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Consequences: Ethical Treatment of End Users

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INFORMATION SYSTEMS IMPLEMENTATION CONSEQUENCES: 
ETHICAL TREATMENT OF END USERS

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ABSTRACT
For decades, end users have been studied from a multitude of aspects, attitudes, and perspectives in an attempt to better understand end-user resistance to new technology and to find ways to increase the likelihood of implementation success. Similarly, ethical considerations surrounding the use of information technology has been a vibrant topic for some time, along with well-established work in the general field of ethics. However, there has been little work linking these important elements together in an effort to provide corporate leadership and implementation teams with tools to help them determine how their ethical decisions might affect end-users. This research in progress proposes a validation of the imperative to incorporate ethical elements into the decision-making necessary for the implementation process by focusing on the concept of harm. Using the explicit motivation to do no harm and drawing on prior work measuring end-user satisfaction and similar tools, an Ethical Treatment Index is proposed as an instrument to empirically measure end-user harm or the lack thereof as it relates to information systems implementations.

Keywords  
Ethics, ethical decision-making, information systems implementation, implementation methodology, end-user satisfaction

INTRODUCTION
The purpose of this research in progress is to provide an ethical foundation for information systems implementation methodology by examining the impact on the work lives of users as a consequence of technology and process change made by technical implementation teams tasked by corporate leadership, and to propose a tool that can be used to empirically measure the degree to which end users are ethically treated as a result of the implementation process. This builds on the framing of information systems ethical issues such as Mason’s (1986) PAPA model which identifies privacy, accuracy, property, and accessibility as four issues uniquely associated with information. In this framework, Mason emphasizes the impacts of individual and organizational decisions on others and alludes to process thinking. The proposed research seeks to expand these to a larger decision-making process that can be generalized to decision-making in other typical business scenarios.

Socio-technical systems theory provides us with the appropriate context and framework (Johnson, 2006): systems consisting of people interacting with each other and with technology to achieve a goal. Recent work (Guimaraes, et al., 2015; Mahmood, et al., 2000; Tarafdar, et al., 2011) in the field of end-user satisfaction and end-user performance provided amplification of the dichotomy between human and technical aspects, giving weight to the recognition that human factors demand our attention as much as technical considerations. Other important theories and perspectives include cognitive moral development, moral intensity (Jones, 1991), ascription of responsibility, and perception of ethical breaches. Since we need to look at the system of people and technology, the integration of foundational ethical theories becomes more complex; rather than analyzing the actions of individuals in somewhat siloed scenarios, we must consider their actions in the context of teams and the effects of their actions on stakeholders with whom they may or may not have directly interacted. The key piece holding this research together is the concept of impact of actions, either individual or team actions, on others.

BACKGROUND
Since the introduction of information systems, practitioners and academics alike have worked to better understand how to maximize the effectiveness of the information technology in order to best benefit the organization. End users proved to be extremely important to the success of implementations, but determining how best to understand and interact with them has been difficult. Several streams of research have emerged in trying to understand end users, with end-user satisfaction being a major area of study.

End-User Satisfaction
Mahmood et al. (2000) examined the results of 45 studies published between 1986 and 1998 that looked at relationships between end-user satisfaction; nine variables were examined as a way of better understanding how to deploy information
technology that was useful, and therefore successful, while recognizing that technical issues tell only part of the story. Their research strongly suggested that the following factors affect user satisfaction: user involvement in system development, perceived usefulness, user experience, organizational support, user attitude toward information systems, perceived attitude of top management toward the project, user expectations, user skills, and ease of use (listed in ranked order).

Guimaraes et al. (2015) addressed the impact of ERP implementation on end-user jobs, employing 11 variables including “the change in the: importance of the end-users jobs, amount of work required to do the job, accuracy demanded on the job, skills needed to do the job, job appeal, feedback on job performance, freedom in how to do the job, opportunity for advancement, job security, relationship with fellow employees, and job satisfaction.” They used a well-accepted instrument for measuring user perception of ERP impact on their jobs which was based on 1987 work by Millman and Hartwick cited by the authors; this was combined with previously tested measures from a variety of job satisfaction researches. Six variables were chosen to explain impact on user jobs, including “management support for the project, end-user characteristics, user involvement in ERP development/implementation, developer skills, user training, and user/developer communication” (Guimaraes et al., 2015). The focus of this research was to better understand how people were significant in ERP implementations, drawing a distinction between the human element and the technical aspect of such projects. The result suggested strong connections between end-user job impact and Management Support, Developer Skills, User Training and User Involvement.

Tarafdar et al. (2011) introduce the concept of technostress to our understanding of end-user satisfaction and end-user performance. Technostress is defined as “stress caused by an inability to cope with the demands of organizational computer usage...as a result of application multitasking, constant connectivity, information overload, frequent system upgrades and consequent uncertainty, continual learning and consequent job-related insecurities, and technical problems associated with the organizational use of ICT” (Tarafdar et al., 2011). Of particular importance in this study is the connection of end-user performance with end-user satisfaction. Their findings link technostress creators with impairment of productivity and link user involvement with an indirect boost to productivity via an increase in end-user satisfaction.

Incorporating Ethical Decision-making

The research on end users cited above focuses on satisfaction, and in the case of Tarafdar et al., productivity. These studies all seek to understand how end-users are impacted by various elements in the information systems implementation. A commonality can be found among the three studies with the identification of three sets of human factors: management, implementation team (or developers), and end-users. Reducing these studies to considering strictly the human element makes a strong argument for the need to understand the ethical implications of their interactions.

We also see that we are dealing with groups of humans interacting with other groups of humans. Thus we need to think organizationally, rather than individually. Support for this type of thinking can be found in Brown’s “communal approach” (1989); this approach maintains that when we consider ethics in the context of organizations, we cannot simply think of ethical decision-making as consisting of a collection of unconnected decisions made by individuals addressing ethical dilemmas one at a time. Instead, these individuals belong to a community and are making decisions within the context of a community. Brown contends that this leads to the conclusion that “to understand and change an individual’s behavior we need to understand and try to change the communities to which they belong” (Brown, 1989). The purpose of looking at information systems implementations through an ethical lens is so that we can attempt to do precisely that: provide guidance to individuals acting within the context of “communities” involved in making decisions about other communities.

This underlines the importance of building on existing ethical models in which the individual’s moral value system is engaged or not engaged to help the individual make his or her own decision about dilemmas with which he or she is presented. The dilemma may pertain to the organization, but in existing models, the individual is not making the decision within the context of the organization, in other words, as a member of the organization in concert with colleagues; instead, the individual is an independent actor. There is a need to a model that also addresses the organizational context.

This research proposes to close the gaps in thinking about end-users and in thinking about ethical decision-making within the context of information systems implementations by changing the mental model of visualizing the relationship between end-users, implementation teams, and management. Changing the focus results in changing the types of questions to be asked and fosters a better appreciation for possible consequences coming from decisions (Werhane, 2008). This will in turn lead to a concrete description of possible impacts on end users contingent on decisions made in the implementation process.

Looking outside the world of information systems research provides additional fruitful input to this research. Frisch and Huppenbauer (2014) identified the importance of ethical leadership on the part of executives through interviewing 16 executives who had been in some way objectively lauded for business ethics. An important finding of this research was the conclusion that “ethical leadership theory should broaden its perspectives on stakeholders”. This supports the importance of identifying end-users as one of the stakeholder constituents who are affected by ethical decision-making and the indirect impact
of executives who set the cultural stage for defining and reinforcing appropriate ethical behavior. Jones (1991) introduces the notion of ethical decision-making in an organizational context by defining moral intensity. His concept of moral intensity is bound up with the idea that one’s actions may do harm to another and that elements of proximity and probability of effect will impact action (Jones, 1991). He proposed that ethical issues can be framed in terms of six components of moral intensity: magnitude of consequences, social consensus, probability of effect, temporal immediacy, proximity, and concentration of effort. His work provides a potential roadmap for implementation teams if it can be determined that moral intensity on the part of the implementation team with respect to end users can be increased through decision-making methodology or organizational structure.

Chae, et al. (2005) have developed a model for decision support systems (DSS) design that incorporates an ethical perspective. This model expands problem-solving from focusing solely on technical issues to including a sensitivity to potential stakeholders affected by the problem to be solved. They note that DSS designers are de facto cast in the role of imposing their views on others and must ask questions to help to make explicit who they are affecting. They integrate work from ethical research streams with work from decision science.

We conclude with the clarion call from Johnson’s connecting of ethics and information technology with corporate excellence (2006). Johnson argues that the type of technology deployed and the way in which it is deployed reveals the organization’s moral compass because the technology has consequences. The conclusion from recognizing this duality is that in order to excel whether on the macro level of organizational success or on the smaller scale of information technology project success, the firm’s ethical values must be reflected in the technology chosen and in the way in which the technology is deployed and used.

**PROPOSED RESEARCH DESIGN**

In the proposed research, we combine end-user satisfaction findings with ethical theory. We are concerned with whether or not end users are treated ethically as a way of walking back to the ethical decisions that have to be made by the implementation team and its management. A critical question is how to determine whether or not an end-user has been treated unethically. We answer this question by borrowing from the sentiment Hippocrates expressed in *Of the Epidemics* (400 B.C.), “to do good or to do no harm.” Discovering evidence that end-users have been in some way harmed will constitute evidence that the implementation team and its management have performed an unethical act(s) in the deployment of the information system.

“Do no harm” is not a new concept in the ethical world. For instance, it has been invoked in understanding how ethics can enhance organizational privacy (Culnan and Williams, 2009). This changes our perspective of users, from viewing users as challenges to be overcome, resistant, needing motivation, or needing new behaviors (Varadaraj, M. and Goud, N., 2012) to considering end users as independent entities who can be negatively impacted and need to be protected. Culnan and Williams focus their recommendations on culture and governance; my goal is to develop support for making ethics process-based by incorporating ethical considerations into the decision-making process. The “do not harm” imperative includes an implicit nod to this approach since in order to do no harm, an assessment must be made as to whether or not harm might result from decisions made as part of a process. The goal of this research is to measure the impact by individuals within an organizational setting on other individuals in that same setting, creating an additional metric for assessing information systems projects and providing ethical validation for the accepted implementation methodology of including user input and involvement. A concern for the mitigation of possible harm done to end users could provide corporate leadership and implementation teams with new strategies for improving the implementation process and ultimately, the success and value of these projects.

How can we determine whether or not users have been harmed? The introduction of new information systems has consequence to employees due to the introduction of new technology in the form of hardware, software, and/or process change. The potential harm from the introduction of this change derives from the introduction of handicaps to employees that make it more difficult for them to do their jobs. If there is coherence in the organization and the metrics on which users are evaluated (essentially, how they are assessed in terms of doing their jobs well), then the creation of a mismatch between these metrics and the new system requirements will reflect harm having been done to users.

It is difficult to believe that implementation teams would consciously intend to harm users. However, by not including ethical consequences in the implementation methodology, it is quite possible that user harm is an unintended consequence. What factors might help the implementation team consciously strive to do no harm? Some possible factors are:

- ethical leadership that results in raising awareness on the part of the implementation team (Frisch and Huppenbauer, 2014),
- moral intensity that results in the implementation team feeling close to the users (Jones, 1991),
- alignment of implementation team goals with corporate mission and values (Johnson, 2006).
In this proposed mixed-methods research, a combination of interviews and surveys will be deployed. Corporate leadership will be surveyed to assist in understanding corporate mission, goals, and values. They will also be asked about guidance given to the implementation team: what were the imputed goals vs the actual strategies taken?

Implementation teams will be surveyed and a random sampling of team members will be interviewed as a follow-up. Team members will be surveyed to determine their knowledge of corporate values and how or whether they included corporate values in their technology and process change choices. Was there an intentional attempt to fully understand how users might be impacted, not as a function of the technology objective, but within the larger context of their overall jobs and evaluation metrics? Interviews will be used to tease out issues emerging from the surveys.

User surveys will address user perception of the alignment between how they are evaluated and their understanding of corporate values. They will also be asked to assess how well their job performance alignment was impacted by the implementation. Was the alignment better before implementation, after implementation, unchanged? These surveys will provide data designed to help implementation teams close the loop, discovering how well they performed in their attempts to treat users in an ethical manner. A series of questions will be used to create an Ethical Treatment Index (ETI). This empirical index will be designed to assess tangible indicators of unethical treatment of users such as the following:

- increased presence of work-arounds in obtaining information and/or in performing tasks,
- increased number of manual tasks,
- increased habitual rework,
- increased use of auxiliary technology outside of the information technology implemented (e.g., shadow spreadsheets),
- increased time required after the implementation to complete the same task than was required before the implementation,
- increased number of hours worked “off the clock,” and
- reduced user morale.

The questions would ask end users to compare their states before the information systems implementation with their states afterwards. Another important element in assessing end-user states is to distinguish as much as possible between the difficulties end users experience as a consequence of the learning curve and the difficulties they might experience as a consequence of system design.

An exploration will be made to see if questions from instruments used by Tarafdar et al and by Guimaraes et al. could be incorporated into the proposed Ethical Treatment Index. For instance, the constructs created by Tarafdar et al. (2011) include statements that are related to harm or no harm being done to end users such as “I am forced by this technology to do more work than I can handle” (relating to technostress creators) and “This technology helps to improve my productivity” (related to end-user productivity). The instrument used by Guimaraes et al. would also be examined for possible inclusion, in particular, questions relating to such topics as management project support and user involvement.

The analysis of the user surveys would be similar to that of research investigating factors affecting end-user satisfaction, substituting ethical treatment as expressed in the Ethical Treatment Index for the dependent variable in regression analysis. In addition, qualitative and quantitative analysis of data gathered from corporate leadership and implementation team members would be used to understand the degree of alignment with corporate values and degree of moral intensity of those impacting users.

CONCLUSION AND DISCUSSION

With this proposed research, I hope to uncover elements that can enrich existing literature concerning the relationship between successful information systems implementations and end user impacts by including an ethical perspective supported by an empirical measurement tool, the Ethical Treatment Index. Just as the various studies on end-user satisfaction have unveiled important tools to enable implementers to increase the likelihood of successful implementations, this research can provide an additional and essential element to the decision-making and implementation methodology chosen by corporate leadership as well as implementation teams. Adding the motivation to do no harm to end users not only provides a new set of questions to be asked; it can also allow implementation teams to better triage “must-have’s” advocated by end users by considering how they might be harmed if the “must-have’s” are not addressed seriously and appropriately.

Future aspects of this research could also address the element of risk. There may be times when there is no choice but to cause harm to some members of the community in order to benefit the overall firm. However, this should be a conscious decision made within an ethical context. The Belmont Report (1979) addresses principles guiding ethical research involving human subjects. Three of these principles are useful in thinking about the interaction among various parties involved in information systems implementations: 1) the principle of beneficence in which possible benefits are maximized while minimizing harms,
2) the principle of respect for persons which directs the avoidance of coercion, and 3) the principle of justice which promotes equity in sharing the load.

The Ethical Treatment Index holds promise for providing corporate leadership and information systems implementation teams with an empirical tool that can measure the extent to which organizations operationalize their values when introducing new technologies. Because it will be a quantitative measure, it could become an appropriate key performance indicator.

REFERENCES