Achieving Individual Adoption of E-Ordering Applications with a ‘Benefit Imbalance’

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Abstract: E-ordering systems are currently widely adopted on an organizational level. Attractive business cases, however, tend to deteriorate when intra-organizational individual adoption lags behind, i.e. when compliance of the intended individual behavior is not achieved in a timely fashion. This paper shows the findings of an in-depth case study aimed at identifying the effectiveness of interventions in speeding up and/or raising compliance to the intended behavior. Results show the need for enforcement or mandating system usage to overcome the ‘benefit imbalance’: individuals have to use a system to create an organizational benefit, even when they do not receive any direct gains. This results in initial system usage, however gaining the intended behavior, i.e. using the system in the ‘right’ way and to it’s full potential, requires additional interventions.

Keywords: Influence tactics, Adoption, Compliance, E-ordering.

1 Introduction

It is by now widely accepted by both academia and practitioners that E-ordering applications provide a potential benefit in terms of effectiveness and efficiency for purchasing processes (e.g. Boer et al. 2002). The potential benefits of these applications have been widely demonstrated in practice, showing shorter order cycle times and higher compliance with organizational contracts. In addition, the use of applications to support standardized purchasing processes can provide the input for spend analysis, and, in turn, contribute towards realizing purchasing objectives like supply base optimization or moving towards a centre-led purchasing organization (Harink 2003). From a purchasing perspective, highly attractive business cases for using e-ordering have been shown.
Attractive business cases, however, can ‘evaporate’ when the adoption by end-users lags behind. The benefits can only be achieved if and when the end-users adopt the tool and apply it successfully in their everyday work, i.e. using the system ‘right’ and to its full potential. This adoption of the ‘intended behavior’ is not self-evident. People are not keen on altering their current habits and can be generally reluctant to change. This especially applies to an intra-organizational setting where a top-down solution is pushed to the user level and where an apparent benefit is not experienced on an individual level. Individuals tend to minimize their effort to comply when they are not committed to the change. This is the case when a benefit imbalance occurs between organizational and user level. Here, organizational benefits, e.g. process optimization and control, coincide with an extra effort of the end-user population. This applies to many instances of e-ordering systems that are primarily designed to drive compliance to standardized processes (e.g. approval workflows, contract and policies) and provide input for spend analysis. In this paper we limit ourselves towards e-orderings systems that facilitate the procurement-to-pay processes and have the property of the ‘benefit imbalance’.

The effectiveness of ways to speed-up and/or raise the overall level of intra-organizational adoption is currently not clear. General change management principles can provide some guidance, however, practitioners often do not know when and what interventions are the most effective for different sub-groups in their target population. Practitioners generally agree that a communication program and training form a prerequisite for initial adoption, i.e. first usage. This is also widely supported in IS literature (Venkatesh, Speier 1999; Xia, Lee 2000; Robey et al. 2002; Yi and Davis 2003). However, it this does not necessarily lead towards to a satisfactory usage level and the intended behavior. Therefore, the question arises how to orchestrate follow-up interventions to speed-up or raise the current overall level of system usage to increase the breadth of usage and stimulate the ‘right way’ of usage. Due to a benefit imbalance, this also includes the question when to shift to more coercive tactics as pure persuasion might have limited effect. Practitioners recognize the difficulties with raising individual adoption of purchasing systems\(^{10}\).

The effectiveness of managerial interventions on individual adoption / usage has only limitedly been researched. The amount of studies focused on the adoption of buy-side applications (e.g. e-procurement), either proprietary or offered by a marketplace, is growing rapidly, but the focus remains on the applicability of different tools in different organizational situations. Individual adoption of these systems has not been touched. In general IT/IS literature, however, individual IT adoption has been researched profusely. A wide body of knowledge exists on the cognitive mechanisms leading towards individual adoption decision, with the

\(^{10}\) This was one of the major findings of a exploratory survey among 44 purchasing professionals in the Netherlands in September 2004.
Theory of Reasoned Action (Fishbein and Ajzen 1975), Theory of Planned Behavior (Ajzen 1991), Innovation Diffusion Theory (Rogers 1995), Technology Acceptance Model (Davis 1989) and the Unified Theory of Technology Acceptance and Usage (UTAUT; Venkatesh et al. 2003) as prime models. These models have been widely applied and have demonstrated their robustness and high explanatory power of adoption behavior (up to an $R^2$ of nearly 70). Still, these models provide little guidance as to how to influence the cognitions leading towards adoption (Jasperson et al. 2005). Notable exceptions include Bhattacharjee (1998, 2001, 2005). In addition, the link between an organizational decision to adopt a system and intra-organizational usage (Zaltman et al. 1974; Frambach, Schillwaert 2002) and the implications of forced adoption on individuals are yet to be fully explored (Ram and Yung 1991; Chae, Poole 2005).

This paper aims at addressing these gaps in the IT adoption literature, by assessing the effectiveness of interventions in speeding up or raising individual adoption of the ‘intended behavior’ by affecting the cognitions leading towards individual adoption. This is done in a post-organizational adoption-decision situation for e-ordering applications with a benefit imbalance. Special attention is given to the role of coercive tactics and the effectiveness of achieving ‘intended behavior’. The initial preposition is that these are needed to overcome the benefit imbalance, however addition interventions are needed to achieve the intended behavior.

The research consists of the development of a research framework followed by an in-depth case study. The framework is based on the UTAUT (Venkatesh et al, 2003) and ‘influence tactics’ (Venkatesh et al. 1995) and is used to analyze the case study. The case study is a US-based financial institution that implemented an e-ordering system for their requisitioning, approval and ordering processes using supplier-catalogues. 20 interviews are used as main data source. A longitudinal perspective is used to capture the time effects of different interventions.

After a brief literature review to establish a research framework, the case study is first described and then analyzed. Afterwards, the findings are related towards IT adoption research and managerial implications are drawn.

2 Research Framework

In this section a research framework is developed to assess the effectiveness of ‘interventions’ on individual adoption of the ‘intended behavior’ associated with the organizational adoption of an e-ordering system. The focus is thereby on an individual that is subjected to different interventions. The following premises are used to develop a research model:

- Interventions take place in a dyad of actors. Building on agency theory, the research is limited towards actor A as a ‘agent’ and actor B as ‘target’, where
actor A wishes to establish or raise the adoption of e-ordering by actor B. Actor A is presented with the choice of a (cost-) effective portfolio of interventions to persuade actor B towards EP adoption. This portfolio benefits from knowledge of the effectiveness of single and compound interventions, depending on the type of actor B and relations of actor A and B. Target individuals (actor B) are limited to actual end-users. The target population for e-ordering systems is operational purchasers, responsible for calling off orders within a contract. This can take place either in a purchasing department or in the business (e.g. secretary or management assistant).

- A cognitive mechanism precedes actual adoption behavior. Behavior cannot be influenced directly but is always mediated through this cognitive mechanism. The majority of research on adoption is focused on unraveling the cognitive mechanism. Over forty years of adoption research have culminated in the Unified Theory of Acceptance and Use of Technology (UTAUT) which shows a mechanism using four determinants (Venkatesh et al. 2003): perceived performance, effort expectancy, social influence, and facilitating conditions. These determinants are proposed to mediate all external factors. The perceived performance, effort expectancy, and social influence lead to a behavioral intention. In turn, the behavioral intention together with facilitating conditions lead to actual behavior.

- Input for this cognitive mechanism is the direct and indirect work environment of an individual: the work system (Jasperson et al, 2005). Actual usage experiences form a feedback loop on this work system as a learning cycle. Interventions from managers, experts, peers, and self-influence affect the work system and can lead to adoption. Interventions in the work system can ‘speed up the learning cycle’ by affecting the four determinants of the UTAUT.

- Individual characteristics moderate the way in which the four cognitive determinants lead towards actual adoption behavior. Venkatesh et al. (2003) include the following four moderators in their research: age, gender, experience, and voluntariness. Other research has shown a variety of other moderators that affect the cognitive adoption mechanism (e.g. Jeyaraj et al. 2004; Sun and Zhang 2005). In this research we presume that individual characteristics do not moderate the way in which interventions affect the cognitive determinants. In other words cognitive determinants can be affected in a similar manner irrespectively of the target.

- Interventions are defined as an activity between actor A and actor B directed towards influencing the behavior of actor B though the cognitive determinants. Interventions directed at work processes and changes (updates) of the system are excluded from this research. A single behavioral intervention targeted at the adoption of one actor A thereby contains three elements: activity, a persuasive content or influence tactic, and a source. The
Influence tactics are taken as a perspective on interventions as they are believed to permeate all activities from different sources and can be defined independently of each other. Influence tactics are ‘delivered’ through a portfolio of activities from various sources. Sources come from three generic categories: managers, experts and peers. Only influence tactics are analyzed in this study.

- Influence tactics are persuasive techniques or strategies people actively and passively apply to influence each other. Each influence tactic affects the cognition and consequently adoption behavior. Power theories have been used extensively in relation to the choice and application of certain influence tactics or measures. On the basis of resources availability and dependency, perceived power can be asserted towards reaching a desired change. Power can thereby been seen as a potential which is effectuated in certain influences. Research has primarily been directed at the choice and incidence of techniques from an agent perspective rather than the receptiveness and effect on a target. Several studies from Yukl and colleagues have resulted in a classification of influences (e.g. Yukl & Falbe, 1992). Both the classification and measurement scales have been refined for different purposes. Within the field of purchasing Farrell & Schroder (1996) and Venkatesh et al. (1995) tested the effectiveness of the influence tactics in the buying center. The latter takes a more managerial perspective, link to power basis, and recognizes the source as prime antecedent for the choice and effectiveness of a tactics. The six influence tactics from Venkatesh et al. (1995) are chosen for this research. They include: request, information exchange, recommendation, promise, threat, and legalistic plea.

The premises are integrated in a research framework. Central elements include the ‘influence tactics’ based on the work of Venkatesh et al. (1995) affecting the four determinants of the UTAUT (Venkatesh et al 2003).
In the next section the research framework is used to analyze the findings of a case study to elucidate the way in which influence tactics affect adoption behavior through a cognitive mechanism.

### 3 Case Study

A case study was selected in which different interventions, incorporating different influence tactics, where applied to achieve individual adoption of an e-ordering application with a benefit imbalance. An case study was identified that adheres to these criteria at a financial institution, where an e-ordering system was rolled out throughout the US during the period of 2001 to 2004. The effectiveness of the different influence tactics in affecting the cognitive determinants leading towards the adoption of ‘intended behavior’ is assessed in the case during this period using the research framework in this section. First a brief discussion of the means of data collections is given, followed by a description of the case study, and an analysis of the findings.

#### 3.1 Data Collection

The effectiveness of the different influence tactics in affecting the cognitive determinants leading towards the adoption of ‘intended behavior’ is assessed by means of interviews. A first round of interviews was used to create an understanding of the case context. Next two rounds of interviews were held with various participants in the roll-out and implementation of an e-ordering system. A reflective longitudinal approach is followed in each interview where the respondent was asked to narrate about the effects of interventions on cognitions and adoption behavior of end-users. A post-hoc analysis of the findings took place using the research framework: ‘influence tactics’ and ‘cognitive determinants’ where not asked directly, but extracted from the narrations of the respondents.

<table>
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<td>Set up of reflective research project</td>
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<td>Data</td>
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<td>Project Manager (1);</td>
<td>14</td>
<td>Initial findings</td>
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3.2 Case Description

The case was set at an international financial services organization offering banking, insurance and asset management.

In 2000 a program was initiated to leverage global procurement and redesign the purchasing governance structure. One of the major outcomes was the initiation of corporate procurement and implementing a ‘center-led’ procurement organization. This means that there is one procurement organization, a CPO reporting to the board, Category Procurement Managers (CPM) responsible for cross-organizational sourcing projects, and de-central / local execution. Besides the restructuring of procurement, an organizational vision also began to emerge on e-business and the potential for enhancing work processes. This vision was also applied to the domain of procurement and (financial) room was created for business transformation incorporating various e-initiatives.

By the end of 2000 the decision was taken to start a global eProcurement Program. The newly found corporate procurement department should thereby deliver corporate contracts with suppliers and that the Global eProcurement Program ensures the delivery of an eProcurement solution to the business units. The senior executive purchasing officer (SEO), took the ownership of this project for the North American region and initiated a local project to roll-out an e-ordering system.

The project was set within an ongoing change effort to integrate different organizations that were recently acquired in North America to form the Executive Center (EC) Americas. Activities (like strategic sourcing) that were not related to the buying of goods were assigned to a central procurement organization of EC Americas. The business objectives for the EC Americas was to ensure that all personnel buy form preferred suppliers and keep track of all purchases. The use of internet-based procurement software to facilitate these objectives was recognized and the following high-level objectives were formulated for the e-ordering project:
enforce compliance with strategic corporate contracts, keep record of historical procurement data, which will serve as input to future contract negotiations (sourcing process), and offer a user friendly, easy to understand user interface to allow purchases to take place on the lowest decentralized organizational level as possible through a controlled (standardized) process.

This required a purchasing system that facilitates all buying activities through a single portal, uses a workflow engine for approvals, and generates an electronic Purchasing Order (PO) based on approved requisitions. In a later stage, invoice transactions should be delivered electronically (all invoices were paper based), electronic invoices should be automatically matched against the electronic PO and paid electronically. Here, we only focus on the first stage of electronic order generation and processing. On an organizational level, this would already greatly improve procurement cycle times, standardize requisitioning and approval policies and processes, enhance the audit trail, generate process and contract control, and generate better information for accounts payable and strategic sourcing. The intended behavior for the end-users is that everybody should issue their own purchasing request in the system and await an approval flow (which could include gatekeepers, budget owners and sourcing professionals) before a PO is issued. This is a substantial change on an individual end-user level: they not only have to learn how to operate a new system, but also have to get used to a new way of working and asking permission for their purchasing needs. The latter requires a shift of mindset.

3.2 Case Results

3.2.1 Case process

The project followed an aggressive timeline for the roll-out. The following phases can be recognized:

- **Setting the stage.** A time-frame of fourteen weeks was followed for system specification and technical implementation. A corporate system (Ariba Buyer) was previously selected by the global eProcurement program and was used in the US project. A ‘war room’ was set up with a small group of consultants and a project team to specify the system for the North American region. Activities included the design of the requisition and approval processes for different categories, determining the relevant commodity categories for catalogs and non-catalogs requests, setting rules (on-behalf, gatekeepers, non-catalog, fiscal and editing rules), data preparation (‘scrubbing’ financial and HRM data), enabling supplier connectivity (utilizing the Ariba Supplier-Network), setting up the IT infrastructure and implementing the technical roll-out to a pilot location. The team realized the prerequisites for a pilot within the given time-frame.
A pilot location was selected based on its size and previous experience with purchasing systems. Office supplies, promotional items, stationary and business cards were selected for the first wave of commodity groups to be supported by the system. Ten catalogs and approximately 170 non-catalog suppliers were added. The user community consisted of 75 users and 25 approvers. Training was supported on-site by the Ariba project team members.

The North American deployment was based on three dimensions: users, locations and content. A geographical roll-out took place in a four month period in the beginning of 2002. Locations were added by ‘loading’ relevant data and processes and a large scale communication program was initiated to stress the business benefits and the expectations of end-users. The deployment was beset with minor technical issues (e.g. workflow definitions, data discrepancies), however, still progressed quite rapidly. While the technical system was up and running, the user community adoption was minimal: “they simply ignored the system and we had very low usage rates”. People did attend training sessions, but the follow-up was disappointing. An extensive communication program was initiated with road-shows, mailings and reminders. Again, the end-users were indifferent. The target population had expanded to nearly 1800 requisitioners and approvers, with approximately 400 heavy users. Apparently, convincing this group with persuasive communication to start using the system was very challenging. At this point the SEO decided to increase the pressure on the user community and warnings were issued that a mandate would be coming. A small part kicked in, but the majority ignored the message.

II Enforcement. On August 1st 2002 a mandate was issued for system usage. The SEO was also in charge of Account Payable (AP) and therefore had a tool to enforce a behavioral change: “the responsibility for account payable gave the SEO a ‘hammer’ to drive compliance.” At first, a ‘soft mandate’ was issued were warnings were given: “we’ll process it this time, but next time you’ll need a PO to get it paid.” When this had limited effect, a shift was made to a ‘hard mandate’: “we’re not going to pay it; order it again”. Rejection sheets were made and orders were sent back. This had a dramatic effect on system usage and the compliance rate shot up. Unfortunately, the facilitating conditions were not in place sufficiently to support the sharp increase in system usage.

Processes and the organization were ready, but the sourcing organization was not. There was a corporate rule that PO’s could only be paid with a contract in place. People started to complain when it took a long time to process orders as the backlog increased: “in October ’02 the sourcing requests began to stack up; we had over 500 requests (with different priority / importance) just waiting to get processed. Naturally, also suppliers did not appreciate the sudden need for a contract, especially when goods and services were already
delivered and invoiced. Standard contracts and templates were used, but still negotiation with the suppliers took some time. A lot of exceptions had to be made to process rush orders or invoices that were overdue. “The difficulties in organizing the sourcing and contracting processes were reflected on the system: people complained a lot!”

In addition, flaws in the system definition began to emerge once the usage started to build up. In some cases the approval flows were too elaborate and therefore slowed the process. Some people also ignored their approvers role: “some of the same people that supported it from the top, resisted the approval mail when 20 mails came in their mailbox daily.” In addition, data issues caused annoyance (e.g. wrong supplier data). Naturally, user feedback was used to make enhancements: workflows were revised; supervisor roles were removed and thresholds were revisited (raised). Still, the initial attitude was set and people were disappointed in the overall system performance.

“We had a pretty extensive communication program: one before the big-bang (March ’02) and one afterwards (October ’02). The sessions were used as a platform for airing complaints. The SEO opened the session by confronting the issues and then moved on to discuss ways to address them.” “The personal leadership of the SEO played a crucial role: he has a strong personality; he anticipated reactions, and was able to set out a clear line and follow it. He did not explicitly use the top-management support in communication and setting out the project: he outlined a clear and concise plan using AP to build pressure on the user community.”

After the hard mandate the complaints and ‘noise’ around eProcurement project exploded. The director of the support organization described that “they passionately hated us”. The project manager commented that: “people in the organization always tend to attribute their complaints to a certain high-profile project and this was definitely one of them”. The mandate highly improved the system usage, however, complaints intensified and escalated all the way up to the CEO.

**III User dependence.** “We changed our approach towards the end-users into an internal customer approach. We started holding their hand and walking them through the system. Customer satisfaction level went up to about 70-80%, but people started to rely heavily on the back-office support.” A shift took place from a ‘hard mandate’ towards putting in extra effort in root-cause analysis and helping people move through the learning cycle. The support team helped them go through the motion of actually entering an order in the system. The ‘service approach’ helped in the organizational perspective on purchasing, however, it also caused an overshoot and made people dependent. People started to rely on the help and took advantage of it: “oh...someone at sourcing will find the right code”. This resulted in a situation were the support organization almost became a requisitioning agent themselves. Naturally, this did not contribute towards an effective purchasing process, as the support
director commented: “we caused ineffective behavior of both the end-users as well as the support organization”.

- **IV Intended Use.** The end-users generally did not show the intended behavior and generally saw the system as a “barrier to get their invoices paid.” While the system usage level was close to 100%, nearly 80% of the orders were processed ‘backwards’: first an order was placed at the supplier and when the invoice arrived, an order was entered in the system to get the invoice paid. In this way the approval-flows were circumvented: “they missed the whole point of up-front control of expenses.” Also, approvers (budget ID owners) did not set a good example and a lot of on-behalf approval took place. Additional interventions were initiated to create the shift towards ordering with upfront approval. Again persuasive interventions were initiated: feedback sessions were held with frequent users, approvers were targeted for communication and training, reports of order-flows were issued and rules were refined. The shift towards up-front approval progressed very slowly. Only recently a ‘next-level’ mandate was initiated, making backward processing troublesome: the ‘silent PO’ function (order generated in the system that is not sent to the supplier) was abolished and invoices were only paid when they were preceded by a PO.

Meanwhile, mid 2003 the effort to on-board supplier was intensified through closer collaboration with sourcing. A standard process was followed and all relevant suppliers were mailed. In 2004 there were 650 suppliers added (through ASN) and the catalogs were increased to 16.

Currently, approximately 500 million (3% of the total spend) passes through the system, covering over 60% of all transactions. Ongoing extensions are made to the system: “we have an ongoing list of wishes and requirements”. System usage remains high, although still exceptions are made for the backward processing. Approximately, 1800 people use the system. Further system support for purchasing are now added on to the system, e.g. electronic invoicing, support for P-cards and a contract management system.

### 3.2.1 Case analysis

The framework is used to analyze the findings of the case study. First the findings are discussed related to the four cognitive determinants: performance expectancy, effort expectancy, social influence and facilitating conditions. Then the effects of influences are summarized.

Findings concerning Performance Expectancy:

- Mandating is the only way to the tackle the ‘benefit imbalance’. Persuading people is very challenging due to the limited attractiveness of the user-level
business case: The attention to communication messages was limited: “we suffer from an information overload.” The majority of the potential users only started to pay attention / learn the system as soon as it was mandated. Mandating got the compliance up, but did not facilitate a ‘change of mindset’

- Prerequisites for the mandate should have been in place to ensure satisfactory performance. The first experience is crucial in matching expectations: elaborate approval flows, longer order cycle times and more process steps did not help. ‘Fine-tuning’ policies and working on the sourcing backlog helped, but the initial attitude was set. Also ‘denying’ PO’s (both ‘soft’ and ‘hard’) was not appreciated at all. The escalation of complaints caused organizational unrest and ways to circumvent the system / policies were abundant (e.g. PO after invoice; finding valid exception reasons).

Findings concerning Effort Expectancy:

- There were some initial complaints about the speed and unclear interfaces. Users got frustrated with ‘denies’ of PO’s (especially infrequent users). The (non-catalog) users had to learn additional processes / standards (difference between GL, budget, commodity code). Issues concerning the policies / workflow / sourcing-backlog were attributed to the system. The project attracted a lot of attention and got blamed for other organizational issues (the other way around also happened: infrastructure outsourcing distracted attention)

- Training does not lead to adoption, but it paves the road. Training before the mandate hardly invoked any reaction. The motivation for learning behavior was based on the hard mandate (some thought it was mandatory too). “There is an interesting difference between work and home situation with respect to IT adoption: at work people expect that they are walked trough every step; at home people figure it out themselves. Chances are that 70% of the people order their books online, they can learn how to use a comparable system at work.” “People hate learning a new system in a working context; they are simply too busy or lack the patience for non-core activities”

Findings concerning Social Influence:

- Peer-influence was very strong. Peers had a substantial influence on each other, both in a negative and positive way. Gossip and informal contact kept a negative attitude alive. The gossip that actually surfaced in complaints / calls to the helpdesk are likely to only be a fraction of the unrest that was going on. On the other hand, people helped each other after the mandate: “we couldn’t do it without each other”.

- The role of ‘gatekeepers’ (first-line approvers; close to the business) played an important role in feedback-learning. Budget ID owners supported the system but did not show any role model behavior. While they were targeted
for communication, they did not change their behavior towards requisitioning ("they just dropped invoices and expected us <admin. assist> to get it paid").

- AP was a strong ‘tool’ to drive compliance. The hierarchical line was only limitedly involved (there was plenty of awareness, but support was minimal): the power basis for change lay in the joint responsibility of the SEO for Procurement and AP.

Findings concerning Facilitating Conditions:

- A smooth roll-out was hindered by the backlog in sourcing requests and the extra effort that it took to clear this up. Based on the interviews, a potential is recognized for modular and on-demand training for self-learning behavior. In this case the tools for ‘self-learning’ were limited and trainings were pushed instead of pulled.

- An overshoot occurred in the facilitating conditions when the support organization took over part of the requisitioning. People started to rely on the help and take advantage of it.

The interpretation of the findings in terms of cognitive determinants and influences from the research framework is shown in Figure 2

**Figure 2: Case analysis**

In the following section the findings are discussed.
4 Discussion

This paper shows the importance of mandating system usage to achieve higher and/or faster intra-organizational system adoption of e-ordering systems with a ‘benefit imbalance’. The case shows that a mandate gets near instant system compliance. Persuasion and ‘internal marketing’ is very challenging due to the limited attractiveness of adoption at the user-level. Evaluation with the SEO revealed his experience with this difficulty: “we tried to soften the blow of the mandate by an extensive communication program, but this really did not buy me anything.” The potential users only really started to pay attention when the mandate was effectuated.

The prerequisites should have been in place before the mandate was initiated. Not only the sourcing organization should have been more prepared, but also the definition of could have been more defined. One of the system engineers mentioned that “the system is only as effective as the process around it.” The first experience is crucial in matching expectations and a disappointment can lead to a lot of complaints. A high level of unrest had to be endured to solve issues that could have been prevented. Again the SEO commented: “a lot of work could have been done up-front to prevent some of the anger.” In retrospect, the project leader commented: “the real question is how we survived this project. It was a project with high expectations, but caused a lot of organizational disturbance. We were able to demonstrate some of the advantages on a managerial level, so that top management gave us some room to clear up the mess.”

While the mandate gave near instant compliance when the facilitating conditions were in place, but additional interventions were needed to achieve intended end-user behavior. Mere complaints had to be changed into commitment to the new way of working. The overshoot in helping people left room for minimal compliance and ways to circumvent the system. Six end-users commented in the interviews that they “tried to use the old way till it was absolutely impossible.” The additional mandate was relatively effective in shifting end-users to up-front approval. The period of moving people to the intended end-user behavior took a long time: “there were so many issues to solve that our clean up took very long: we just tried to survive instead of substantially improving the purchasing processes.”

Analysis of the case with the framework shows support for the initial proposition that pressure, here threat and legalistic plea lead towards adoption through the ‘social influence’ determinant. In a later phase, the ‘facilitating conditions’ were addressed by the influence tactics ‘recommendation’ and ‘legalistic plea’. The framework served a useful purpose in this paper for structuring the case findings and initial support for the role of influence tactics in manipulating the cognitive determinants leading to adoption. To our knowledge, the framework in this paper is the first to combine social persuasion theories and technology adoption theories.
to answer the question how to influence adoption processes. We have only touched the complexity of this topic in this paper, but further research would be necessary to unraveling the effectiveness of individual and compound influence tactics on the cognitive determinants.

The topic has substantial practical relevance: companies have invested large sums of money in e-ordering systems and are looking for ways to capitalize on their investments by getting quicker and more intra-organizational system usage. The findings in this paper give some practical advice, but also raise a lot of new questions. For instance, what is the role of preparatory communication? Is it really required for a mandate or can it be minimized? How prepared can you be for a ‘big bang’, when designing processes in a ‘war room’? How much organizational unrest is acceptable to achieve faster compliance? What is the role of training? What is an acceptable measure for system acceptance and adoption to encompass the intended behavior (when system usage figures cover up different form of misuse)? How should multiple stakeholders be balanced and when is multiple stakeholder success achieved?

This paper enters a largely unexplored research area in IT adoption research and presents some leads for relevant follow-up research. More findings and implications are shared and discussed at the RSEEEM conference.

References


Chae, B.; Poole, M.S. (2005): Mandates and technology acceptance: A tale of two enterprise technologies. Journal of Strategic Information Systems (accepted for publication)


Sun, H.; Zhang, P. (2005): The role of moderating factors in technology acceptance. International Journal of Human-Computer Studies (forthcoming)


