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Institutional Theory of Information Technology

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Abstract and Keywords

This article provides an overview of institutional theory from the seminal papers of the 1970s to the more recent contributions, which consider institutional change and deinstitutionalization. Institutional theory also shows how macro-units of analysis, i.e. regulatory, legal, and policy frameworks, are also important in influencing and determining organizational and behavioural change. While institutional theory is concerned with stability and persistence, information technologies are often associated with rapid, and sometimes disruptive, societal and organizational changes. This article demonstrates the explicit and implicit points of disagreement among institutional theorists. It critically evaluates the theoretical and empirical strengths and weaknesses of this body of work, and caution against a tendency to simplify institutional concepts into one-dimensional constructs. Finally, it offers a research agenda for the IS field to embrace the institutional perspective and develop an institutional theory of IT.

Keywords: institutional theory, behavioural change, empirical strengths, research, policy framework

Introduction

INSTITUTIONAL theory offers a rich and diverse conceptualization of information technology (IT). In various expressions of the theory, a common theme is that the activities of developing and using IT are subject to social pressures, sometimes from external sources such as production and user organizations, professions, and government agencies, other times from legitimated rules and logics embodied within the technologies. These institutional pressures push individuals, groups, and organizations to take intentional or unintentional actions such as conforming to technology mandates, adopting popular innovations, and modifying business practices to fit technology, all possibly leading to increased opportunities for social approval or legitimacy. Since institutional pressures operate conjointly or despite any particular actor's considerations of economic and technical utility,

institutional theory draws attention away from the economic-rationalistic perspective, now dominating the research and practice in Information Systems, toward the social nature of IT. Actors may make instrumentally rational choices among various options to develop and/or use IT. Nonetheless, institutional theory holds that the boundary of such rationality is socially constructed, and if legitimated and taken for granted as a social fact, operates and persists even beneath the level of consciousness. Institutional analysis thus aims to understand how legitimated social facts are socially constructed and what consequences they bring about. Conducted frequently and naturally at supra-individual levels, institutional analysis differs from atomistic economic analysis in that properties of the social construction process cannot be reduced to aggregations of individual actors' characteristics, motives, and interests. As a result of its distinctive perspective, (p. 138) institutional theory provides understanding of phenomena not so well explained by economic-rationalist models, such as the wide adoption and acceptance of IT innovations seemingly suboptimal in economic and technical terms.

While institutional theory is gaining increasing attention in IS research, it is still a relatively novel theoretical perspective in IS. Most IS studies using the institutional perspective focus on the organization as the unit of analysis, where institutional concepts are operationalized as a lens to interpret and analyse data. Another approach is to use the organizational field as the level of analysis to extend our theoretical and empirical understanding of institutional processes and effects across industries, sectors, and organizations. Thus far applications of the theory by IS scholars demonstrate both narrow and broad interpretations, perhaps because these scholars come from diverse disciplinary and research traditions, or because institutional theorists have tended to stress their differences more than agreements, or because institutional theory is inherently difficult to explicate as ‘it taps taken-for-granted assumptions at the core of social action’ (Zucker 1987: 443).

Given the rich history and complexity of institutional theory and its current state in IS research, this chapter has three objectives. First, it seeks to provide IS scholars, regardless of their prior exposure to institutional theory, with an overview of the theory, focusing on the most vibrant stream—the new or neo-institutionalism in organizational analysis. We demonstrate the explicit and implicit points of disagreement among institutional theorists and also articulate common themes, principles, processes, and elements of the theory that they share. This effort helps IS researchers stay up to date on the development of institutional theory as we theorize, operationalize, and refine institutional concepts for IS research and the wider academic community. Second, we present a review of the IS studies which have applied institutional theory. We critically evaluate the theoretical and empirical strengths and weaknesses of this body of work, and caution against a tendency to simplify institutional concepts into one-dimensional constructs without appreciating the ontological and epistemological antecedents of institutionalism. Finally, we offer a research agenda for the IS field to embrace the institutional perspective and develop an *institutional theory of IT*.

Foundations of Institutional Theory

The publication of the New Institutionalism in Organizational Analysis (Powell and DiMaggio 1991) and Institutions and Organizations (Scott 1995) signified the renaissance in the study of institutions in social sciences (DiMaggio and Powell 1991). These influential books show that institutionalism is a highly complex paradigm with contributions delineated across disciplines (e.g. economics, sociology, political science, history, and ecology) and time spans (e.g. ‘old’ and ‘new’ institutionalism). This chapter is rooted in the new institutionalism in organizational studies (primarily in sociology) (p. 139) because this is the most vibrant and established research

stream of institutionalism. Central concepts such as institution, institutionalization, deinstitutionalism, and reinstitutionalization add further complexity as they incorporate both macro- and micro-dimensions.

Scott (2001: 49) gives five definitions of institution, stressing they are, ‘multi-faceted, durable, social structures, made up of symbolic elements, social activities, and material resources’. Jepperson (1991) gives sixteen examples of an institution, including, marriage, formal organization, academic tenure, and the corporation. Institutionalization, is thus the process by which an institution attains a stable and durable state or property. Deinstitutionalization is a departure from institutionalization, which represents ‘the process by which the legitimacy of an established or institutionalized organizational practice erodes or discontinues’ (Oliver 1992: 564). A further concept, reinstitutionalization, is an ‘exit from one institutionalization, and entry into another institutional form, organized around different principles or rules’ (Jepperson 1991: 152).

As DiMaggio and Powell (1991: 1) point out, institutional analysis was used in the work of Emile Durkheim in the nineteenth century where he studied ‘social facts as things’. Later in the twentieth century, Selznick (1957: 16–17) provided a classic insight that to ‘institutionalize is to infuse with value beyond the technical requirements of the task at hand’. This suggested an impediment to effective task performance where the goals of the organization were subverted, thus drawing a distinction between institutional and task elements at the levels of the environment and organization. This dichotomy of macro- and micro-phenomena identified in old institutionalism continues in the new institutionalism, thus extending the breadth and depth of institutional theory where conceptual and empirical challenges continue. A significant challenge is defining institution as both a theoretical concept and construct for empirical investigation. Associated with such complexity and diversity of institutional forms, the notion of institution is more easily understood by reviewing institutionalists' seminal work and trying the analytical tools institutionalists developed.

Three classic papers are among those that represent the essence of neo-institutionalism. These papers introduce the central concepts within institutional theory. The central argument of Meyer and Rowan's (1977) paper was that formal organizational structures emerge as reflections of rationalized myths and rules. Using abstract language, they suggest,

> Institutional rules function as myths which organizations incorporate, gaining legitimacy, resources, stability, and enhanced survival prospects. Organizations whose structures become isomorphic with the myths of the institutional environment, in contrast with those primarily structured by the demands of technical production and exchange, decrease internal coordination and control in order to maintain legitimacy. Structures are decoupled from each other and from ongoing activities. (p. 340)

In the same year, Zucker (1977) examined institutionalization in the context of cultural persistence. She was critical of traditional approaches to institutionalization (p. 140) that overlooked this issue. Three levels of institutionalization on three aspects of cultural persistence were identified. They were: generational uniformity of cultural understanding, maintenance of these understandings, and resistance to change of these understandings. Zucker found strong support for the prediction that, ‘the greater the degree of institutionalization, the greater the generational uniformity, maintenance, and resistance to change of cultural understandings’ (p. 276).

Further development of institutional concepts was found in DiMaggio and Powell's (1983) influential paper that examined the link between institutional isomorphism and rationality. These authors posed the question: ‘What makes organizations so similar’ (DiMaggio and Powell 1983: 147)? They argued that ‘the engine’ of rationalization and bureaucratization had shifted from the competitive marketplace to the state and the professions.

They were interested to examine the ‘startling homogeneity of organizational forms and practices’. Developing the concept of the organizational field, which they defined as ‘those organizations that, in the aggregate, constitute a recognized area of institutional life’ (DiMaggio and Powell 1983: 148) they contended that, once a set of organizations becomes a field, a paradox emerges in that ‘rational actors make their organizations increasingly similar as they try to change them’ (p. 147). The authors developed three distinctive isomorphic processes: coercive, mimetic, and normative to explain institutional isomorphism. Coercive isomorphism results from both formal and informal pressures exerted on organizations by powerful entities such as the state and by cultural expectations in the organization's environment. Mimetic isomorphism derives from uncertainty. This occurs when organizational technologies are poorly understood, goals are ambiguous, or when the environment creates symbolic uncertainty. These factors encourage organizations to model themselves after other organizations. Normative pressures stem largely from professionalization, which means the collective struggle of members of an occupation to define the conditions and methods of their work. This is to control ‘the production of producers’ and to establish a cognitive base and legitimacy for their occupational autonomy.

In an early review paper on institutional theories of organization, Zucker (1987) presented environment and organization as two distinct theoretical approaches to institutionalization. The *environment-as-institution* perspective posits that institutions exist in an organization's environment as social facts. The basic institutional process is the reproduction or copying of environmental social facts at the organizational level. The *organization-as-institution* perspective contends that institutions arise within the organization. The central institutional process is thus generation—the creation of new institutional elements at the organization level. Reproduction is therefore a consequence of institutionalization rather than a cause. Addressing the question, ‘What is the meaning of institutional?’ (p. 445), Zucker (1987) presented two defining elements shared by theoretical approaches to institutionalization in organizations. They include, (a) a rule-like, social fact quality of an organized pattern of action (exterior) and (b) an embedding in formal structures, such as formal aspects of organizations that are not tied to particular actors or situations (nonpersonal/objective)’ (p. 444). As a departure from earlier contributions on institutional theory where (p. 141) conceptions were ‘tautological’, ‘descriptive’, or ‘untestable’, Zucker (1987) contended that neo-institutional theory viewed institutionalization as a variable that separated ‘its causes from the major consequence’ (p. 444). Her review of institutional theory proclaimed that much of the empirical work examined the theory piecemeal, and seldom tested the causal predictions and that research on causes of institutionalization had been ‘eclipsed by study of its consequences or outcomes’.

Since the publication of these seminal papers on institutional theory, further work has greatly enhanced the theoretical and empirical development of the field. In the following four subsections, we organize scholarly work on institutional theory into four broad areas, drawing from Scott's (1995) study, which delineates the societal, sectoral, organizational, and individual dimensions of institutionalism. In each area, we delineate the key theoretical contributions and methodological challenges. We illustrate the changing fashions within institutional theory, particularly as contributions for the past three decades are depicted as ‘new institutionalism’ (DiMaggio and Powell 1991) presenting an intellectual departure from the old institutionalism of Selznick (1949), Perrow (1986), and colleagues. The criteria for classifying publications are (a) their main title, and/or (b) their substantive content (see Appendix A). We recognize that some contributions may span two or more categories or theoretical perspectives, but our primary purpose for this exercise is to demonstrate the scale and scope of institutionalist literature, rather than to provide a definitive classification system.

Construction, Maintenance, and Diffusion

The construction, maintenance, and diffusion of institutional arrangements are exemplified by a number of studies that adopt either variance or process models. Zucker (1977) observed that institutionalization is both a property and a process variable. As a property variable, institution is observed as an entity. This may be a cultural, political, or social system that exhibits one or more features or properties. Variance theories view institutions as entities. They examine their characteristics, view them as abstract independent or dependent variables, and endeavour to establish their causal relations to other variables. Precursor (independent) variables determine the values of outcome (dependent) variables (Scott 1995).

Process theories examine a series of occurrences of events rather than a set of closely defined variables (Mohr 1982). In process theories, time is important, particularly, the time ordering of events that may be delineated into sequences that make up different eras. For example, a conceptual model by Tolbert and Zucker (1996) delineates the component processes of institutionalization into three distinct stages: habitualization, objectification, and sedimentation. This framework provides a conceptual tool for understanding the different stages of the institutionalization process, where innovation may become institutionalized (sedimentation) or fail to move through the various stages, remaining at the habitualized stage. Theoretical models of this nature are useful (p. 142) for conceptualizing innovation as a process, but the extent to which the various stages are empirically distinct can only be verified through longitudinal research.

To a large extent, it is arbitrary to distinguish the properties and processes used to create institutions from those that may change them. The literature, however, shows a distinction in that some studies examine the conditions and processes which give rise to new rules and practices (institutional creation), while others examine the beliefs, norms, and practices which become threatened over time and lead to deinstitutionalization. Studies concerned with institution building or creation are found in many disciplines (e.g. ecology, economics, political science, sociology, and history) and focus on different units of analysis (e.g. societal, sector, field, population, organization, and interpersonal) (Scott 1995). The topics of these studies have included: conditions that give rise to new institutional arrangements (Suchman 1995), cultural-cognitive aspects of institutionalism (DiMaggio 1991a), social construction of knowledge (Mizruchi and Fein 1999), and institutionalization through discourse (Phillips, Lawrence, and Hardy 2004).

In conjunction with the work on institutional construction, institutional theorists further examine how institutions are maintained and diffused. Zucker (1977) argued that the traditional approaches to institutionalization do not provide an adequate explanation of cultural persistence. Nearly two decades later, Scott (1995) similarly observed that institutional theory has paid little attention to the issue of institutional persistence, with many scholars disagreeing over the mechanisms that underlie stability. According to Scott (1995), three broad conceptions of institution influence views on maintenance. They include: regulatory view, which emphasizes rational and conscious control efforts concerning interests, agency and power, and the deployment of sanctions (DiMaggio 1988), normative view, which emphasizes the stabilizing influence of shared norms, and cultural-cognitive view, which emphasizes the unconscious, taken-for-granted assumptions about social reality.

These three institutional views also help explain the diffusion of innovations, an ever-interesting phenomenon previously examined primarily from the communication of information perspective (Rogers 2003). Regulative mandates demand compliances, forcing more social actors to adopt innovations faster than without such mandates (Tolbert and Zucker 1983). Normative pressures push innovations through formal or informal ties among actors in social networks such as profession, community, industry associations. However, normative pressures based on relational ties in social networks can only explain a fraction of the diffusion process (Strang and Soule 1998). As

Strang and Meyer (1994) argued, ‘when the diffusion process is socially meaningless, as in the spread of measles, physical contact may be all that is required for transmission to occur. When adoptions are socially meaningful acts, it is common to think of actors as making different choices cognitively available to each other, developing shared understandings and exploring the consequences of innovation through each other's experience’ (p. 101). According to this view, cultural-cognitive processes can ‘theorize’ an innovation as an efficient means to an end considered important by actors belonging to socially constructed categories. It is this theorization that helps diffuse, legitimate, and (p. 143) institutionalize innovations (Strang and Meyer 1994; Tolbert and Zucker 1996). Finally, the regulative, normative, and cultural-cognitive processes are not mutually exclusive. They may be interdependent. For example, recent institutional research has found that regulatory activities often depend on normative and cognitive elements as actors negotiate, interpret, and socially construct the meaning of laws and regulations based on normative and cultural-cognitive considerations (Dobbin and Sutton 1998; Edelman, Ugger, and Erlanger 1999).

Organizational Fields and Institutional Logics

The concept of organizational field is now well established in institutional theory and extends beyond the notion of organization as a single entity. DiMaggio and Powell (1983) asserted that, ‘By organizational field, we mean those organizations that, in the aggregate, constitute a recognized area of institutional life: key suppliers, resource and product consumers, regulatory agencies, and other organizations that produce similar services or products’ (p. 148). These authors suggested that the structure of the organizational field must be defined on the basis of empirical investigation and cannot be determined a priori. At a more abstract level, the authors claimed, ‘fields only exist to the extent that they are institutionally defined’. They identified four parts in the process of institutional definition or structuration: (1) an increase in the extent of interaction among organizations in the field; (2) the emergence of sharply defined inter-organizational structures of domination and patterns of coalition; (3) an increase in the information load with which organizations in the field must contend; (4) and the development of a mutual awareness among participants in a set of organizations that they are involved in a common enterprise (DiMaggio and Powell 1983: 148). Similarly, Scott (2001: 84) offered another abstract definition: ‘The notion of field connotes the existence of a community of organizations that partakes of a common meaning system and whose participants interact more frequently and fatefully with one another than with actors outside of the field’.

The concept of organizational field focuses upon a macro, interorganization analysis. Within institutional theory, the concept of the organizational field has continued to gain ground and differs in its unit of analysis from sectoral or population approaches since it includes ‘the totality of relevant actors’ (DiMaggio and Powell 1983: 148). Research studies used the concept of organizational field to examine field structure (DiMaggio 1986), task environment relationships (Oliver 1997), and institutional entrepreneurship in emerging fields (Maguire, Hardy, and Lawrence 2004).

Closely aligned with the concept of organizational field is institutional logics defined as ‘sets of ‘material’ practices and symbolic constructions which constitute a field's organizing principles and which are available to organizations and individuals to elaborate’ (Friedland and Alford 1991: 248). They ‘provide the formal and informal rules of action, interaction, and interpretation that guide and constrain decision (p. 144) makers in accomplishing the organization's tasks and in obtaining social status, credits, penalties and rewards in the process’ (Ocasio 1997) and the ‘cognitive maps or the belief systems that are carried by individuals located in an organizational field to embed meaning to their activities’ (Scott et al. 2000: 20).

Many studies examine the relationship between traditional institutional logics and emerging logics in fields such as the craft industry (Thornton 2002), healthcare (Scott et al. 2000; Reay and Hinings 2005; Currie and Guah 2007), and higher education publishing (Thornton and Ocasio 1999). Others examine how innovations at the periphery of the radio broadcasting field exerted influences that migrated to the core of the field once new practices were shown to be effective (Leblebici et al. 1991). This study showed how the existing social structure of the field shaped the efficacy of non-routine action.

Organizational Structure, Performance, and Choice

Neo-institutionalism views institutionalization as occurring at the societal, sectoral, field, and inter-organizational levels, where the primary focal lens is on how organizational forms, structural components, performance outcomes, and individual choices become institutionalized. Many studies on institutional processes examine the effects on specific organizations (Scott 2001). A distinction is made between formal and informal structures of an organization; the former being the 'blueprint' for activities that comprise the rationalized formal structure that is more likely to arise in highly institutionalized contexts.

The classic paper by Meyer and Rowan (1977) argued that the formal structures of many organizations reflect the myths of their institutional environments, rather than the demands of their work activities. Formal organizational structures arise as reflections of rationalized institutional rules that contribute to the expansion and growing complexity of these structures. Institutional rules serve as myths which organizations incorporate into their formal structure to gain legitimacy, scarce resources, stability, and enhanced prospects of long-term survival. Organizations where structures become isomorphic with the myths of the institutional environment, rather than those structured by the demands of technical production and exchange, act to decrease internal coordination and control as a means of maintaining legitimacy. Such isomorphism results in formal structures becoming decoupled from technical/informal structures and from ongoing activities (Meyer and Rowan 1977).

From this influential paper, the concepts of isomorphism, legitimacy, and decoupling became central in neo-institutionalist work. As the old institutionalism saw organizations as organic wholes, the new institutionalism viewed organizations 'loosely coupled arrays of standardized elements' (DiMaggio and Powell 1991: 14). Neo-institutionalism emphasizes the 'homogeneity of organizations' and the 'stability of institutionalized components' (DiMaggio and Powell 1991: 14) and institutional isomorphism (DiMaggio and Powell (p. 145) 1983; Meyer and Rowan 1977). Institutionalization was seen as a phenomenological process, where social relationships and actions exhibit a taken-for-granted quality, and a state of affairs where 'shared cognitions determine what actions are possible and what has meaning' (Zucker 1983: 2).

Neo-institutionalism examines rationality at the level of the formal structure, rather than at the individual actor level. It attributes the 'diffusion of departments and operating procedures to inter-organizational influences, conformity, and the persuasiveness of cultural accounts, rather than to the functions they are intended to perform' (DiMaggio and Powell 1991: 13). Conflicts arise between conformity to institutionalized rules and efficiency criteria. Attempts to coordinate and control activity to promote efficiency will undermine ceremonial conformity, which will, in turn, reduce the support and legitimacy in the organization. To maintain conformity, organizations that reflect institutional rules will seek to 'buffer their formal structures from the uncertainties of technical activities by becoming loosely coupled, building gaps between their formal structures and actual work activities' (Meyer and Rowan 1977: 340–1). Institutionalists who examine change across organizational fields and within organizations have more recently used the concept of decoupling. Greenwood and Hinings (1996) hypothesize that

radical change in tightly coupled institutional fields is likely to be revolutionary, unlike in loosely coupled fields (which is more common) and likely to be evolutionary. We will examine institutional change in the next section.

An important debate within institutional theory concerns the relationship between institutional and rational choice arguments, which are often seen as diametrically opposed (DiMaggio 1991b). Rational choice models have played a significant role in social science both in the understanding of designing institutions and the how they serve the individual and collective interests of institutional actors. These models are invariably used to empirically test the dysfunctional features of institutions, since this is a prominent issue in understanding institutional outcomes. Rational choice theorists are interested in individual and collective goal-orientated, purposive behaviour, and also non-rational and even irrational choices, without which, the rational choice thesis becomes a tautology.

A fundamental criticism of rational choice models embraces a wider criticism of functionalist premisses in social science. This contends that we cannot claim to have explained the origin of an institution simply by reference to the functionality of the institution. A tension in rational choice theory is between individual rationality and institutional inefficiency. Institutional actors (individual or collective) may exhibit non-instrumental and non-rational behaviour that produces unintended consequences. They may also consciously pursue institutional goals and outcomes that are not conducive to efficient task performance. Based on these observations, many institutionalists express serious criticisms of rational choice perspectives since they exaggerate issues of choice and agency, while overlooking important institutional influences emanating from the societal, sectoral and field levels (Greenwood and Hinings 2006).

As a ‘radical retreat from society’ rational choice theories are criticized for adopting the premiss that the actions and behaviour of instrumental, rational individuals are the (p. 146) primary cause of institutional arrangements. Public-choice theory, agency theory, rational-actor models, and the new institutional economics all adopt this premiss. Rational choice theorists perceive organizational arrangements, ‘whether party, state, family or firm—from the rationality of individuals in exchange, each attempting to maximise his or her utility by exchanging scarce, usually material resources’ (Friedland and Alford 1991: 232).

On closer examination of the broader social science literature, however, the dichotomy between institutional and rational actor accounts is oversimplified. While functional institutionalism tends to overstate the role of institutional actors and undermine the societal and field influences on organizational outcomes, the two perspectives are not necessarily diametrically opposed. Jepperson (1991: 158) points out that ‘self-proclaimed rational-choice arguments often feature institutional constraints (in connection with opportunity costs) as central causes and institutional arguments often invoke adaptive responses to change in institutional conditions’. So rather than treating the perspectives as competing paradigms, ‘they might represent competing ways to invoke institutional effects, or reflect disagreements about proper micro-foundations or micro-effects, to mention just two alternatives’.

The literature shows that institutional theorists from across the disciplines make different assumptions about individual choice and what determines social action. In the sociological theory of the twentiethth century, Max Weber defined social action to emphasize the importance of meanings individuals attach to their own and others' behaviour. Weber distinguished between action and behaviour that was rational, non-rational, or irrational. More recently, the new economic institutionalism, such as the transaction cost economics (TCEs) of Williamson (1975) is grounded in rational individual choice, where the defining feature is the attempt to explain behaviour as a result of the instrumental choices of individual or collective actors in pursuit of their goals. New economic institutionalism is seen as being applicable for the study of regulation. This activity is described as one, ‘carried on

between and among actors seeking to gain greater efficiency (or arbitrate differences across systems to avoid friction) through cooperation…The search for solutions to common problems that cannot be resolved unilaterally leads to the adoption of new structures that reflect the assumptions of the 'new economic' institutionalism' (Reich 2000: 503). Game theorists similarly adopt an atomistic view that emphasizes how individual and collective actors engaged in behaviour to maximize outcomes, having assimilated all the relevant data and information to inform their decision making (Miller 2000). They seek to explain how cooperation and efficiency results from the instrumental behaviour of individuals (Axelrod 1981). Political scientists tend to pay more attention to the effects of institutions than to issues of institutional origins and change. The consequence has been a marked tendency to 'fall back on implicit or explicit functional accounts, in which the effects of institutions explain the presence of those institutions' (Pierson 2000: 475).

While neo-institutional analysts in economics and political science embrace rational choice theory, Simon's (1997) bounded rationality thesis has been highly influential by (p. 147) demonstrating that, despite the presumption that actors intend to be rational, they are bounded by the limitations of the information they possess. Neo-institutional theorists who embrace this and related models tend to view institutions primarily as regulative frameworks. In this context, individual or collective actors design institutions to resolve perceived or real problems of social dysfunction (e.g. financial misconduct) where regulation carries with it the reward of incentives or the threat of sanctions.

Neo-institutional theorists at the other end of the spectrum tend to emphasize the cultural-cognitive influences on behaviour as opposed to regulative and normative influences. Phenomenologists (Schütz 1967) and ethnomethodologists (Garfinkel 1967) reject rational actor accounts, even those which emphasize bounded rationality, as they believe action and behaviour are influenced by power relations and political structures where conflict is likely to produce unintended consequences. Phenomenologists and ethnomethodologists, like rational choice theorists, treat the individual as the unit of analysis, yet reject the notion of an explicit theory of individual behaviour when they examine institutional structure and performance outcomes. Sociological perspectives in neo-institutional theory, particularly those from phenomenology and ethnomethodology, perceive the limitation of embracing a narrow, functionalist rational choice framework as an oversimplification, where action and behaviour are examined as a means-ends relationship. As opposed to emphasizing the role of the individual, many neo-institutional theorists sympathetic to phenomenology and ethnomethodology adopt an organicist rather than an atomistic view of institutions, where 'the essential characteristics of any element are seen as outcomes of relations with other entities. Actors in interaction constitute social structures, which, in turn, constitute actors. The products of prior interactions—norms, rules, beliefs, resources—provide the situational elements that enter into individual decision making' (Scott 2001: 67).

Institutional Change

While much of the prior work by institutional theorists has viewed institutionalism as a source of stability and order (Zucker 1977; Strang and Meyer 1993), recent work has considered how institutions undergo change (Scott 2001; Greenwood and Hinings 2006). Over the past two decades, neo-institutionalists have increasingly adopted process-oriented methods to examine institutional change in a diverse range of fields. The complexity of political, regulatory, and technical changes at the societal, sectoral, field, and organizational levels have made institutional change and adaptation a central issue for institutionalists (Greenwood and Hinings 1996). The literature exhibits a diverse range of studies from across the social science disciplines using a number of institutionalist theories, with

most studies examining the processes of institutionalization, rather than deinstitutionalziation, or reinstitutionalization (Greenwood, Suddaby, and Hinings 1996).

Observing how institutional forces exert changes in markets, Haveman (1993) combined organizational ecology and neo-institutional theory to explain the process (p. 148) of diversification. She focused on how the structure of markets affects the rate of market entry. Using the density-dependency model of competition and legitimization to study organizational founding and failure, the study found legitimation of new markets for loan associations by the presence of successful thrifts is balanced by competitive or crowding effects. Neo-institutional arguments were found to be insufficient for explaining market entry. To counter this, the author recommended incorporating concepts of competition from organizational ecology to help explain why rates of market entry do not continue to rise as successful firm market density rises.

Davis, Diekmann, and Tinsley (1994) examined the decline and fall of the conglomerate firm in the 1980s, which they conceptualized as the deinstitutionalization of an organizational form. The conglomerate firm in the 1980s was composed of several unrelated businesses and was the dominant corporate form in the United States. A decade later, this form had become deinstitutionalized. Using comprehensive time-series data from the 1980s on a population of the largest industrial firms in the USA, the authors demonstrated that deinstitutionalization was the result of two processes. First, diversified firms were taken over at a high rate and their unwanted parts were typically sold off. Second, the less diversified firms that survived rejected the strategy of conglomerate growth. These authors suggested the aggregate result was that by 1990, the largest industrial firms in the USA had become much less diversified.

Another study by Sine and David (2003) examined environmental jolts and entrepreneurial opportunity in the US electric power industry over a forty-year period. These authors found that environmental jolts mobilize actors to reformulate institutions, resulting in increased entrepreneurial activity. Their study found that, when the institutional environment was stable, incumbent organizational forms and embedded logics present formidable obstacles to entrepreneurial activity. Environmental jolts, however, catalyse search processes and motivate the evaluation of current institutional logics. In the case of the electric power industry, environments of abundance and regulation resulted in homogeneity of organizational structures and strategies, and few entrepreneurial opportunities. Environments marked by scarcity and crisis, however, witnessed heavy scrutiny of existing institutional arrangements that eroded their taken-for-grantedness and symbolic value, resulting in opportunities for entrepreneurial action.

At the field level, many studies consider process-oriented change. Scott et al. (2000) examined the transformation in healthcare systems in the San Francisco Bay Area over a fifty-year period. As one of the most comprehensive studies on an organizational field, the authors identified competing institutional logics, each of which illustrated a specific time period. Recognizing that rapid change is not usually a characteristic attributed to healthcare, as hospitals display highly institutionalized structures and practices, the authors used a longitudinal case-based research method to examine large-scale government supported innovation. They found that, despite strong pressures for isomorphism, healthcare had become a more complex environment over the past two decades, as new entrants in the form of external service providers, and (p. 149) changing roles of healthcare consumers (including patients) all conspired to alter a previously stable institutional setting.

Another study examined the role of professional associations in the highly institutionalized organizational field of accounting. The authors presented their work as a case study of the profession to show how it underwent major change over a twenty-year period. The setting was the professional business services field in Alberta, Canada, that

plays a significant role in legitimating change. A six-stage model of institutional change was developed which commenced with social, technological, or regulatory jolts which precipitate deinstitutionalization, possibly leading to the next stage of reinstitutionalization. The authors extended the ideas of Strang and Mayer (1993) who suggested that for practices to become widely adopted, they have to become 'theorized', which is 'the development and specification of abstract categories and the elaboration of chains of cause and effect' (Greenwood, Suddaby, and Hinings 1996: 60). This study found that professional associations that act as regulatory agencies played a significant part in theorizing change by endorsing local innovations and shaping their diffusion.

Since the concept of deinstitutionalization is central to institutional change, institutionalists have called for more research that departs from the traditional focus on institutional persistence and stability, to understand the processes of evolutionary or revolutionary institutional change. Prior research suggests that government regulations and policies are most likely to deinstitutionalize organizational practices due to the threat of coercion that accompanies the legal enforcement of government mandates (DiMaggio and Powell 1983; Scott 2001). Government imposed health and financial regulations are two examples.

One of the most comprehensive frameworks on deinstitutionalization processes is by Oliver (1992). This study delineates three antecedents of deinstitutionalization that may erode or discontinue an institutionalized organizational activity or practice. First, political pressures show that institutionalized practices come under threat, erosion, or displacement when the utility or legitimacy of such practices is seriously called into question. Political conditions that delegitimate organizational practices may occur as a result of a performance crisis. Second, functional pressures are those that arise from perceived problems in performance levels associated with institutionalized practices. The potential for innovative pressures and performance problems to deinstitutionalize enduring organizational practices is related to technical or functional considerations that tend to compromise or raise doubts about the instrumental value of an institutionalized practice. Third, social pressures are associated with differentiation of groups and the existence of heterogeneous divergent or discordant beliefs and practices. Social pressures that precipitate deinstitutionalization explain many of the conditions under which organizations are neither pro-active agents of deinstitutionalization nor centrally intent on abandoning or rejecting particular institutional traditions.

Oliver (1992) gives three reasons why an examination of the consequences and causes of deinstitutionalization is important. First, deinstitutionalization explains a broad range of changes in organizations that an institutional perspective has traditionally neglected, including challenges to the institutional status quo, the abandonment of (p. 150) habits and customs, and the deterioration of organizational consensus around the value of institutionalized activity. Second, the causes of deinstitutionalization explain when institutional pressures are least likely to exert an enduring influence on organizations. Institutional theorists have tended to emphasize the cultural persistence of institutionalized organizational forms and process (Zucker 1977; Scott 1987; Zucker 1987). The potential for deinstitutionalization of organizational activities calls into question the stability and longevity of institutional values and practices, suggesting instead that under a variety of predictable conditions, institutionalized processes or practices will be vulnerable to challenge, reassessment, or rejection. Third, deinstitutionalization describes the conditions under which institutional rules and expectations fail in their predicted effects on organizations. Therefore, an examination of deinstitutionalizing pressures may help to clarify the boundary conditions of institutional explanations and, by so doing, shed light on the conditions or organizational contexts within which institutional explanations might be most relevant or powerful. Finally, institutional theory has been increasingly

criticized for its lack of attention to political processes as well as other non-institutional factors in shaping the responses of organizations to institutional pressures.

In a similar vein to criticisms by institutional theorists about rational-choice theories, the traditional focus on institutional creation, maintenance, and stability has underplayed important issues of human agency (DiMaggio 1988; Oliver 1991). Scott (2001) addressed this issue by developing a framework that incorporated top-down and bottom-up processes of institutional creation and diffusion. This multi-level framework incorporates societal institutions, fields, organizations, and actors. Change processes are more fruitfully examined by research designs that incorporate multiple levels of analysis since social action and structure occupies a duality that each serves to constrain and empower the other. Scott (2001: 203) asserts that, 'social structures themselves are nested, groups within organizations or networks of organizations, organizations within fields, fields within broader societal and trans-societal systems. Although every study can not attend to all levels, analysts should be aware of them and craft designs to include critical actors and structures engaged in maintaining and transforming institutions'.

One study that explicitly linked agency and institutional theory examined sales compensation policies of fifty-four retail speciality stores (Eisenhardt 1988). Using a range of variables, including the programmability of a job, span of control, uncertainty, type of merchandize, and the age of a store, the author found that both theoretical perspectives were necessary for explaining retail compensation policies. The contribution of agency theory was a more balanced view of performance contingency pay, which suggested that firms prefer pay based on behaviours and use pay based on outcomes only when behaviours are difficult to measure. The contribution of institutional theory was the recognition that founding conditions and simple industry traditions play an important role in determining compensation policies. The author recommended that a combination of agency and institutional theory variables for future research would strengthen both theoretical perspectives and increase understanding of phenomena.

(p. 151) The relationship between agency and institutions has been picked up by a more recent stream of institutional research, which seeks to tackle the so-called 'paradox of embedded agency' (DiMaggio and Powell 1991; Holm 1995; Seo and Creed 2002). Garud, Hardy, and Maguire (2007: 961) describe the paradox as follows: 'if actors are embedded in an institutional field and subject to regulative, normative and cognitive processes that structure their cognitions, define their interests and produce their identities, how are they able to envision new practices and then subsequently get others to adopt them?' Among attempts to solve the theoretical puzzle, most notable is the 'institutional entrepreneurship' perspective, drawing insights from institutional theory and entrepreneurship research. Institutional entrepreneurship is defined as the 'activities of actors who have an interest in particular institutional arrangements and who leverage resources to create new institutions or to transform existing ones' (Maguire, Hardy, and Lawrence 2004: 657). Institutional entrepreneurship enables us to concentrate on how interested actors conspire to influence their institutional contexts by formulating strategies to influence regulatory, market, or technical change (Lawrence and Suddaby 2006).

By reintroducing agency and interests into institutional analysis, research on institutional entrepreneurship has revealed mechanisms and strategies used by the institutional entrepreneurs to create or transform institutions. For example, in a study of Sun Microsystems' efforts to establish its Java technology as an industry standard, Garud, Jain, and Kumaraswamy (2002) find that Sun mobilized a broad set of partners including systems assemblers, software firms, and component manufacturers with an open systems strategy. As Sun's partners, their support of the Java platform does not prevent them from competing with one another on the Java products they produce. To legitimate Java's write-once, run-everywhere platform, Sun coined the slogan, 'The network is the computer.' This

slogan justified programmers' efforts to write software for the Internet, rendering obsolete Microsoft's desktop-centric view of computing.

The linking of multiple theoretical perspectives has further been explored between structuration processes and institutional theory. Both theories contend that institutions and actions are linked and that institutionalization is a dynamic and ongoing process (Barley and Tolbert 1997). These authors assert that institutionalists have pursued an empirical agenda that has largely ignored how institutions are created, altered and reproduced because process models of institutionalization are immature. Conversely, structuration theory remains a process theory of such abstraction that it has produced few empirical studies (see Chapter 5). Presenting a discussion of their similarities, the authors argue why a fusion of the two theories would enhance institutional theory by developing a model of institutionalization as a structuration process.

Limitations of Neo-institutionalism

Here, we offer a brief critique of neo-institutionalism by discussing concerns about its lack of theoretical clarity and the shortcomings of variance and process accounts. Often (p. 152) in these accounts, researchers either oversimplify institutional constructs or fail to explain the processes of institutional creation and change. Notwithstanding neo-institutional concerns about the dominance of strategic choice (Goodrick and Salancik 1996) and rational-actor models (DiMaggio and Powell 1991), institutionalism invites many criticisms about its theoretical and empirical shortcomings. These criticisms relate to both variance and process approaches to institutionalization.

While new institutionalism has been influential in identifying the limitations of rationalization, it is criticized for not adequately explaining how 'the pool of social ideas, instrumental orientations and schemes (i.e. the rationalized environment) is translated into the specific administrative patterns encountered in particular organizations or populations of organizations' (Hasselbladh and Kallinikos 2000: 699). Neo-institutionalism underplays the 'social construction of rationalization', that it conceptualizes as structural isomorphism (Hasselbladh and Kallinikos 2000: 700). The end state of institutionalization is not diffusion of rationalized beliefs and practices. Instead, 'institutionalization is sustained and given meaning and direction through its capacity to constitute distinctive forms of actor-hood'. This is contingent on cultural-cognitive factors where 'ideas are elaborated, and rendered solid and durable' (Hasselbladh and Kallinikos 2000: 700).

Others criticize neo-institutionalism for treating institutions as independent variables and the primary unit of analysis. Many institutionalists examine the regulative, normative, and cultural-cognitive factors that influence institutions, but it is also imperative to include the 'properties of the supra-individual'. While institutionalists recognize that institutional outcomes are not reducible to 'aggregations or direct consequences of individuals' attributes or motives' (DiMaggio and Powell 1991: 8), their lack of attention to human agency has often produced an 'over-socialised' account of organizational behaviour (DiMaggio 1988).

These criticisms suggest that theoretical concepts used by institutionalists are too idealistic and broad to inform empirical enquiry. But, whereas researchers using variance models attempt to resolve this problem by simplifying institutional concepts or constructs to obtain rigour and clarity in their research design, others using a process-oriented approach also simplify the complexities of institutionalization using multi-stage models. A common problem identified in process models is a lack of empirical verification of how one stage in the institutionalization

process gives way to another. Also, theorists need to explain why some processes lead to institutionalization while others do not. This is particularly relevant in the area of innovation studies.

Since variance and process studies may fail to adequately explain the effects or processes of institutionalization, calls are made to broaden the institutionalist perspective still further (Greenwood et al. 2007). However, extending research designs through developing more complex multi-level and multi-stage models presents even greater challenges, both theoretically and empirically.

Given that many institutional accounts focus on the outcome of social construction (e.g. by observing a particular institution such as education), researchers are encouraged to abandon the 'bird's eye view of the field, and come closer to the social and (p. 153) cognitive means and procedures underlying rationalized beliefs and schemes of action' (Hasselbladh and Kallinikos 2000: 700). Some argue that institutional accounts have become associated with notions that organizations are not concerned with task performance, and are instead only concerned with issues of legitimacy. This form of 'institutionalization of the institutional perspective' is dismissed by Powell (1991) who argues that studies often highlight 'specific findings at the expense of the basic argument that institutional pressures stem from more general societal wide processes of rationalization' (p. 190). An important insight is that, 'if organizations can manipulate the symbols they present to the external environment, then they must also be adept at producing and controlling the symbolic elements as well' (ibid.). Much of this misunderstanding is caused by the lack of clarity in some of the original statements by neo-institutionalists.

Institutional Theory and Information Systems Research

Our discussion of the broad literature of neo-institutionalism provides a critical foundation for understanding and appreciating the diversity of scholarly contributions from a range of disciplines and some of the limitations of this complex theory. Our primary analytic focus is sociological perspectives on neo-institutionalism from the sub-field of organization studies (OS). Recognizing the complementary nature of OS and IS, scholars have called for a closer intellectual relationship between the two fields (Orlikowski and Barley 2001). King et al. (1994) suggest that new institutionalism provides a strong base for understanding the role of institutions in IT innovation. These ideas were embraced by other scholars who called for more 'research that embraces the importance of simultaneously understanding the role of human agency as embedded in institutional contexts as well as the constraints and affordances of technologies as material systems' (Orlikowski and Barley 2001: 158). Recently, a special issue of the *Journal of Applied Behavioral Science* was published to encourage more active engagement between OS and IS, particularly as the former is explicitly interested in technology-enabled change, while the latter examines the growing sophistication and diversity of specific technical artefacts, and how they impact organizations and the wider society (Barrett, Grant, and Wailes 2006).

In parallel, others call for closer synergies between IS and other theoretical perspectives from OS, including structuration (Barley 1986; Orlikowski and Robey 1991; Orlikowski 1992; DeSanctis and Poole 1994; Barley and Tolbert 1997), agency theory (Orlikowski 1996; Weick 1998; Boudreau and Robey 2005), anthropological approaches (Wareham 2002), and discourse analysis (Doolin 2003). Extending the use of research methods is further recommended to include interpretive approaches (Walsham 1993) and more (p. 154) specifically, phenomenology (Mingers 2001) and ethnomethodology (Ross and Chiasson 2005).

We acknowledge that institutional theory in IS research is a relatively new phenomenon and is gaining momentum. The IS literature reveals an eclectic approach by researchers to using institutionalist perspectives. Yet most contributions treat neo-institutionalism as a single theory and play down its multi-disciplinary and conceptually ambiguous nature. In this regard, institutional theory is deployed as a 'lens' to examine the relationships between constructs delineated from, for example, organizational fields, isomorphism and institutional logics, using either variance or process approaches.

In the IS literature, researchers tend to study institution as a process (institutionalization) and an entity (with institutional effects). Theoretical and empirical preferences of IS researchers tend to determine the choice of environmental and organizational variables in the research design. For example, we found fewer studies on IT as a process of institutionalization. The majority of studies looked at the institutional effects on IT, often using institutional concepts piecemeal (Mignerat and Rivard 2005). Many studies on institutional effects on IT used the three mechanisms of institutional isomorphism: coercive, mimetic, and normative developed by DiMaggio and Powell (1983).

The common unit of analysis was the level of the organization rather than the wider environmental (societal, sectoral, field) or individual (agency) levels. Paradoxically, while many IS researchers use organization as the focal point in their research, many variance and process studies examine the cause/effect relationships between IT-related constructs (e.g. adoption intention, department size, assimilation) without relating them to the higher environmental and interorganizational levels. This is problematic both theoretically and empirically since institutional theory emphasizes the criticality of using multi-level analysis in the research design.

We further identify seven broad categories where IS researchers have used institutionalist perspectives. They include: technology and institutions, innovation, industrial sectors, adoption and diffusion, strategy and outsourcing, applications development and implementation, and knowledge-based work. We recognize that some of these classifications reflect current fashion in the IS field.

King et al. (1994) are among the first to employ the new institutional approach in IS research. They note three characteristics of neo-institutionalism that focus attention to institutional factors for understanding innovation. First, they cautioned against treating institutions and technology as two separate categories of environmental influence. Thus, the 'technical/institutional divide classified as 'technical' for-profit organizations operating in a marketplace where production efficiency was the key goal, and as 'institutional' non-profit and public organizations operating in a context of law and procedure, where legitimacy of process is as important as the goal' (p. 146). They suggest the new institutional approach takes both efficiency and legitimacy as significant factors in all organizations. The second characteristic of neo-institutionalism, according to King et al. (1994), is the shift of the subject of institutional analysis from organizations with legal authority or geographic proximity to organizations competing or trading with each other. Third, the authors point out that neo- (p. 155) institutionalism does not assume institutions as monolithic and inflexible. To the contrary, institutions can and do change.

We recognize that identifying and delineating the boundaries of institutionalist perspectives within IS research from other disciplines poses challenges. One observation is that IS studies adopting institutional theory span many academic journals. The aggregate body of work further incorporates multi-levels of analysis, with contributions examining societal, market and sectoral level institutional forces (Cousins and Robey 2005; Hu and Quan 2006; Salmeron and Bueno 2006) and social and cultural-cognitive forces (Kaye and Little 1996; Damsgaard and Scheepers 1999; Nicolaou 1999). Orlikowski and Barley (2001) recommended IS researchers adopt institutional theory to investigate how institutions influence the design, use, and consequences of technologies, either within or

across organizations. Instead of focusing on lower level analysis of development, use and management of IS, they suggested researchers study the regulative processes, normative systems, and cultural frameworks that shape the design and use of IS.

Regulatory and normative approaches have been used by King et al. (1994) to integrate institutional theory with economic history to theoretically explain the role of governmental institutions in IT innovation. They articulated dimensions related to institutional interventions through influences and regulations that augment supply-push and demand-pull for IT innovation. Building on this work, Montealegre (1999) examined policy-related institutional actions in four developing countries to explain the Internet adoption to provide technological services at the national level. Similarly, Ang and Cummings (1997) examined factors that moderate the effects of institutional influences on IS outsourcing decisions in the banking industry focusing on peer and federal regulators.

Cultural-cognitive approaches place greater emphasis on individual agency. Swanson and Ramiller (2004) adopted a cognitive perspective to introduce the concept of mindful innovation with IT. They argued that a firm is ‘mindful in innovating with IT when it attends to an innovation with reasoning grounded in its own organizational facts and specifics’ (p. 559). They contrasted this with mindless innovation where a firm's actions ‘betray a lack of attention to organizational specifics’ (p. 563).

Variance models are developed by several IS researchers who use survey-based methods to test theoretical constructs. Teo, Wei, and Benbasat (2003) used institutional theory as a lens to understand the factors that enable the adoption of interorganizational systems. Their research model tested how mimetic, coercive and normative pressures existing in an institutionalized environment, could influence organizational predisposition toward an information technology-based interorganizational linkage. Findings suggested that all three institutional pressures had a significant influence on organizational intention to adopt financial electronic data interchange. The authors claim their findings indicate that organizations are embedded in institutional networks and call for more research into the institutional pressures on the adoption of IT innovations. Employing similar methods, Liang et al. (2007) found significant evidence (p. 156) of institutional effects of coercive, mimetic, and normative pressures on the assimilation of enterprise systems in organizations.

Another study using a variance approach considers the institutionalization of IT budgeting in the financial services sector. Hu and Quan (2006) examined the influences of institutional pressures from a firm's external environment on the corporate IT budgeting processes. Using firm-level IT and financial data of publicly traded companies in the financial sector, the authors found one of the most significant sources of influence on an firm's average IT budget was the IT spending level of the perceived industry leaders. They concluded that IT budgeting processes have been at least partially institutionalized.

Process models are increasingly used by IS researchers to examine institutional change and deinstitutionalization. Swanson and Ramiller (1997) developed a theoretical model to understand the cultural-cognitive institutional processes that drive the adoption and diffusion of IT innovations. The authors introduce the notion of ‘organizing vision’, which serves three important functions in the creation and promulgation of IT innovations: interpretation of the innovations, legitimation of the need for innovations, and mobilization of material resources to support the innovations. The production and dissemination of organizing visions is an integral part of the institutionalization process of IT innovations.

Currie (2004) used the organizing vision model to interpret data from a five-year study on the adoption and diffusion of application service provider (ASP) technology. Using a process-oriented analysis, she observed that

over time, the initial hype surrounding ASP was replaced by scepticism and distrust, as powerful institutional interests in the form of technology firms, industry analysts, and IT consultancies were ultimately unsuccessful in their attempts to disseminate ASP throughout the wider business and not-for-profit IS user communities. This study builds on ideas where rhetoric and reality in large-scale innovation and change programmes can be conceptualized as management fashions (Abrahamson 1996). Innovations that are widely diffused and taken-for-granted within society are described as institutionalized. Conversely, those that pose a disruptive threat or become distrusted, fail to gain traction and become abandoned. To explain such success or failure, Wang and Swanson (2007) employed institutional entrepreneurship to study how interested organizational actors (institutional entrepreneurs) struggled to institutionalize professional services automation (PSA). They found that, for institutional entrepreneurs to launch an IT innovation toward institutionalization, it is crucial to develop a relative coherent organization vision for the innovation and mobilize a driver community to create and maintain the industrial infrastructure for the innovation.

In summary, our review of institutional theory in IS research enables us to offer the following insights. First, the dominant view among IS scholars is the recognition that institutions reside in the environment and they shape the development and use of IT. Exactly how this occurs is not well articulated, since most of the literature focuses upon the institutional effects on IT, rather than how such institutions come into being (e.g. the process of institutionalization) or disappear over time (deinstitutionalization). (p. 157) Second, the IT-as-institution perspective is dominated by multivariate empirical studies that examine regulative, normative, and cultural-cognitive effects on IT adoption and diffusion, yet restrict the unit of analysis to the level of the organization. This approach rarely considers the larger dynamic where institutionalization processes or effects may vary among organizations within and across fields, sectors, and markets (Thatcher, Brower, and Mason 2006). Third, many studies adopt an atomistic or reductionist approach where institutional concepts are simplified for the purposes of empirical clarity and precision. While this is pursued for the purposes of methodological rigour, we suggest that some concepts are not amenable to simple reductionism. For example, the concept of isomorphism is widely used in the OS literature, albeit with varying definitions (Greenwood et al. 2007). Imported by IS academics, we suggest that caution needs to be applied in using isomorphism to measure cause and effect relationships in either static or stage models. Fourth, IS researchers rarely discuss the theoretical and empirical antecedents of institutional theory which resides in reference disciplines including sociology, economics, political science, and anthropology. Many studies present institutional theory as new to the IS field. While this is not problematic in itself, the failure to convey the wider intellectual tradition of the theory may lead to misinterpretation within the IS community and confusion about the relationship between institutionalism and other theoretical perspectives.

An Institutional Agenda for IS Research

In proposing a research agenda for IS which embraces institutionalism, we reiterate prior calls from King et al. (1994) who recognized that institutional factors are ‘ubiquitous and essential components’ (p. 141) for understanding and explaining IT innovations, and Orlikowski and Barley's (2001) contention that institutionalism offers IT researchers ‘a vantage point for conceptualizing the digital economy as an emergent, evolving, embedded, fragmented, and provisional social production that is shaped as much by cultural and structural forces as by technical and economic ones’ (p. 154).

While institutionalism has gained momentum in the OS field, IS has seen the publication of a steady stream of research papers over the past decade, most of which deploy institutional concepts as a lens to interpret data rather than offering new theoretic insights. An explanation for the reluctance to adopt institutionalism as a theoretical perspective for empirical investigation, we argue, may derive from the shortcomings we have identified above. Also, the dominance in positivist research methodology (e.g. surveys and experiments) compared with interpretivist methods (case studies and ethnographies) may preclude some scholars from deploying institutionalist concepts that are ill-defined and amorphous. Another reason suggests that IT research is predominantly concerned with the development, use, and management (p. 158) of information systems where researchers focus on lower levels of analysis rather than how 'regulative processes, normative systems, and cultural frameworks shape the design and use of technical systems' (Orlikowski and Barley 2001: 153). This is less common where researchers observe fewer demarcation boundaries between IS and OS, for example.

The current trend in the IS field to isolate the IT artefact within an organizational setting reflects a wider trend in social science from the 1970s, which has seen a shift from asking 'big questions' about society and organizations in favour of producing 'narrowly orientated research in the idiom of normal science'. This is witnessed in contingency theoretic formulations and much of the mainstream OS, where 'organizations have become codified and packaged into standard research strategies rational-functionalism and economic determinism' (Lounsbury and Ventresca 2003: 462). While the new institutionalism is explicitly anti-reductionist and rejects the causal primacy of efficiency or narrow self interest, the use of institutional theory to inform research enquiry needs to take into account how institutions influence IT within and across organizations (Orlikowski and Barley 2001), and how IT itself may be an institution. So given the pervasiveness and importance of IT and its relevance in contemporary organizational change, it is noteworthy that OS scholars interested in change have not addressed IT in a more explicit and systematic fashion (Barrett, Grant, and Wailes 2006) and equally that IS researchers underplay the importance of politically and socially constructed realities in shaping the processes and effects of IT.

Calls to expand institutionalist research come from within and beyond the IS community. However, a broadened institutional approach has some limitations (Powell 1991), not least because multiple definitions of institution rarely offer convincing accounts of the processes and effects of institutionalization (Greenwood et al. 2007). Researchers therefore need to avoid becoming 'thrown into a field of research that has almost no limits, and also few directions about what is more or less important or relevant…(where) almost all aspects of social life become a possible research object' (Hasselbladh and Kallinikos 2000: 702).

Recognizing the potential advantages and disadvantages in using institutionalism as a mainstream theoretical perspective in IS, we identify five challenges for IS researchers concerning theory development and empirical investigation. First, institutionalism embodies powerful and complex concepts and ideas that provide a firm foundation for designing variance and process models. Researchers need to fully engage with the neo-institutional literature, not merely from OS, but also from sociology, economics, and political science to gain a wide appreciation of the intellectual antecedents of this complex theoretical approach. Institutional concepts are not axiomatic and need to be carefully defined in any research design. Since many IS researchers may not possess a wide knowledge of institutionalism, they will not extend the theory by treating concepts as axiomatic. IS research needs to *discover the scope conditions under which institutional explanations may or may not hold in the numerous complex and dynamic contexts of IT development and use*.

(p. 159) Second, earlier neo-institutionalism accounts have focused on stability and persistence, and more recently on institutional change and deinstitutionalization (Greenwood and Hinings 2006). IS researchers need to *develop*

robust research designs which address issues of how and why institutions emerge, transform, and vanish. Detailed ethnographic studies that reveal how institutional practices come to be legitimated coupled with large-scale, longitudinal studies that explore the staying power of institutional arrangements will greatly contribute to the body of research on institutionalization (Powell 1991). Archival data can also be collected, analysed, and measured to study paths of institutionalization (Colyvas and Powell 2006) and monitor institutional stability and change. Third, IS researchers should continue to focus on a *range of core sectors of the economy*, such as government, health, manufacturing, and finance since many studies have traditionally investigated institutionalism in the public, not-for-profit, or highly regulated sectors (Powell 1991). Although studies have emerged on specific sectors, we suggest that differentiating between not-for-profit and for-profit sectors is becoming increasingly outdated. We suggest that macro-institutional analysis shows that reality is infused with shared values and interests between public (state) and private (capital) sectors, particularly in the light of increased IT outsourcing where external firms engage with highly institutionalized organizational settings, an example being the market initiatives in healthcare (Scott et al. 2000).

Fourth, institutionalism needs to *embrace a multi-level analysis* to avoid criticisms that it pays too much attention to institutional forces emanating from the societal and interorganizational levels and not enough attention to the role of individuals in shaping their institutional environment. Research needs to embrace 'the importance of simultaneously understanding the role of human agency as embedded in institutional contexts as well as the constraints and affordances of technologies as material systems' (Orlikowski and Barley 2001: 158). Recent work on institutional entrepreneurship addresses some of these limitations and demonstrates how individuals and groups serve to both stabilize and change habitualized behaviours (Lawrence and Suddaby 2006). Research could examine the role of 'technical champions' as a type of institutional entrepreneur, as many IS accounts pay scant attention to the institution-building activities that shape individual and group behaviour within and across networks, organizations, and fields.

Fifth, the shortcomings of institutionalism may be overcome by a *multi-theory approach* to empirical investigation. Combining institutional theory with structuration theory, agency theory, discourse analysis, and critical management perspectives, for example, may provide a powerful foundation from which new and exciting insights may arise. For example, Barley and Tolbert (1997) proposed that a fusion of institutional theory and structuration theory makes it possible to theorize institutionalization as a structuration process. While organization theorists routinely use a multi-theory approach, we caution against a tendency in the IS literature to adopt a 'pick n mix' approach to theory, as key concepts and terms can become lost in translation.

Our review of institutional research in IS has also allowed us to identify two broad questions specific to IT research. First, *what unique challenges and opportunities do* (p. 160) *IT innovations face in an institutional environment*? The creation, diffusion, and maintenance of institutions are primarily based on information that social actors collect, process, and transfer (Zucker 1977). New information technologies, by definition, bring new information, relationships, or processes in information management, inevitably disrupting existing institutions—taken-for-granted incentive systems based on existing information, relationships, and processes. For this reason, *IT innovations naturally entail institutional changes* and thus *understanding IT phenomena requires an institutional theory of IT*. To develop an institutional theory of IT, researchers must go beyond the organizational level analysis of institutional effects to investigate multiple levels and sources of institutional change. We recognize this is a serious challenge since research enquiry that isolates the management of IT in an organizational setting is less complex and contentious than studies that encapsulate a multi-level and multi-variate analysis linking policy, process, practice, and people. Research output that conveys neutral and apolitical accounts of values and interests

has greater 'facticity', since 'participants are able to tell researchers much more succinctly how they interact with technological artifacts', rather than research on the management of information which takes into account 'the social constructions that constitute information' (Thatcher, Brower, and Mason 2006: 449). But while studying IT as an artefact is less controversial, it is also 'less important in shaping behaviour than are structuration activities at higher levels of analysis' (ibid. 449). Extending research enquiry beyond the organization is therefore likely to generate richer and more analytical accounts of the interplay between regulatory, normative, and cultural cognitive influences on IT development, implementation, and management.

The second broad question we raise is: *how do institutional changes synchronize with technological changes*? Institutionalists characteristically portray the institutional/technical dichotomy and argue both the institutional and technical priorities 'impinge on' a social actor at the same time (Zucker 1987). DiMaggio and Powell (1991) recognized that environmental changes (including technological change) frequently outpace institutional changes and social actors' adaptation and that suboptimal institutions can persist for an extended period of time and rarely reflect current political, economic, and technological forces. On the other hand, Brown and Duguid (2000: 84) warned against the argument that 'society falls behind while technology streaks ahead.' As IT advances at 'exponential' speed, it is worth asking whether and how institutions and technology can remain or become in synch. While we caution against using a false dichotomy between institution and IT, we recognize that IT-enabled change may disrupt existing working practices leading to deinstitutionalization. In this regard, our *IT-as-institution* perspective is therefore useful in that it recognizes that the adoption and assimilation of new IT *in use* is essentially the institutionalization process, which culminates with the new IT as a new or transformed institution.

Conclusion

This chapter demonstrates that institutional theory is increasingly used by IS researchers, although the relationship between the core theoretic concepts with other management fields is not well articulated in the IS literature. Reviewing the seminal papers on neo-institutional theory reveals that interorganizational and field level units of analysis are used in disciplines such as sociology and economics, for example, but the majority of IS studies deploy the organization (business unit, site, department) to analyse institutional concepts. Institutionalization, however, is both a multi-level process and an outcome. The separation of institution and technology in some areas of the literature suggests a false dichotomy, particularly as IT may also be conceptualized as an institution. We therefore posit the concept of IT-as-institution to convey the complex relationship between IT with higher-level institutional forces and influences. Indeed, studying IT in isolation of macro-environmental and organizational factors and, more importantly, ignoring the complex interrelationships between them, is unlikely to produce theoretic insights of any real significance or impact. This has serious implications for the future of IS as a critical discipline in business and information schools.

IS researchers need to study how and why environmental and organizational processes and effects influence IT adoption and diffusion, for example; and how core ideas, such as legitimacy, taken-for-grantedness, isomorphism, and institutional logics can explicate pathways to institutionalization and deinstitutionalization. This is important since institutionalization is driven by self-reinforcing feedback dynamics that serve to create stability and persistence, yet may also be receptive to exogenous and endogenous 'jolts' acting as a catalyst for institutional change. We recognize that using a multi-level analysis to study IS practice using an institutional perspective is complex particularly as institutions may be viewed as the 'ongoing product of a series of integrated and semi-

autonomous social fields, each of which has a distinct history, logic and structure' (Lawrence and Suddaby 2006: 248–9).

In conclusion, we urge IS researchers to extend their theoretical repertoire, not by attempting to generate 'new theories for IS', but to recognize that existing theories, such as institutionalism, have rich and diverse intellectual antecedents which are not amenable to simple reductionism. By broadening the level of analysis to include interorganizations and fields, IS researchers will be able to recognize that IT adoption and diffusion at the organizational level is inextricably linked to macro-environmental factors, such as government policy, corporate strategy, market dynamics, and the like. To understand IS outcomes in healthcare, for example, is not reducible to simple survey or case study analysis on individual priorities and preferences at single sites, since deeply engrained institutional behaviours play a key role in determining what is either possible or not possible in practical terms. In sum, this chapter has covered a wide range of neo-institutional literature to give a flavour of the depth and breadth of this complex theory. We hope that IS researchers will seek out this literature to enrich our knowledge of how institutionalism can encourage deeper insights into the multi-faceted phenomenon of information management and technology. (p. 162) (p. 163) (p. 164) (p. 165) (p. 166) (p. 167)

Appendix A Selected Studies in Institutional Research from Reference Disciplines, Especially Organizational Sociology

Category	Theoretical Perspective	Context	Reference
Institutional Theory	Institutions Institutionalism Institutionalization	• New institutionalism: organizational factors in political life • Formal structure as myth and ceremony • Role of institutionalization in cultural persistence • The iron cage revisited • Organizations as institutions • Organizational environments: ritual and rationality • Institutional theories of organizations • Adolescence of Institutional Theory • Institutional patterns and organizations • Rediscovering institutions • Three pillars of institutions • Virtues of the old	March and Olsen 1976 Meyer and Rowan 1977 Zucker 1977 DiMaggio and Powell 1983 Zucker 1983 Meyer, Rowan, and Scott 1983 Zucker 1987 Scott 1987 Zucker 1988a March and Olsen 1989 Scott 1995 (2nd edn. 2001) Stinchcombe 1997 Powell and DiMaggio

		institutionalism • New institutionalism in organizational analysis	1991
Construction, Maintenance, and Diffusion	Variance and process models	• Variance and process theories of institutionalization • Component processes of institutionalization	Mohr 1982 Tolbert and Zucker 1996
	Creation, maintenance, and stability	• Culturalcognitive aspects of institutionalism • Conditions for new institutional arrangements • Narrative mode of knowing • Social construction of organizational knowledge • Temporal dynamics of institutionalization • Multitheory approach to the cognitive under-pinnings of institutional persistence and change • Institutional entrepreneurship in mature fields • Discourse and institutions	DiMaggio 1991b. Suchman 1995 Czarniawska 1997 Mizruchi and Fein 1999 Lawrence, Winn, and Jennings 2001 George, Sitkin, and Barden 2006 Greenwood and Suddaby 2006 Philips, Lawrence, and Hardy 2004
	Diffusion	• Diffusion in organizations and social movements • Institutional conditions for diffusion • Adoption of institutionally contested organizational practices	Strang and Soule 1998 Strang and Meyer 1993 Sanders and Tuschke 2007
Organizational Fields and Institutional Logics	Organization Fields	• Structural analysis of organizational fields • The institutional context of industry creation • Institutional entrepreneurship in emerging fields	DiMaggio 1986 Aldrich and Fiol 1994 Fligstein 2002 Scott 1994

Category	**Theoretical Perspective**	**Context**	**Reference**

		in emerging fields • Conceptualizing organizational fields	
	Industry creation, markets, sociocultural and political explanations	• Politicalcultural approach to market institutions • Institutional and task environment relationships in the Canadian Construction Industry • Institutional Change in the Healthcare System • Institutionalist account of European Integration • Differentiation of institutional space: organiza-tional forms in the New York welfare sector	Fligstein 1996 Oliver 1997 Scott et al. 2000 Maguire, Hardy, and Lawrence 2004 Mohr and GuerraPearson 2006
Category	**Theoretical Perspective**	**Context**	**Reference**
	Institutional Logics	• Cultural framing and institutional integration • Symbols, practices, and institutional contradictions • Historical contingency of power in higher educational publishing in the USA • Conflict and conformity in institutional logics in the craft industry • Logics and change in transboundary spaces • Competing logics in Healthcare in Alberta, Canada • Dominant logics in Healthcare in the UK, National Health Service	Hirsch 1986 Friedland and Alford 1991 Thornton and Ocasio 1999 Thornton 2002 Blatter 2003 Reay and Hinings 2005 Currie and Guah 2007
Organizational Structure, Performance, and Choice	Formal and informal structures, governance, and strategic processes	• Social structure and organizations • Institutional sources of change in the formal structure of organizations • Governance structures in large	Stinchcombe 1965 Tolbert and Zucker 1983 Tolbert and Stern 1989

		• Governance structures in large law firms • Politics of bureaucratic structures • Strategic responses to institutional processes	Moe 1990 Oliver 1992
	Decoupling and Loose coupling	• Educational organizations as loosely coupled systems • Formal and informal organizations • Institutional and technical sources of organization structure • Power and decoupling in the healthcare system • Substance and symbolism in CEOs' long-term incentive plans	Weick 1976 March and Olsen 1976 Meyer, Scott, and Deal 1981 Covaleski, Dirsmith, and Michelman 1993 Westphal and Zajac 1994
Category	**Theoretical Perspective**	**Context**	**Reference**
	Isomorphism	• Resource dependence and institutional environments • Mimetic isomporphism and entry to new markets • Coercive, mimetic, and normative isomorphism • Symbolic isomorphism and organizational names	Tolbert 1985 Haveman 1983 Mizruchi and Fein 1999 Gynn and Abzug 2002
	Legitimacy	• Organizational legitimacy: social values and organizational behaviour • Centralization and legitimacy problems in local government • Symbols and Organizations • Strategic and institutional approaches to managing legitimacy • Causes and consequences of illegitimate organizational change	Dowling and Pfeffer 1975 Meyer and Scott 1983 Scott 1990 Suchman 1995b Kraatz and Zajac 1996 Ruef and Scott 1998 Suddaby and Greenwood 2005

		• Multidimensional model in organizational legitimacy • Rhetorical strategies of legitimacy • Social processes of organizational sense making	2005 Maitless 2005
	Strategic Choice and Rational Actor	• Organization structure, environment, and performance • Organizational discretion in responding to institutional practices	Child 1972 Goodrick and Salancick 1996
Institutional Change	Institutional Change	• Understanding strategic change: the contribution of archetypes • Interaction of organizational context and organizational action • Organizational responses to discontinuous change • Politics and institutionalism: explaining durability and change • Institutional evolution and change • Institutional transformation and status mobility • Role of professional associations in the transformation of institutionalized fields • Institutional management and organizational change • Environmental jolts and entrepreneurial opportunity in the US electric power industry • Institutional change in Toque Ville Nouvelle cuisine • Institutional theory and institutional change	Greenwood and Hinings 1993 Greenwood and Hinings 1996 Meyer, Brooks, and Goes 1990 Clemens and Cook 1999 Hoffman 1999 Lounsbury 2002 Greenwood, Suddaby, and Hinings 2002 DeHolan and Philips 2002 Sine and David 2003 Rao, Monin, and Durand 2003 Dacin, Goldstein, and Scott 2002 Seo and Creed 2002 Sherer and Lee 2002

Category	**Theoretical Perspective**	**Context**	**Reference**

		• Institutional contradictions, praxis, and institutional change • Institutional change in large law firms	
	Deinstitutionalization	• Decline and fall of the conglomerate firm in the 1980s • Interest and agency in institutional theory • Antecedents of Deinstitutionalization • Determinants of organizational compliance with institutional pressures	Davis, Diekmann, and Tinsley 1994 DiMaggio 1988 Oliver 1992 Tolbert and Sine 1999
	Agency	• Agency and institutional theory perspectives to explore interstate compensation policies in retail • Interest and agency in institutional theory	Eisenhardt 1988 DiMaggio 1988
Category	**Theoretical Perspective**	**Context**	**Reference**
	Rational Choice	• Theory of institutional change and economic history of the Western World • New economics of organization • How institutions think • Institutionalization of rational organization	North 1983 Moe 1984 Douglas 1986 Powell 1985
	Structuration Processes	• Adaptive structuration theory • Links between action and institution • Action, structure, and contradiction in social theory • Bureaucratization without centralization	DeSanctis and Poole 1994 Barley and Tolbert 1997 Giddens 1979 Meyer et al. 1988

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