectives could be a way to make sense of materiality and the evolution of its social meaning through time.

From a *reorientationist* perspective, historiography could also be a way to deconstruct IS frameworks and their relationship to managerial decision-making. Indeed, organizational History (and of information systems), could be conceptualized as a managerial asset; historians have shown that corporate History has a relative malleability (Gioia *et al*, 2002). It is a resource managers can use for differentiation (Foster *et al*, 2009). Firstly, because narratives about IT itself can become a differentiating myth, like the famous SABRE case-study (Hopper, 1990; Copeland, 1991). There has been debate (Adam, 1990; Monteiro and Mcdonald, 1996; Mitev, 2004) about whether SABRE really helped to gain a competitive advantage *per se*, when there were other major influences such as

airline deregulation. But what it clear, is that this software has become a differentiating myth for American Airlines. Long-term History of financial, human and technical resources can help conceptualise further how the combination of resources over the History of an organization evolves (see Penrose, 1959) and is intertwined with IT (Porra *et al*, 2006).

Historiography can also be a way to narrate IS differently and challenge existing theories, through more reflexive approaches. Examples in management studies which could inspire IS researchers are: Cooke's (1999) historiography of the concept of change management; Zan's (1994; 2004) History of accounting histories; and the historical institutional analysis by Caswill and Wensley (2007) on how relevance and rigour have been constituted in management research in the UK. A critical example about the History of IS is Haigh's (2001) historical exploration of the role and vested interests of various professional bodies in 'inventing' information systems. Rayward (1996) uses Braudel's notions of 'longue', 'moyenne' and 'courte durée' to provide a new perspective on the History of information science; and the notions of synchrony and diachrony[8] to suggest other approaches to its historical study, in particular its interdisciplinarity over time.

The work of historians such as Le Goff (2006) could be an inspiration to write our scientific articles, books, case narratives differently, maybe in a more innovative and a more critical way. Grey and Sinclair (2006) suggest critical forms of writing to address aesthetic, moral and political concerns and ask questions on what our ways of writing accomplish in political terms. Using historical fiction is another example of writing

which opens up the possibility of new critical insights (Czarniawska, 1999); and so is the use of History for critically examining management education (Down, 2001; Zald, 2002). Finally, and more reflectively, Hatchuel and Glise (2003) propose a redefinition of management research based on a historical analysis which could also be carried out in IS research.

Beyond suggesting these broad avenues for further research, we now illustrate what these avenues could look like. We concentrate in particular on two re-orientationist examples since our main finding is that there is very little evidence of reorientationist IS research, so it may be more difficult to carry out. We expand two IS topics which we think lend themselves to a critical reorientationist analysis: outsourcing/centralisation with a positivist reorientationist approach; and action research/empowerment with an interpretivist reorientationist approach.

The History of the 'putting out' systems (Kieser, 1994) could be compared to current outsourcing and issues of de/centralisation. Putting out was a complex network of contracts of manufacture, usually analysed through labour process analysis (workers' control of product and process, division of labour, factory systems, technical superiority, matching of technology with skills, family lives) during the industrial revolution in Western societies, especially the UK. Historical material shows that putting out was a consequence - rather than the cause - of a division of work that was already in existence across rural communities in the North West of England in the textile industry. The centralisation of production was triggered by the need to fill the capacity of large-scale

machinery, but putting out systems were far more effective than the centralized factory. Factory owners were forced to compromise as they were unable to find a technology for decentralised production. One could see parallels with the contracting out of workers through increasingly mobile ICTs, which takes place within countries and globally across borders, as opposed to just within regions. It may be possible to contrast and compare across cases, to highlight features particular to each historical context in order to gain some unexpected insights into current practices. While we are not suggesting that History repeats itself, informed historical analyses could serve to reflect on current thinking and critique existing theories of IT-enabled work design, for instance the consequences of offshoring on communities both in Southern and Northern parts of the world (see Howcroft and Richardson, 2010).

The historiography of influential ideas and thinkers on action research and change management could bring insights into the topic of participatory design and empowerment through ICTs. Cooke (1999) looked at the work of Kurt Lewin (1946), who is noted for the development of action research in organizational studies. Action research methods are concerned with changing the social system through engagement on the part of the researcher with the intention of making a contribution to social problems. However, action research was originally developed to deal with 'minority' problems, group dynamics and race relations, in a context of inter-ethnic conflict (US black apartheid). And participatory anthropology had been used by the British Empire and its liberal colonial administration's principle of 'indirect rule'. This principle was the stimulus for the development of action research, throwing an ambiguous light on the origins and aims

of these methods, providing an interesting lens through which query current participatory or community based technologies.

Similarly, Cooke (1999) also examined how the change management discourse has rewritten its own History and how its very construction has been a political process[9], which has excluded a certain understanding of radical change, and "shaped an understanding of change as technocratic and ideologically neutral". Change management deals with the 'correct' understanding of the need for change and of who the subjects of change are. Cooke (1999) argues that Edgar Schein (1961) incorporated 'radical' ideas into the dominant management orthodoxy of the time and that his change management techniques draw on representations of an oriental 'other', in the context of a US military opposing liberation struggles in Asian countries. Participatory 'liberation' management does not question the right of those controlling the process. Social political and ideological circumstances in which it is applied are assumed to be uncontested and objectively given. Change management is therefore analysed as arising from drives to make 'subjects', whose voices are never represented, manageable. The current and growing use of ubiquitous managerial technologies to empower IT users and employees could be examined with these histories in mind.

CONCLUDING REMARKS: AN HISTORICAL OPPORTUNITY

Our literature survey and classification of IS historical journal papers over the last 38 years show that IS historical research has mainly been supplementarist (confirming

existing theories) rather than integrationist (extending theories) or reorientationist (questioning theories), although the two latter have potential for a critical understanding of IS-related organisational changes. In the last section, we have made proposals to inspire integrationist and reorientationist historical IS researchers. Reviewing examples in related disciplines such as business history, management and organizational history and the social history of technology may provide further inspiration and broaden the scope of IS History research in the future.

There are still debates within the discipline of History, in particular about the focus on discourses and the use of historical narratives. Linear narratives tend to attribute a causal relation between events which is misleading. And historians have a problem with the indifference to the origin and context of historical texts. But the focus on metaphors, material/cultural practices and historically based analyses of discourses about technologies, can help reject scientific and historical notions of 'progress' (e.g. technological progress), avoid inferences of causality and universal truths, and bring some distance on present organisations and technologies by making them unfamiliar. As Rowlinson and Carter (2002: 400) state:

> "History is about lies, not truth. It is a struggle for domination acted out in a play of wills (…) in order to demonstrate the historical specificity of (…) organisations that have generally been overlooked in the discourse of organisation studies, historical research is required (…) and that necessitates the provision of concrete histories of organisations, practices and institutions".

We can add here concrete histories of their information systems and technologies in order to enrich, extend and question existing theories about their rationales, uses and effects. Whether IS researchers will be interested in carrying out this type of research in order to refute Ford's provocative statement "History is bunk" (Land, 2010) remains to be seen.

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[1] To improve understanding we use the traditional distinction between 'history' (the past) and History (historical science).

[2] For broader discussions about historical approaches in management and organization studies, see a new journal set up in 2006: *Management & Organization History* (http://moh.sagepub.com/). This unique journal corresponds to a community of organizational historians which departs from the business history community, through its focus on "the study of management, organizations and organizing". It is related to a regular track at the European Group in Organizations Studies (EGOS) conference about "historical perspectives in organizations studies" (see http://www.egos2012.net/2011/06/sub-theme-08-swg-historical-perspectives-in-organization-studies/).

[3] Scientism refers to a belief in the universal applicability of the systematic methods and approach of science, especially the view that empirical science constitutes the most authoritative worldview or most valuable part of human learning, to the exclusion of other viewpoints.

[4] Booth and Rowlinson use the metaphors of the "Flintstone method" and the "Simpsons method" to describe these two situations.

[5] Books are clearly a better example of historical research and there are a few in IS. However, the pressures on researchers to publish in journals have grown enormously and there are hardly any rewards in publishing research monographs, particularly in business schools. This is another debate.

[6] Based on the same search terms as for ABI, see Appendix 3.

[7] Beyond the references mentioned in this paper, see also Bannister's website for an inventory of IS historical literature: http://is2.lse.ac.uk/leo/historio.htm.

[8] Synchronic analysis views phenomena only at one point in time, usually the present; a diachronic analysis regards a phenomenon in terms of developments through time.

[9] This is a good example of what we meant earlier by historiography as the History of History.

Table **Erreur ! Document principal seulement.**. A typology of historical perspectives in organization studies
(adapted from Usdiken and Kieser, 2004)

HISTORICAL STANCES IN ORGANIZATION STUDIES	PRINCIPLE	EXAMPLES
Supplementarist historical perspective (i.e. peripheral use of history)	Longer time-span than usual case studies. Limited use of historical concepts, theories or methods. Descriptive approaches. Consolidate existing theories. Positivist stance.	Structural contingency and strategic choice seek to identify salient universal contingencies even if it is to allow for variation between historical contexts. It tries to explain variability but tends towards determinism. See most research under the umbrella of the 'Heathrow theory' critique (Burrell, 1997)

Integrationist historical perspective (i.e. use of History to extend existing theoretical frameworks)	Integration of historical techniques and theories into organizational research. Extension of existing theories. Extending theories. Positivist or interpretivist stance.	Approaches like new institutionalism and organisational ecology have become more historical with longitudinal studies of organisational fields and populations, cross-sectional studies or use of large-scale historical databases. Their time frame is usually a simple time-line with a basic chronological account of history. See Kieser's (1989) work about monastic organizations which is a way to extend classic research about bureaucracy or proto-bureaucracy.
Reorientationist historical perspective (i.e. extensive use of historical data and historiography to deconstruct existing theoretical frameworks and to propose new ones)	Reorientation of organizational research (i.e. new organization theories) on the basis of historiography. Challenging theories. Critical stance.	Reorientationist approaches are more present in the History of management, and of management ideas and thought. They help identify and analyse the following cliches: - History neglected and/or used to support a narrative about powerful new claims ('Heathrow Organisation Theory'); - History as science, designed for explanation of the past and prediction of the future (scientism). See Actor Network Theory based critical organizational historiographical analyses (Hartt *et al*, 2009; Durepos *et al*, 2010).

Table 2 Relative distribution of IS historical papers

	Number of historical papers per category	Percentage of historical papers per category	Number of papers in IS journals	Percentage in IS journals
Supplementarist	34	53.1%	19	59.38%
Integrationist	29	45.31%	11	37.5%
Reorientationist	1	1.56%	1	3%
Total	64	100%	31	100%

Table 3 Distribution of IS historical papers per decade

Decades	70s	80s	90s	2000s
Supplementarist	1	3	1	29
Integrationist	0	5	5	19
Reorientationist	0	0	1	0

Figure 1 Evolution of supplementarist, integrationist and reorientationist publications in IS historical research (per decade)
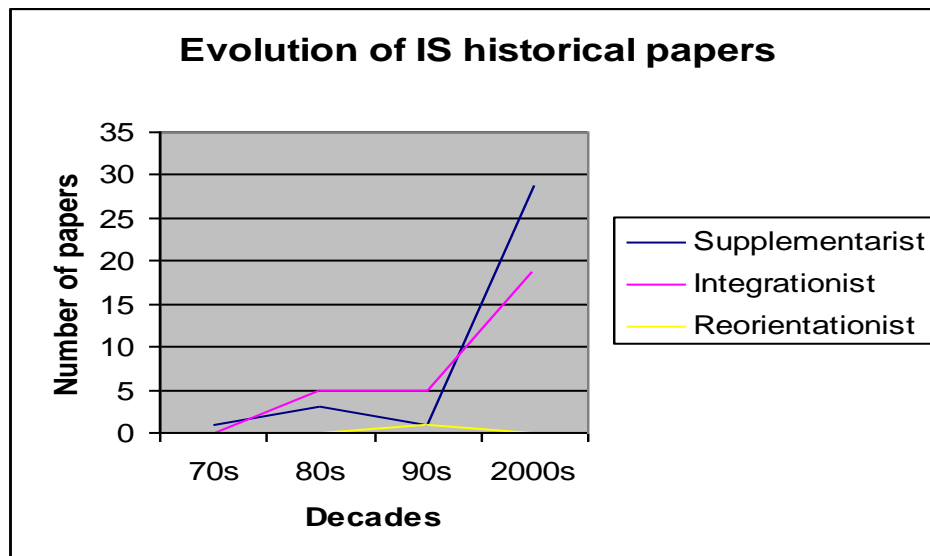

Table 4 Classification and examples of historical perspectives in IS research

HISTORICAL STANCES	IS HISTORICAL RESEARCH
Supplementarist	See Appendix 3. Most ABI articles we found include longer time-spans but use an ahistorical stance. History is only a variable. Creating Better Governance of Offshore Services (Simon *et al*, 2009)

Integrationist	From ABI:
	The History of Texaco's corporate information technology function (Porra, Hirschheim and Parks, 2005). The historical perspective is used to extend the general systems theory as applied to IS.
	Use History to reflect on IS and large organizations (Yates, 1999).
	IT and organizational transformation (Elbanna, 2002).
	Cross-History of IT and organizational change in the British Census from 1801-1911 (Campbell-Kelly and Aspray, 1996).
	From Google Scholar:
	The History of SAP proposed by Pollock and Williams (2008).
Reorientationist	From ABI:
	An Historical Method for MIS Research: Steps and Assumptions (Mason *et al*, 1997a),
	Developing an Historical Tradition in MIS Research (Mason *et al*, 1997b).
	The role of IT in the transformation of work. A comparison between proto and post industrial organizations.
	Reconceptualization of the role of IT in organizations (Winter and Taylor, 1996).
	From Google Scholar:
	Drawing on structuration theory, Yates (1999) shows the "conservative influence of existing patterns" (in the insurance industry of the 50s) which is often underestimated in non-historical research about IT. It sheds light on new and innovative uses of computer technology in insurance from a longue durée perspective.

APPENDIX 1
Results of ABI thematic coding per year and per decade

Request: "information systems"+"history"

Target: citation and abstract. Focused on academic (i.e. peer-reviewed) journals and those with full text version (which allowed a real exploration of abstracts and if necessary to confirm classification, the full text).
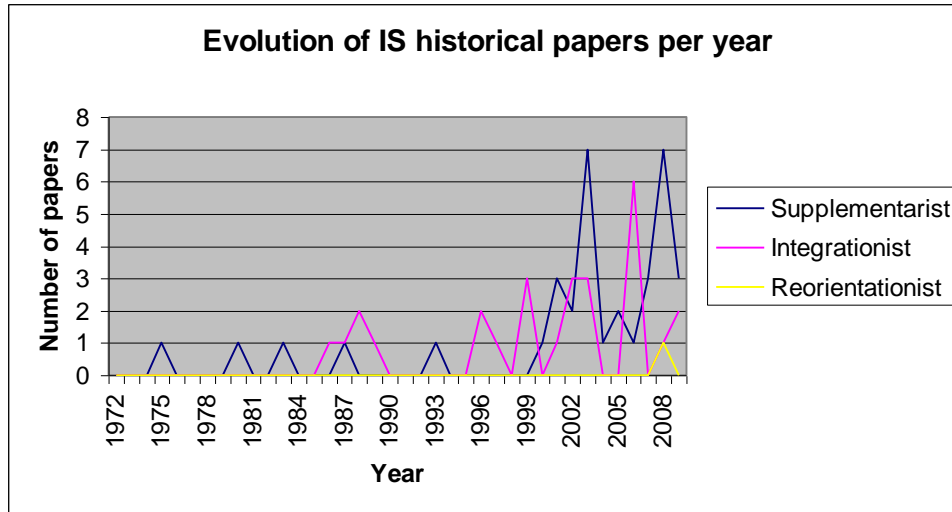
Period: 1972-2009.

Results: 384 papers, among which 64 with a non-anecdotal use of the notion of history, and 31 published in IS journals.

NB: we chose to target citation and abstract to increase the likelihood to get real History oriented papers, and not incidental uses of the notion of history. We defined a journal as an IS journal if present in the ISworld ranking.
(see: http://ais.affiniscape.com/displaycommon.cfm?an=1&subarticlenbr=432)

Evolution per year

Evolution of IS historical papers per year

Evolution per decade

|	70s	80s	90s	2000s
Supplementarist	1	3	1	29
Integrationist	0	5	5	19
Reorientationist	0	0	1	0

APPENDIX 2
**Distribution of historical stance (supplementarist, integrationist or reorientationist)
in IS papers published in academic journals overall and in IS journals in particular.**

Distribution of supplementarist, integrationist and reorientationist papers

2%

45%

53%

- Supplementarist
- Integrationist
- Reorientationist
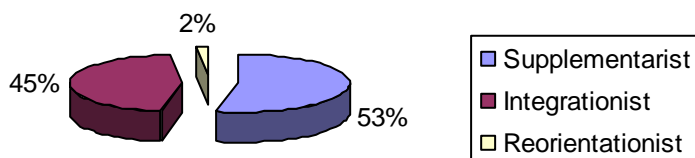
Distribution of supplementarist, integrationist and reorientationist papers in IS journals

3%

38%

59%

- Supplementarist
- Integrationist
- Reorientationist
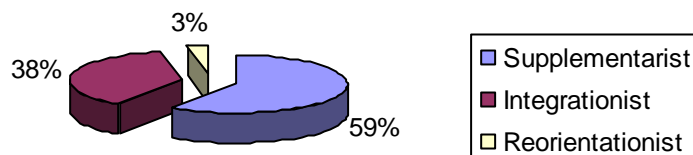
APPENDIX 3
Coding of a selection of historical papers (from ABI)

Classification scheme applied for our coding: NR, S, I or R

NR: Not Relevant, rejected. Only incidental use of historical approaches. The word "history" is used in the paper, but only incidentally.

S: Supplementarist. An historical perspective is claimed. But it is only a case narrative or the use of long-term data without any specific conceptualisation. Historical material is

not used to produce a specific theorization. Nor do authors use historical concepts or methods.

I: Integrationist. Historical material is used to produce a specific theorization. Alternatively, authors use historical concepts or methods. This is done so as to extend current theories.

R: Re-orientationist. Historical material is used to produce a specific theorization. Alternatively, authors use historical concepts or methods. This is not done to extend current theories. It is done to develop specific theorizations about historical perspectives on IS.

Extract of the thematic coding (full list of 54 pages is available upon request)

ARTICLES	CODING
1. The Influence of Weather Conditions on the Relative Incident Rate of Fishing Vessels Yue Wu, Ronald P Pelot, Casey Hilliard. Risk Analysis. Oxford: Jul 2009. Vol. 29, Iss. 7; p. 985	**NR**
2. Inventory control with product returns: The impact of imperfect information Marisa P de Brito, Erwin A van der Laan. European Journal of Operational Research. Amsterdam: Apr 1, 2009. Vol. 194, Iss. 1; p. 85	**S**
3. Creating Better Governance of Offshore Services Judith C Simon, Robin S Poston, Bill Kettinger. Information Systems Management. Boston: Spring 2009. Vol. 26, Iss. 2; p. 110	**S**
4. Improving access to safe drinking water in rural, remote and least-wealthy small islands: non-traditional methods in Chuuk State, Federated States of Micronesia William James Smith Jr. International Journal of Environmental Technology and Management. Wolverton Mill: 2009. Vol. 10, Iss. 2; p. 167	**NR**
5. Modeling propensity to move after job change using event History analysis and temporal GIS Marie-Hélène Vandersmissen, Anne-Marie Séguin, Marius Thériault, Christophe Claramunt. Journal of Geographical Systems. Heidelberg: Mar 2009. Vol. 11, Iss. 1; p. 37 (29 pages)	**I**

6. String alignment for automated document versioning Wei Lee Woon, Kuok-Shoong Daniel Wong. Knowledge and Information Systems. London: Mar 2009. Vol. 18, Iss. 3; p. 293 (17 pages)	**S**
7. Neolithic informatics: The nature of information Paul Beynon-Davies. International Journal of Information Management. Kidlington: Feb 2009. Vol. 29, Iss. 1; p. 3.	**I**
8. A Framework for Information Systems Metaresearch: The Quest for Identity Viju Raghupathi, Linda Weiser Friedman. Communications of the Association for Information Systems. Atlanta: 2009. Vol. 24, Iss. 1; p. 50.	**NR**
9. Explaining information systems change: a punctuated socio-technical change model Kalle Lyytinen, Mike Newman. European Journal of Information Systems. Basingstoke: Dec 2008. Vol. 17, Iss. 6; p. 589 (25 pages).	**I**
10. Credit Information System Act Anonymous. International Financial Law Review. London: Dec 2008/Jan 2009.	**NR**
11. Supporting Spatial Semantics with SPARQL Dave Kolas. Transactions in GIS. Oxford: Dec 2008. Vol. 12, Iss. s1; p. 5.	**NR**
12. Changes in the importance of topics in auditing education: 2000-2005 Jack Armitage. Managerial Auditing Journal. Bradford: 2008. Vol. 23, Iss. 9; p. 935.	**NR**
(…)	

Appendix 4
Google Scholar Search Results

For the query: history+"information systems", only in the title

Period: 1972-2009

Number of results: 190

	1974-1975	1975-1976	1976-1977	1978-1979	1979-1980	1980-1981	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989
Year	1	4	4	1	3	3	1	0	0	0	0	3	6	5
Total	1	5	8	5	4	6	4	1	0	0	0	3	9	11

	1993-1994	1994-1995	1995-1996	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
Year	5	6	4	5	10	28	15	6	5	12	18	13	20	20
Total	18	24	28	33	43	71	86	92	97	109	127	140	160	180

Evolution of IS historical publications (from Google Scholar)

Number of publications per period

Years (1972-2009)

Annual publications
Cumulated publications