

Applications of Stakeholder Theory in Information Systems and Technology

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Abstract. Stakeholder theory has its origins in management literature. Preston (1999) traces the notion of stakeholders back to the great depression in the United States (1929-1941), when the General Electric company defined four major stakeholder groups - shareholders, employees, customers, and the general public. Stakeholder management has become an important tool to transfer ethics to management practice and strategy. Few management topics have generated more debate in recent decades than the underlying notion, the model and the theories surrounding stakeholders (Donaldson and Preston, 1995; Gibson, 2000; Wolfe and Putler, 2002; Friedman and Miles, 2006). The visual power of the stakeholder model and its high simplicity are seen as contributors to the success of the stakeholder concept (Fassin, 2008). An increasing interrelation is observed between the concepts of stakeholder theory, corporate responsibility, and business ethics (Valor, 2005; Garriga et al., 2004). The stakeholder approach in the organization integrates stakeholder relationships within a company's resource base, industry setting, and socio-political arena into a single analytical framework (Susniene & Sargunas, 2009).

Mumford (1979) is one of the early researchers in supporting the involvement of end-users as a component of effective information systems development and implementation, using essentially the stakeholder concept in this domain. It has been proved that end-users and managers are very important towards successful system implementation. As more interorganizational information systems are developed which usually involve strategic decisions, a yet wider range of stakeholders needs to be involved (Pouloudi, 1999). In these systems the attention may switch from end-users and focus on those parties that are external to the organization, but who can also be associated in decision making at a managerial or strategic level (Pouloudi & Whitely, 1997). One of the most thorough investigations of the stakeholder concept in information systems research that relates information systems stakeholders with implementation failure was made as an early work by Lyytinen and Hirschheim (1987, 1988). They argue that failure is conditional on the capability of information system to meet the expectations of different stakeholders - i.e. to say an information system may be considered successful by some stakeholder but a failure by others. The concept of stakeholder represents a progression from developer – and user – centered problems to organization-wide and inter organizational information system problems. This is a sign of maturity of information systems research to show how holistic representation of the parties involved in the more complex systems currently developed (Pouloudi, 1999). Stakeholder theory proposes an ethical use of stakeholder concept in Information systems as ethical considerations and professional conduct is a significant issue in information system.

The stakeholder theory is extensively used in management in investigating organizational ambiance, strategic management, ethical concerns, business planning process, e-government, project management, environment management, etc. Recently stakeholders are also seen as means to more successful information and communication technologies and information system development and implementation issues. The paper presents stakeholder theory, its origin and applications in Information Systems (IS) field in the literature. The main objective of this research is to build up the knowledge body of stakeholder applications in information systems and technology areas.

Keywords: stakeholder theory, stakeholder model, stakeholder, information systems, management.

Introduction

Nowadays, stakeholder management has become an important tool to transfer ethics to management practice and strategy. Few management topics have generated more debate in recent decades than this underlying notion, the model and the theories surrounding stakeholders (Donaldson & Preston, 1995; Gibson, 2000; Wolfe & Putler, 2002; Friedman & Miles, 2006). The visual power of the stakeholder model and its simplicity are regarded as driving forces for the success of the stakeholder concept (Fassin, 2008). There is considerable interconnectedness between the concepts of stakeholder theory, corporate

responsibility, and business ethics (Valor, 2005; Garriga et al., 2004). The stakeholder approach in an organization integrates stakeholder relationships within the company's resource base, industry setting, and socio-political arena into a single analytical framework (Susniene & Sargunas, 2009).

The term 'stakeholder' has a relatively recent history (Pouloudi, 1999) and has become an increasingly popular term in management vocabulary, "almost a cliché" (Willets, 1997). Freeman (1984) traces it back to 1963, when it was introduced to define "those groups without whose support the organization would cease to exist". Freeman argues with references to stakeholders in the areas of corporate planning, systems theory, corporate social

responsibility, organization theory (Pouloudi, 1999), and later on integrated with strategic management and approaches to help managers in improving their organization's strategic position (Eden & van der Heijden, 1993; Flood & Jackson 1991; Gilbert *et al.*, 1988). Different researchers have defined the concept of stakeholder differently with their own perspectives depending on different views of their roles. For instance, stakeholders have been defined as differently as "groups of constituents who have a legitimate claim on the firm" (Hill & Jones, 1992), "participants in corporate affairs" (Ackoff, 1974), those that "will be directly impacted by the decisions" (Friend & Hickling, 1987), and those who "hold a stake" about the decisions made by the organization (Eden & van der Heijden, 1993; Wagner, 1993). In general the most widely known definition has been proposed by Freeman (1984) which states "A stakeholder in an organization is (by definition) any group or individual who can affect, or is affected by, the achievement of the organization's objectives." In all cases, stakeholders are an inseparable part of the management strategy, and this concept helps people and organizations to agree upon joint goals, participation, boundaries and benefit, i.e. flexibly to plan activity (Susniene & Sargunas, 2009). They further argue that organization - stakeholder relations lead to new ideas about the responsibilities of organizations, the role of managers, and the most appropriate management style.

Freeman (1984) divided his broad stakeholder groups into internal (customers, employees, suppliers, owners) and external (governments, competitors, special interest groups, etc.). Although the internal groups are seen as "key", in some situations the external stakeholders are more important and they cannot a priori be relegated to a subsidiary position (Bailur, 2007). There is further division between primary and secondary stakeholders. Clarkson (1995) defines primary stakeholders as those "without whose continuing participation the corporation cannot survive as a going concern". If these primary stakeholders withdraw or become dissatisfied with the system, "the corporation will be seriously damaged or unable to continue". He further argues that support of primary stakeholders can be lost if the organization is either unable to create and distribute sufficient wealth or value to satisfy them, or if more wealth or value is given to one primary stakeholder group at the expense of another group, which would cause them to withdraw from the system. On the other hand, secondary stakeholder groups are those who have the "capacity to mobilize the public opinion in favor of, or in opposition to, a corporation's performance. Pouloudi (1999) argued that stakeholders are not passive environmental elements, but act according to their interests and use their power to influence the organization in the direction they desire, and in this context, the word "or" is significant as, according to Freeman, it indicates two directions of influence (between organization and stakeholder) along with provision of future stakeholders. The more dynamic perspective of organization - stakeholder relations acknowledges the interdependence that prevails between companies and their stakeholders, and asserts that stakeholder relationships can be a source of opportunity and competitive advantage rather than simply a threat or drain on organizational resources (Susniene & Sargunas, 2009).

The present article reviews stakeholder theory and its various applications in the IS and ICT (Information Communication Technology) in organizations. Recently, stakeholders are also seen as the means to more successful information and communication technologies, and information system development and implementation issues. The paper presents stakeholder theory, its origin, and finally applications in Information Systems (IS) field in the literature.

The research objective: To identify and review Stakeholder theory application in information system and technology.

The research problem: To introduce stakeholder theory and identify its applications in the information system and information technology.

The research methods: The methods used logical and comparative analysis of literature; synthesis, review and deduction.

First, this paper introduces stakeholder theory from its inception. Second, the applications of stakeholder theory in information system and information technology towards organizational, strategic, ethical, cultural and other related issues will be presented. Finally, stakeholder theory applications in Information system and technology perspectives by different researchers are discussed. The available studies have generally and merely focused on stakeholder theory and its single application in specific areas of information system or information technology. This paper provides a rather comprehensive review in this regard which hopefully ease the task of researchers working in this significant interdisciplinary area.

The research is formed by: The research is formed by a systemic and comparative literature analysis of scientific publications with the intention to identify stakeholder theory applications in information systems and technology.

Stakeholder Theories of Management

Origin of Stakeholder Theory

Stakeholder theory has its origins in management literature. Preston (1999) traces the notion of stakeholders back to the Great Depression in the United States (1929-1941), when the General Electric Company defined four major stakeholder groups - shareholders, employees, customers, and the general public. Freeman (1984) indicated its origin linked to the research conducted by the Stanford Research Institute, which defined it in 1963 as "those groups without whose support the organization would cease to exist" (Freeman, 1984). Freeman (1984) recommended a managerial perspective, which identifies four key stakeholders being the firm-owners, customers, employees, and suppliers and also found that during late Twentieth Century, the owners of corporation were no longer focusing on just their returns on investment, but were also interested in "shareholder activism" and promoting social justice.

The framework of the stakeholder model illustrates more clearly the relationships among the various groups of actors in and around the organization. Based on extensive literature reviews on organizational theory and corporate strategy along with a vast amount of research and observation Freeman provided the notional view of the organization in a new and simplified fashion. Freeman (1984) originally presented the stakeholder model as a map in which

the organization is the hub of a wheel and stakeholders are at the ends of spokes around the rim (Freeman, 1999). It consisted of one central circle, or oval, representing the firm, surrounded by a variable number of other circles or ovals with bi-directional arrows toward and from the cen-

tral oval, each oval representing a group of stakeholders. Freeman's original framework included eleven stakeholders on a non-exhaustive basis (Freeman, 1984). The most common version of the model (Figure 1) includes seven stakeholders.

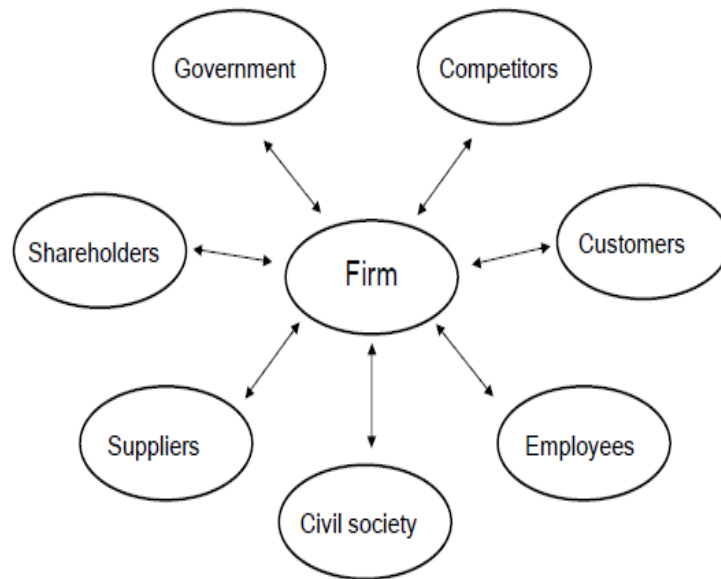


Figure 1. The original stakeholder model (Freeman, 1984)

Descriptive, Instrumental, and Normative Views of Stakeholder Theory

Donaldson and Preston (1995) described the descriptive, instrumental, and normative views of stakeholder theory to facilitate in understanding different features of this theory as follows:

- a) Stakeholder theory is **descriptive** in the sense that “it describes the corporation as a constellation of cooperative and competitive interests possessing intrinsic value”.
- b) Stakeholder theory is **instrumental** because “it establishes a framework for examining the connections, if any, between the practice of stakeholder management and the achievement of various corporate performance goals”.

c) Finally, “the fundamental basis” of stakeholder theory is **normative** and involves acceptance of the following ideas: stakeholders are persons or groups with legitimate interests in procedural and /or substantive aspects of corporate activity” and “the interests of all stakeholders are of intrinsic value”.

d) Further, Donaldson and Preston (1995) justify their claim that the normative aspect is at the core of the stakeholder theory by exemplifying how the justifications for favoring stakeholder theory over other management theories ultimately rely upon normative arguments. They suggest that these three aspects can be viewed as nested circles (Figure 2).

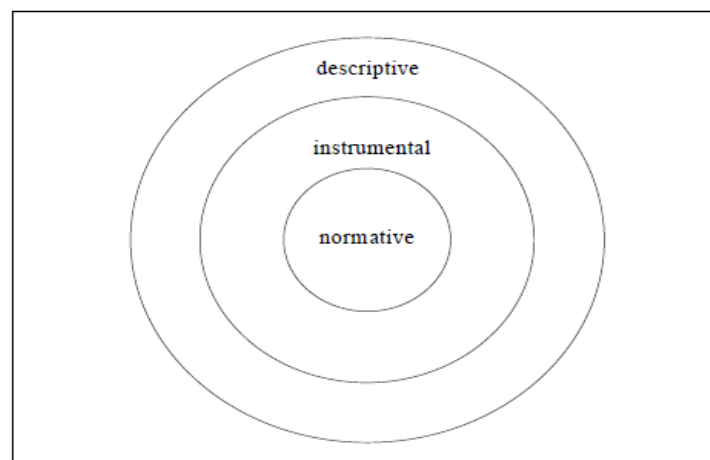


Figure 2. Aspects of stakeholder theory (Donaldson & Preston, 1995)

Donaldson and Preston (1995) also suggested four central theses related to stakeholder theory.

- a) Stakeholder theory is descriptive because it offers a model of the corporation.
- b) Stakeholder theory is instrumental in offering a framework for investigating the links between conventional firm performance and the practice of stakeholder management.
- c) Although Stakeholder theory is descriptive and instrumental, it is more fundamentally normative. Stakeholders are identified by their interests, and all stakeholder interests are considered to be intrinsically valuable.
- d) Stakeholder theory is managerial because it recommends attitudes, structures, and practices and requires that simultaneous attention should be given to the interests of all legitimate stakeholders.

Stakeholder Theories in Information Systems

Most references to stakeholders in the information systems literature refer primarily to individuals or groups within the organization and contrary to the stakeholder literature in strategic management (Pouloudi, 1999). Mumford (1979) is one of the early researchers in supporting the involvement of end-users as a component of effective information systems development and implementation, using essentially the stakeholder concept in this domain. It has been proved that end-users and managers are very important towards successful system implementation. As more inter-organizational information systems are developed which usually involve a strategic decisions, a yet wider range of stakeholders needs to be involved (Pouloudi, 1999). In these systems the attention may switch from end-users and focus on those parties that are external to the organization, but which can be associated in decision-making at managerial or strategic level (Pouloudi & Whitely, 1997). According to Pouloudi, (1999) it is important to note there is some confusion in information systems research about the notion of stakeholders, and researchers do not offer a specific definition (Benjamin & Levinson, 1993; Eden & Ackermann, 1994; Galliers, 1994; Lee & Gough, 1993). For instance, Boddy and Buchanan (1986) explained that “organizations can be viewed as comprising different ‘stakeholder’ groups, whose interests in promoting or resisting change, or apathy to innovation, may be explained by identifying their respective perceived interests and by examining how they will be affected by

new technology”. Willcocks and Mason (1987) define the stakeholders of a computer system similar to Freeman as “people who will be affected in a significant way by, or have material interests in the nature and running, of the new computerized system”.

Ahn and Skudlark (1997) have provided an extended definition of the stakeholder in this way: “the stakeholders are a group of people sharing a pool of values that define what the desirable features of an information system are and how they should be obtained”. Lederer and Mendelow (1990) observed the ‘environment’ of the information system department, and included the host organization’s environment as “everything within the organization that lies beyond the borders of the IS department”. Checkland in the soft systems methodology mentioned the requirement for stakeholder identification and the significance of underlining different stakeholder’s perspectives, mainly by using the ‘CATWOE’ elements (customer, actor, transformation process, Weltanschauung, system owner, environmental constraints) (Checkland, 1981; Checkland & Scholes, 1990). This approach has the advantage that it can be used to provide a holistic representation of the information system, be it a part of whether an organization or an inter-organizational system in as broad an aspect as the “human activity system”. One of the most common instrumental approaches to the stakeholder analysis in the information systems field addresses one key issues in information systems practice (Brancheau *et al.*, 1996; Galliers & Baker, 1994; Knights *et al.*, 1997), that is the development of the information systems strategy and its alignment with company’s business strategy (Pouloudi, 1999). According to Lacity and Hirschheim (1995), a major obstacle for the alignment of information systems and business strategies is the conflicting expectations and perceptions of information systems that different organizational stakeholders hold. The senior management is mostly concerned with the cost, whereas the end-users are mostly concerned with the service. Information system managers are ‘caught in the middle’ of a hostile environment and find that they need to justify the agreement made with these groups. Benjamin and Levinson (1993) proposed a 7- step stakeholder analysis approach (Table 1) that will support the management of change enabled by IT. These steps have been expected to help the organization to determine whether the change is feasible, and also what modified in strategy can bring about better results.

Table 1

Stakeholder analysis (Benjamin & Levinson, 1993)

Step 1	Identify a vision or objective.
Step 2	Describe a number of future states in terms of goals understandable by the stakeholder group..
Step 3	Break the goals down into the process, technology, and organization and cultural steps necessary to balance organizational equilibrium.
Step 4	Identify stakeholder groups whose commitment is necessary for achievement of each goal.
Step 5	For each type of stakeholder, describe the needed changes, perceived benefits, and expected kind of resistance.
Step 6	Analyze the effort required to gain the necessary commitment from the stakeholder group.
Step 7	Develop actions plans for those stakeholder groups that are not committed enough.

One of the most thorough investigations of the stakeholder concept in information systems research that relates information systems stakeholders with implementation failure has been made in early work by Lyytinen and Hirschheim (1988, 1987). They argue that failure is conditional on the capability of the information system to meet the expectations of different stakeholders (information sys-

tem may be considered successful by some stakeholders, but a failure by others). Whilst the stakeholder management literature concentrates on debating the normative use of the stakeholder concept, the information system literature has remained focused on the instrumental perspective of stakeholder theory (Pouloudi, 1999), which has been summarized in Table 2.

Table 2

The use of stakeholder concept in information systems research (Pouloudi, 1999)

Examples of instrumental uses		Examples of normative uses
Stakeholder analysis can be used to assist IS planning and strategy formulation.	Stakeholder analysis can be used to assist IS development and implementation.	<ul style="list-style-type: none"> • It is ethical to consider Stakeholders • Stakeholder analysis can be used to study ethical issues.
<ul style="list-style-type: none"> • Organizations need to consider IS stakeholders (Earl, 1989); • Dynamics of key stakeholder groups need to be addressed (Ruohonen, 1991); • Misalignment of IS strategies can be addressed by considering the stakeholder agendas (Lacity and Hirschheim, 199). 	<ul style="list-style-type: none"> • Failure is contingent on the capability of IS to meet different stakeholder expectations (Lyytinen, 1988) (Lyytinen and Hirschheim, 1987); • Information centers need to consider key stakeholders when developing IS (Bento, 1996); • Management of conflicting stakeholder interests is important for IS implementation (Ahn & Skudlark, 1997). 	<ul style="list-style-type: none"> • Obligations of IS professionals towards stakeholders: to minimize harm to others (Rackley, 1996); • Ethical decisions regarding the privacy of medical information are made in a context of complex stakeholder relations (Introna and Pouloudi, 1998) (Pouloudi, 1997).

Application of Stakeholder Theory in Information Systems

Boddy and Buschanan (1986) define organizational information system stakeholders as “all those who have a practical concern for the effective application of new technologies, and who are in a position to take or to influence

decisions about why and how they are used”. There is a number of applications for stakeholder theory in the Information and Communication Technology (ICT) and Information Systems (IS) related areas. The stakeholder theory and its applications in IS and the allied areas along with the main results are summarized in Table 3.

Table 3

Applications of Stakeholder Theories in IS

Study	Area	Purpose	Main Results
Fedorowicz <i>et al.</i> , (2010)	E-government	By identifying legitimate stakeholders and their concerns prior to the implementation, data controllers can reduce adoption and implementation barriers in e-government data mining applications.	Drawing on stakeholder theory, a typology of four stakeholder groups (data controllers, data subjects, data providers, and secondary stakeholders) is proposed to address the privacy concerns, and further argue that by ensuring procedural fairness for the data subjects, agencies can reduce some barriers that impede successful adoption of e-government applications and policies.
Kamal <i>et al.</i> , (2011)	E-government	To study the role of stakeholders and the surrounding challenges when implementing TIS in LGAs as the TIS adoption process involves several stakeholders, each with their own specific domain knowledge and expertise that are crucial to the success of TIS projects.	Proposed the concept of stakeholder theory to analyze the role of stakeholders during the Technology Integration Solutions (TIS) adoption process with regards to their perceptions on the factors influencing TIS adoption in Local Government Authorities (LGAs) and their involvement on the adoption lifecycle phases.
Lapointe <i>et al.</i> ,(2011)	Health Information Technology	Framework proposed to assess the actual impacts of health information technology (HIT) implementation.	<ol style="list-style-type: none"> 1. An assessment framework was developed to provide general guidance on how to assess HIT impacts. 2. The proposed framework will be useful for researchers and practitioners as it takes into account the underlying reasons for the HIT productivity paradox and identifies the salient outcomes of interests associated with HIT implementation.
Yuthas & Dillard (1999)	Business Ethics	Based on stakeholder theory, the ethical development of advanced technology.	<ol style="list-style-type: none"> 1. Proposed a stakeholder theory of enabling as one way to make the risks and moral concerns associated with business AIT (Advanced Information Technology) systems more visible. 2. Applying the principles of affirmative post-modern ethics through a stakeholder-enabling system development process that explicitly allows for the examination of moral concerns, which might otherwise be overlooked, ignored, or silenced.

Study	Area	Purpose	Main Results
Rowley (2010)	E-government	Development of tools and approaches for understanding the benefits sought by a wide range of stakeholder groups in e-government.	<ol style="list-style-type: none"> 1. Successful e-government requires engagement of all stakeholders, and preliminary to that engagement is a shared understanding of the interests, perspectives, value dimensions, and benefits sought from e-government by the various stakeholders roles. 2. Study proposed typologies of stakeholders roles, and stakeholder benefits, and embedding these in the stakeholder benefits analysis tool (SBAT). This is designed to be used to support: <ol style="list-style-type: none"> (i) The identification of stakeholders; (ii) The recognition of differing interests amongst stakeholders; and (iii) The development of strategies to align stakeholder interests so that participation in e-government can be self-governing.
Chung, Chen & Reid (2009)	Business Intelligence Systems	Proposes a framework for designing Business Intelligence (BI) systems to identify and classify stakeholders on the Web.	<ol style="list-style-type: none"> 1. Framework proposed for designing Business Intelligence Systems to identify and classify stakeholders on the Web, incorporating human knowledge and machine-learned information from web pages. 2. Based on their framework a prototype called 'Business Stakeholder Analyzer' (BSA) is developed which helps managers and analysts to identify and classify their stakeholders on the Web. 3. Research results provide a better understanding of how to integrate information technology (IT) with stakeholder theory towards enriching the knowledge base of business intelligence system design.
Islam & Gronlund (2007)	E-government	To assesses an e-government project using design-reality gap analysis and stakeholder theory.	<ol style="list-style-type: none"> 1. It used stakeholder analysis and a gap analysis technique to assess an e-Government project crucial for almost all developing countries – providing information to the Agriculture Market Information System. 2. The research suggests the use of mobile technologies in combination with call centres and locally available human resources as the most important factors for e-government success.
Bailur, (2007)	Telecenter Projects	Applying stakeholder theory to analyze telecenter projects.	<ol style="list-style-type: none"> 1. Analyze the applicability of a stakeholder perspective in development informatics. 2. Provides preliminary framework for identification and management of stakeholders. 3. Involving stakeholder is a much more complex activity than many of the telecenter analysts cited earlier.
Lim, Ahn & Lee (2005)	Strategies for Stakeholders management	Proposes a methodology for formulating strategies for stakeholder management by the use of these RDAP (reactive, defensive, accommodative, or proactive) strategies.	<ol style="list-style-type: none"> 1. Authors present a holistic way to integrate the most critical tasks surrounding stakeholder management. 2. It employs a Case-Based Reasoning (CBR) technique and proposes a methodology to help formulating stakeholder management strategies. 3. A system called the 'Stakeholder Management Strategy Support System' (SMSSS) is implemented to put the proposed methodology to work.
Chua <i>et al.</i> , (2005)	E-commerce	The Evolution of E-commerce research : A stakeholder perspective.	<ol style="list-style-type: none"> 1. This work surveys seven of the top nine e-Commerce journals to test the proposition that stakeholder theory suggests that, as an emerging research discipline, e-Commerce research is likely to focus primarily on specific stakeholders and ignore others. 2. Academic e-commerce researchers concentrate their attentions on two stakeholder groups, specifically customers and internal organization (i.e., managers and employees) of the Net-Enhanced Organization (NEO).
Flak & Rose (2005)	E-government	Adapting stakeholder theory to e-government.	<ol style="list-style-type: none"> 1. Apart from its original profit focus, there is no serious conceptual mismatch between stakeholder theory and the government's objective of providing policy and services for citizens and organizations - society's stakeholders. 2. The article discusses how information technology impacts a stakeholder model of governance.
Dimovski & Skerlavaj (2005)	Effect of ICT on organizations	A Stakeholder theory approach to the organisational performance and influence of ICT.	<ol style="list-style-type: none"> 1. Higher-level organizational learning leads to improved organizational performance from the employee's perspective. 2. Companies which focus their efforts into a systematic approach to organizational learning profit in terms of an augmented level of employee trust in the leadership, improved efficiency of work organization, a more committed workforce, reduced costs per employee, increased employee satisfaction, and increased employee flexibility.
Zhang, Dawes & Sarkis (2005)	E-government	Exploring stakeholders' expectations of the benefits and barriers of e-government knowledge sharing.	<ol style="list-style-type: none"> 1. There are significant differences among stakeholders groups based on the types of organizational membership. 2. Local government stakeholders are considerably less optimistic in achieving goals, and more concerned about a variety of organizational, technological, and financial barriers. 3. Research results indicated that key participants' expectations were similar to those of general participants/users.
Scott,	E-government	Implementation strategies for e-	<ol style="list-style-type: none"> 1. Public-sector organisations in particular present unique challenges to the

Study	Area	Purpose	Main Results
Golden & Hughes (2004)		government: A stakeholder analysis approach.	implementation process, and implementation strategies often require particular attention to the social and political elements inherent in organisational change. 2. In e-government implementation, the main barriers are not technical but rather social and cultural. Implementation strategies should, therefore, support the process of managing stakeholder relations in order to reduce the risk of stakeholder conflict and ensure the success of e-government initiatives.
Pouloudi <i>et al.</i> (1999)	Information System	Aspects of the stakeholder concept and their implication in IS.	1. The study investigated different perspectives of the stakeholder concept that have been discussed in the literature along with shortcomings. 2. Stakeholder analysis can provide multiple and mutually supportive approaches to the study and practice of information systems development, particularly if descriptive, instrumental and normative aspects are taken into account.
Smith & Hasnas (1999)	Information Systems	Study of the relationship between Ethics and Information Systems.	1. Information system had made great use of technology in the past two decades but the growing number of ethical dilemmas also grew during the same time frame without receiving proper attention. 2. Future research should clarify obligations for individuals in non-profit or public-sector organizations with a similar context.
Vidgen (1997)	Information System	Stakeholders, soft systems, and technology in the analysis of information system requirements.	1. The application of stakeholder analysis and soft systems thinking for an investigation of information system requirements. 2. A framework for investigating IS requirements is proposed that contrasts the current situation with the future ones and the real world, specifically with conceptual thinking about the latter.
Cheng & Wang (2009)	Corporate Governance	To study the significance of establishing an independent director system.	1. As a system arrangement in corporate governance, designation of an independent manager (director) will help to improve the structure of corporate governance, maintain interests of all stockholders, and protect rights and interests of small-and-medium size of investors. 2. There is a need to strengthen and optimize the independent director system with a Chinese characteristic.
Ruohonen (1991)	Strategic Information System	To examine intra-group and inter-group relationships in the context of Strategic information systems planning (SISP)	1. Strategic information systems planning (SISP) requires the participation and involvement of different managerial groups, and the key stakeholder groups in this process are the top management, user management, and IT/IS management. 2. Management education is needed to integrate the different views of managers concerning the use of IT. 3. Successful SISP requires sound communication and the interpretation of these different views.
Lacity & Hirschheim (1995)	Information System	Presented framework to understand the context of misalignment which can assist stakeholders clear out their differences to reach a general strategy.	1. Presented framework to understand the context of misalignment, which can help stakeholders to resolve their differences to arrive at a common strategy for the portfolio of IS activities. 2. In the context of a shared strategy, the benchmarks targeted at performance improvement — rather than turf- protection — can be achieved.
Bento (1993)	Information Centres	Analysis of Information Centres from major stakeholders' perspective.	1. A conceptual model, based on the role theory, is presented to explore the special challenges of "life in the middle", such as different expectations about the roles that should be performed by Information Centers (IC) professionals, different criteria for evaluating their performance, and different perceptions of their success. 2. These special challenges were empirically studied through in-depth interviews with users, IS Managers and IC Managers, in a random national sample of forty-seven Fortune 500 companies. 3. The results indicate that, given the multiple expectations surrounding Information Centers, IC professionals need to be flexible in adopting different roles, skilled in coping with different sets of performance criteria, and keenly aware of the highly subjective nature of the evaluations received from their diverse constituents.
Benjamin & Levinson (1995)	Managing IT-Enabled Changes.	Framework for managing IT-enabled changes.	1. Develop a framework for managing IT-enabled changes. 2. The proposed framework provides a common language for managers implementing IT-based modifications and showed how technology, business process, and organization must be adapted to each other for such changes to be effective.
Boonstra (2006)	ERP-implementation	ERP implementation effects on stakeholders.	1. Different stakeholders can view ERP-systems in different ways, according to their own histories, interests, self-images, prospects, and views. 2. ERP-implementation is a dynamic process and therefore, the views held by stakeholders at one point in time may change during the project due to various reasons, including cognitive, political, and opportunistic ones.

Discussion

Stakeholder theory provides the benefit of determining who is key in a project, and if and how they can be managed. Bailur (2006) has observed that the stakeholders analysis involves the use of categorization that is quite subjective as it matters who conducts the analysis and makes the distinction between “important and/or influential” or “primary or secondary” in her project case. She argues that it is difficult to know how to identify stakeholders, whether they are primary or secondary, what their interests might be, how they might work together, and if and how they can be managed. In addition, stakeholders involved in a project change all the time which makes difficult to label them. Freeman (1984) explained this through what he calls the “snail darter fallacy”. Chung *et al.*, (2009) also acknowledge that stakeholder - type classifications as a limitation of their study and include this in their future work plan to automate such analysis in business stakeholder analyzer prototypes. The management of competing stakeholders has emerged as an important weapon for strategic management, and stakeholders need to be categorized for the better utilization of rules for generating appropriate strategies (Lim *et al.*, 2005). Rowley (2010) stressed that there is a need to do more work towards the understanding of e-government stakeholder roles and benefits in e-government with the help of stakeholder benefits analysis tools. Flaks and Rose (2005) observed that there is no serious conceptual mismatch between stakeholder theory and a government's objective of providing policy and services for citizens and organizations - a society's stakeholders. Islam and Gronlund (2007) have found stakeholder theory useful to understand e-services but state that it lacks in adaptation to stakeholder preferences, needs, capabilities, as well as in project resources including staff supply and qualifications. Over time, stakeholder preferences evolve and their stakes change based upon the strategic issues considered relevant at a particular point in time (Freeman, 1984). Post *et al.*, (2002) also supported that successful stakeholder management also involves learning, because stakeholder characteristics and interests change over time. The five stakeholder groups identified in management theory (Friedman & Miles, 2002; Argandona, 1998) are the firm's suppliers, consumers, employees, competitors and government/regulatory agencies. Freeman *et al.*, (2004) suggested that “business is about putting together a deal so that the suppliers, customers, managers and shareholders all win continuously in the course of time. Stakeholder satisfaction is critical for organizations in order to obtain a license to operate and produce output, and to gain resources and trust and, therefore, to be competitive and successful in the long run (Susniene & Vanagas, 2007). Strengthened cross-border co-operation between all stakeholders is necessary to reach the goal of trust infrastructure in the organizations (Gatautis & Vitkauskaite, 2009).

It has been observed in our rigorous literature review that stakeholder theory has been applied to different domains in the following order: E-Government (8), E-Commerce and Information System (9), Business Ethics (1), Health Information Technology (1), Business Intelligence Systems (1), Strategies for stakeholder management (1).

Stakeholder theory has become significant in the present context due to its application not only in these contexts but also implications in ethical, policy and strategic dimensions. In E-government and information projects and implementation stakeholders contribution is very significant and without this it will be impossible to accomplish projects objectives. It is also interesting to note the observation by Roberts and Mahoney (2004) who have examined 125 accounting studies that used the stakeholder language and found that nearly 65 percent “use the term stakeholder without reference to any version of stakeholder theory”. The important thing is that writers use the same label to refer to a lot different concepts. This of course can have great consequences on ethical, policy, and strategic conclusions. Although there are limitations of stakeholder theory still it is significant as it is related with organizational management, business ethics, cultural and other related issues that address values and morals in managing an organization.

Vidgen (1997) proposed future work in terms of IS requirements framework in the context of the wider IS development process based on stakeholder analysis. The stakeholder theory claims that managers should resolve ethical quandaries by balancing stakeholder interests without violating the rights of any stakeholder (Smith & Hasnas, 1999). Whereas stakeholders are more broadly and emotionally involved in the system development process, they may be more likely to embrace the outcomes of these systems when end-users are involved in the development. Whats more, such these systems are more likely to meet better the needs and concerns of the stakeholders (Yuthas & Dillard, 1999). Chua *et al.*, (2005) argued that at least four stakeholder groups, namely investors, suppliers, regulators, and indirect stakeholders, will increasingly demand the attention of NEOs, and, therefore, should be the focus of expansion and research among IS and e-Commerce specialist. Boonstra (2006) illustrated that ERP-implementation can have an influence on the interests of stakeholders, and be perceived as a negotiation process where various parties try to use the ERP project to defend or to advance their individual or group interests. According to him, there are some directions for future research to turn the stakeholder approach into a comprehensive ERP/ICT project analysis. Also, culture affects the use of ICT in significant ways (Akman & Mishra, 2010). Therefore, it will be interesting to study how culture and ICT contribute to stakeholder management with different information system applications.

Conclusions

The concept of stakeholder represents a progression from the developer and user-centered, problems to organization-wide and inter-organizational information system problems. This is a sign of maturity of information systems research to show how the holistic representation of the parties involved in the more complex systems has currently developed (Pouloudi, 1999). Stakeholder theory proposes an ethical use of this stakeholder concept in IS as ethical considerations and professional conduct is a significant issue nowadays.

Upon the literature review and examination of prevailing viewpoints in the respect, it becomes apparent that stakeholder theory can have an impact in different stages of IS and technology. Stakeholder analysis is a very effective mechanism for carrying needs and interest into the planning process and, from there, into the organization's performance. Also, a more thorough understanding of the stakeholder's interests and their alliance into the organizations operational plans is also detrimental important in this process. It is evident from literature review and analysis that majority of stakeholder theory applications in information systems are related to E-government, E-commerce and information systems domains. Business ethics, health information technology, and business intelligence systems are other areas of stakeholder theory applications.

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Therefore, from the IS perspective, stakeholder theory provides insights on the organizational, strategic, ethical, cultural and at project levels for:

- Managers in understanding multilateral stakeholder relationships in organizations. Stakeholder analysis will help in study of inter-organizational systems and information system planning and strategy formulation.
- Service Providers in identification of stakeholders and development of stakeholder typologies.
- Users where they can understand managerial attitudes, structures, and practices adopted in information system development and implementation.
- Developers, in choosing the early correct perspectives on stakeholder management to ensure success of a project. Good stakeholder management can also lead to the higher project performance.

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Alok Mishra, Deepti Mishra

Suinteresuotųjų šalių teorijos pritaikymai informacinėse sistemose ir technologijose

Santrauka

Suinteresuotųjų šalių teorijos sąvoka minima jau literatūroje apie valdymą. Preston (1999) teigia, kad Jungtinėse Valstijose (1929-1941), *General Electrical Company* nustatė keturias svarbiausias suinteresuotųjų šalių grupes: akcininkai, darbuotojai, vartotojai ir plačioji visuomenė. Suinteresuotųjų šalių valdymas tapo svarbiu įrankiu kalbant apie etiką ir valdymą. Keletas valdymo klausimų sukėlė daugiau diskusijų, nei sąvokos reikšmė, modelis ir teorijos (Donaldson ir Preston, 1995; Gibson, 2000; Wolfe ir Putler, 2002; Friedman ir Miles, 2006). Akivaizdi suinteresuotųjų šalių modelio galia ir jo paprastumas vertinami kaip įnašas suinteresuotųjų šalių koncepcijos sėkmei (Fassin, 2008). Pastebėtas didėjantis tarpusavio ryšys tarp suinteresuotųjų šalių teorijos, bendrosios atsakomybės ir verslo etikos sąvokų (Valor, 2005; Garriga ir kt., 2004). Suinteresuotųjų šalių sąvoka rodo progresą, atsiribojimą nuo problemų, sutelktų į kūrėją ir vartotoją. Tai informacinių sistemų tyrimo brandos ženklas norint parodyti, kaip išsivystė dabartinis holistinis šalių, dalyvaujančių daug sudėtingesnėse sistemose, vaizdas (Pouloudi, 1999). Suinteresuotųjų šalių teorijoje yra siūlomas etinis suinteresuotųjų šalių sąvokos naudojimas informacinėse sistemose, nes etiniai svarstymai ir profesionalus elgesys yra svarbi informacinių sistemų tema.

Freeman (1984) savo dideles suinteresuotųjų šalių grupes padalino į dvi grupes: į vidaus (vartotojai, darbuotojai, tiekėjai, savininkai) ir išorės (vyreriausybės, konkurentai, tam tikro suinteresuotumo grupės ir t.t.). Nors vidaus grupės vertinamos kaip „pagrindinės“, kai kuriose situacijose išorės suinteresuotosios šalys yra svarbesnės ir jos negali būti iš anksto nukreiptos į pagalbinę poziciją (Bailur, 2007). Toliau skirstoma į pradinės ir antrines suinteresuotąsias šalis. Clarkson (1995) apibrėžia pradinės suinteresuotąsias šalis kaip šalis „be kurių tęstinio dalyvavimo kooperacija negali išgyventi kaip veikianti įmonė“. Jei šios pradinės suinteresuotosios šalys pasitraukia arba jų netenkina sistema, „kooperacija bus rimtai pažeista arba nebegalės tęsti veiklos“. Jis įrodinėjo, kad pradinė suinteresuotųjų šalių parama gali būti prarasta, jei organizacija negali kurti ir skirstyti pakankamai turto ir vertės, kad jas patenkintų, arba jei daugiau turto ar vertės yra duodama vienai pradinei suinteresuotųjų šalių grupei kitos grupės sąskaita. Tai priverstų jas pasitraukti iš sistemos. Iš kitos pusės, antrinės suinteresuotųjų šalių grupės yra tos, kurios turi „pajėgumų mobilizuoti visuomenės nuomonę kooperacijos veiklos naudai arba priešingai“.

Suinteresuotųjų šalių teorija yra plačiai taikoma valdyme nagrinėjant organizacijos aplinką, strateginį valdymą, etinius klausimus, verslo planavimo procesą, e-valdymą, projekto valdymą, aplinkos valdymą ir t.t. Pastaruoju metu suinteresuotosios šalys taip pat yra vertinamos ir kaip dar sėkmingesnio informacinių ir komunikacinių technologijų tobulinimo ir įdiegimo priemonė. Šiame darbe analizuojama suinteresuotųjų šalių teorija, jos kilmė ir pritaikymas Informacinės sistemos (IS) srityje.

Dauguma nuorodų į suinteresuotąsias šalis mokslinėje literatūroje, kurioje analizuojamos informacinės sistemos, pirmiausia nurodo asmenis arba grupes organizacijos viduje, o strateginio valdymo literatūroje priešingai (Pouloudi, 1999). Mumford (1979) yra vienas iš tyrinėtojų, kuris remia vartotojų įtraukimą, laikydamas tai efektyvius informacinės sistemos plėtos ir diegimo dalimi. Buvo įrodyta, kad galutiniai vartotojai ir vadovai yra labai svarbūs sėkmingam sistemos diegimui. Kadangi plėtojama daugiau tarporganizacinių informacinių sistemų, kurios dažniausiai apima strateginius sprendimus, reikia įtraukti dar didesnę suinteresuotųjų šalių grupę (Pouloudi, 1999). Šiose sistemose, dėmesys gali būti perkeltas nuo galutinių vartotojų ir sutelktas į tas dalis, kurios organizacijai yra išorės, tačiau gali bendradarbiauti priimant sprendimus vadovavimo arba strateginiu lygiu (Pouloudi ir Whitely, 1997). Anot Pouloudi, (1999) svarbu pabrėžti, kad tiriant informacines sistemas yra tam tikros maišaties dėl suinteresuotųjų šalių sąvokos. Kai kurie tyrėjai nešiuo tikslaus apibrėžimo (Benjamin ir Levinson, 1993; Eden ir Ackermann, 1994; Galliers, 1994; Lee ir Gough, 1993). Boddy ir Buchanan (1986) aiškina, kad „organizacijas galima vertinti kaip apimančias skirtingas *suinteresuotųjų šalių* grupes, kurių interesai, remiantis pokyčius ar jiems priešinant, gali būti paaiškinti nustatant atitinkamai suvokiamus jų interesus ir išnagrinėjant kaip juos paveiks nauja technologija“. Willcocks ir Mason (1987) apibrėžia kompiuterinės sistemos suinteresuotąsias šalis panašiai kaip Freeman, kaip „žmones, kuriuos labai paveiks, arba kurie turės materialinės naudos iš naujos kompiuterinės sistemos ir veiklos“.

Ahn ir Skudlark (1997) pateikė išplėstinį suinteresuotųjų šalių apibrėžimą taip „suinteresuotosios šalys yra grupė žmonių, kurie dalinasi bendromis vertybėmis, kurios parodo, kokios informacinės sistemos savybės yra pageidaujamos ir kaip jos turėtų būti įgytos“. Lederer ir Mendelow (1990) stebėjo informacinės sistemos skyriaus aplinką ir įtraukė organizacijos *šeimininkės* aplinką kaip ir „viską esantį organizacijos viduje, kas yra už IS skyriaus ribų“. Checkland metodologijoje paminėjo reikalavimą nustatyti suinteresuotąją šalį ir svarbą pabrėžti skirtingų suinteresuotųjų šalių perspektyvą, daugiausiai naudojant CATWOE (*plg. angl.* customer – vartotojas, actor – veikėjas, transformation process – transformacijos procesas, Weltanschauung – pasaulio požiūris, system owner – sistemos savininkas, environmental constraints – aplinkos suvaržymai) elementus (Checkland, 1981, Checkland ir Scholes, 1990). Šio metodo privalumas yra tas, kad jį galima panaudoti norint pateikti holistinį informacinės sistemos vaizdą jei ji kaip žmogiškos veiklos sistema „būtų organizacijos arba tarporganizacinės sistemos dalis platesniu aspektu. Vienas iš įprasčiausių pagalbinių būdų suinteresuotųjų šalių analizei informacinių sistemų srityje atkreipia dėmesį į vieną iš pagrindinių informacinių sistemų praktikos temų (Brancheau ir kt., 1996; Galliers ir Baker, 1994; Knights ir kt., 1997), tai yra į informacinių sistemų strategijos plėtrą ir jos sureguliuojimą su verslo strategija (Pouloudi, 1999). Anot Lacity ir Hirschheim (1995), svarbiausia kliūtis informacinių sistemų ir verslo strategijų sureguliuojimui yra susikertantys informacinių sistemų lūkesčiai ir suvokimas, kurie skiriasi nuo tų, kuriuos turi įvairios organizacinės suinteresuotosios šalys. Aukštesnė vadovybė labiausiai rūpinasi išlaidomis, o vartotojams labiausiai rūpi paslaugos. Informacinių sistemų vadovai patenka į priešišką aplinką ir supranta, kad jie turi pateisinti su šiomis grupėmis sudarytą susitarimą. Benjamin ir Levinson (1993) pasiūlė 7 žingsnių suinteresuotųjų šalių analizės metodą, kuris paremtų valdymą pokyčių, kuriems atsirasti leido informacinės technologijos. Jie tikisi, kad šie žingsniai padės organizacijai nustatyti ar pokytis yra galimas ir kokia pokyčių strategija duos geresnių rezultatų.

Vienas iš išsamiausių suinteresuotųjų šalių koncepcijos informacinėse sistemose tyrimų, kuris susieja informacinių sistemų suinteresuotąsias šalis su įdiegimo nesėkme, buvo atliktas ankstyvajame Lyytinen ir Hirschheim darbe (1988, 1987). Jie teigė, kad nesėkmė sąlygoja informacinės sistemos gebėjimas atitikti skirtingų suinteresuotųjų šalių lūkesčius (kai kurios suinteresuotosios šalys gali laikyti informacinę sistemą sėkminga, tačiau kiti gali laikyti

ją nesėkminga). Boddy ir Buschanan (1986) organizacinės informacinės sistemos suinteresuotąsias šalis apibrėžia kaip „visus tuos, kurie praktiškai rūpinasi efektyviu naujų technologijų pritaikymu, ir kurie gali priimti sprendimus, arba daryti jiems įtaką, dėl to kodėl ir kaip jos yra panaudojamos“.

Suinteresuotųjų šalių teorija yra naudinga, kai norima išskirti kas yra svarbu projekte ir ar jis gali būti valdomas ir kaip. Bailur (2006) savo projekte teigė, kad suinteresuotųjų šalių analizė yra subjektyvi. Ji įrodo, kad sunku žinoti kaip nustatyti suinteresuotąsias šalis: ar jos yra pradinės ar antrinės ir kokie galėtų būti jų interesai, kaip jos galėtų dirbti kartu, bei ar jos gali būti valdomos. Suinteresuotosios šalys keičiasi viso projekto laikotarpiu, tai sunkina jų vertinimą. Chung ir kt. (2009) taip pat manė, kad suinteresuotųjų šalių tipų klasifikacijos riboja jų tyrimą ir įtraukė tai į savo būsimųjų darbų planą. Konkuruojančių suinteresuotųjų šalių valdymas atsirado kaip svarbus ginklas strateginiam valdymui ir suinteresuotųjų šalių poreikiui būti suskirstytoms į kategorijas norint geriau panaudoti atitinkamų strategijų kūrimo taisykles (Lim ir kt., 2005). Rowley (2010) pabrėžė, kad reikia atlikti daugiau tyrimų, norint suprasti e-valdymo suinteresuotųjų šalių vaidmenis ir naudą e-valdyme su suinteresuotųjų šalių naudos analizės įrankiais. Flaks ir Rose (2005) pastebėjo, kad nėra rimto konceptualaus neatitikimo tarp suinteresuotųjų šalių teorijos ir valdymo tikslo, pateikiant politiką ir paslaugas gyventojams ir organizacijoms – visuomenės suinteresuotosioms šalims. Islam ir Gronlund (2007) mano, kad suinteresuotųjų šalių teorija yra naudinga, norint suprasti e-paslaugas, bet ji nepritaiko prie suinteresuotųjų šalių teikiamų pirmenybių, poreikių, gebėjimų, taip pat ir tokių projekto resursų kaip aprūpinimas personalu ir kvalifikacija. Bėgant laikui suinteresuotosios šalies *pirmenybės* tobulėja, todėl kinta jų gairės. Post ir kt. (2002) manė, kad sėkmingas suinteresuotųjų šalių valdymas apima ir mokymąsi, nes suinteresuotųjų šalių interesai keičiasi laikui bėgant. Valdymo teorijoje nustatytos penkios suinteresuotųjų šalių grupės (Friedman ir Miles, 2002; Argandona, 1998). Tai įmonės tiekėjai, vartotojai, darbuotojai, konkurentai ir vyriausybė/reguliuojančios įstaigos. Freeman ir kt. (2004) manė, kad „verslas yra veikimas kartu taip, kad tiekėjai, vartotojai, vadovai ir akcininkai, laikui bėgant laimėtų“. Vidgen (1997) pasiūlė būsimojo darbo temą apie IS reikalavimų struktūrą platesnio IS plėtojimosi proceso mastu, pagrįstą suinteresuotųjų šalių analize. Suinteresuotųjų šalių teorijoje tvirtinama, kad vadovai turėtų išspręsti etines dvejones keliančius klausimus, kartu suderindami suinteresuotųjų šalių interesus, nepažeisdami nė vienos pusės interesų (Smith ir Hasnas, 1999). Suinteresuotosios šalys yra daug daugiau įtrauktos į sistemų plėtros procesą. Jos gali pasinaudoti šių sistemų rezultatais. Chua ir kt. (2005) teigė, kad mažiausiai keturios suinteresuotųjų šalių grupės, būtent investuotojai, tiekėjai, kontroliuotojai ir netiesioginės suinteresuotosios šalys, reikalauja vis didesnio NEO dėmesio ir todėl turėtų patraukti IS ir e-komercijos sričių mokslininkų dėmesį. Boonsra (2006) pailiustravo, kad ERP-įdiegimas daro įtaką suinteresuotųjų šalių interesams ir gali būti vertinamas kaip derybų procesas, kuriame įvairios šalys bando panaudoti ERP projektą, norėdamos apginti arba paskubinti savo individualius arba grupės interesus. Anot jo, egzistuoja tam tikros būsimųjų tyrimų kryptys norint paversti suinteresuotųjų šalių metodą išsamia ERP/ICT projekto analize.

Raktažodžiai: *suinteresuotųjų šalių teorija, suinteresuotųjų šalių modelis, suinteresuotosios šalys, informacinės sistemos, valdymas.*

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