Discussion Paper

Because Everybody is Different: Towards Understanding the Acceptance of Organizational IT Standards

by

Thomas Müller¹, Sven Dittes², Frederik Ahlemann¹, Nils Urbach, Stefan Smolnik²

in: Proceedings of the 48th Hawaii International Conference on System Sciences (HICSS), Kauai, Hawaii, January 2015

¹ University of Duisburg-Essen
² University of Hagen
Abstract
Owing to growing complexity and rising costs of organizational information technology, standards are essential for companies to manage and maintain control over their IT. Insights from practice indicate that the crucial aspect regarding the success of IT standards is their implementation and enforcement. Thus, we derive the following research question: Which factors influence the intention to accept and use organizational IT standards on an individual level? Embedded as a deductive study in the acceptance research stream, we also conducted a supplementary field study incorporating nine interviews to answer this question. Our main result is a conceptual model covering the most influential factors regarding the acceptance of organizational IT standards. Our work has a twofold contribution: First, we advance the research field on organizational IT standards by establishing links to the field of acceptance research and offering explanations for individual acceptance of those standards. Second, our developed model serves as a basis for managing organizational IT standardization.

1. Introduction
Standardizing organizational information technology (IT) infrastructure and processes is stated as one of the most important activities of today’s companies [1]. Since IT is used and embedded in more and more business areas within companies, the complexity and costs of organizational IT infrastructures and processes are continuously rising. In this context, IT standardization represents a possible means to reduce complexity and maintain control over the organizational IT. Research suggests that IT standardization can help to considerably reduce the overall IT costs of a company [2]. On that note, van Wessel [3] describes three abstract levels for possible standardization potentials within a company: technological standards (e.g. hardware and software standards), data standards, and process standards.

Given the practical importance of organizational IT standards and standardization efforts, we carried out a database-driven literature search using the keywords IT standardization, organizational IT standards, IT policies, and IT rules in order to assess the current body of knowledge in this field. We found that research on the management, governance and enforcement of IT standards within organizations is relatively limited [4]. Additionally, we found no generally accepted definition of what constitutes an organizational IT standard. For the purpose of our study, we incorporate all different abstract levels of standards and thus define an organizational IT standard as any written rule or guideline within the IT department of an organization such as technological standards, data standards and process standards. These standards must be based on a clear motivation aiming for a harmonization, optimization, or security of material and nonmaterial objects when dealing with repeating business processes. A standard is defined, released, and revised by an authority seeking to create an advantage for a particular interest group. As a consequence, we define IT standardization as the process of implementing and enforcing such an IT standard within an organization.

Previous studies indicate that many standardization efforts fail suffering from low acceptance rates among staff and rather superficial use [5]. Bird [6] acknowledges the importance of standard enforcement within companies: he states that the crucial point – when it comes to IT standardization – is that it is sometimes too easy for employees to use non-standard components [6]. Therefore, it is essential for companies to implement management and governance
mechanisms to enforce the usage of IT standards in order to achieve their standardization goals. However, before designing such management mechanisms, it is important to first understand the drivers of employee’s acceptance towards organizational IT standards – because without having a deep understanding of employee’s acceptance behavior towards organizational IT standards, it is not possible to design efficient management mechanisms in order to raise the acceptance rate. Therefore it is especially important to understand the cognitive drivers from an employee’s perspective. Thus, we derive following research question:

Q1: Which factors influence an employee’s intention to accept and use an organizational IT standard?

Behavioral research stresses the influence of personality traits on human intentions (e.g. [7]). Furthermore, practice also shows that every employee is different and therefore it is not possible to derive management mechanisms which work for all employees in the same manner. Therefore, we include our second research question:

Q2: What are personality traits and job characteristics moderating the influential factors on employee’s acceptance towards organizational IT standards?

The aim of our study is to discover the most important influential factors from an employee’s perspective when it comes to accepting or rejecting organizational IT standards by building a perception-based model. Since our research questions seek for explaining employee’s acceptance towards organizational IT standards, we embed our study in the acceptance research stream by deriving a first understanding of the phenomenon. Building on this knowledge, we designed a field study approach based on interviews, resulting in a conceptual model that explains IT standard acceptance on an individual level.

2. Research Method

In order to explain the phenomenon of employee’s acceptance towards organizational IT standards, we choose mainly a deductive research approach using existing literature but supplemented by a field study using interviews. Thus we conducted an incremental research approach: First, we derived a conceptual understanding from existing literature. By owing to the rich body of knowledge in the acceptance research stream, we used existing literature and theories to gain a deeper understanding of the phenomenon IT standards acceptance as well as to strengthen our research’s internal validity and generalizability. As a result, we embed our study in the acceptance research stream by using two of the most commonly used theories in IS acceptance research: the technology acceptance model (TAM) [8] and the theory of planned behavior (TPB) [9]. These underlying theories helped to shape our understanding of IT standards acceptance and provided the basic ideas for deducing our ideas and conceptualizations.

After deducing a first conceptual model, we designed a field study in order to refine our model and strengthen the findings from literature. Benbasat et al. [10] stress that it is especially important to analyze different actor’s experiences in the context of action, when analyzing complex and practice based problems. Considering this, we carried out a field study based on interviews in order to discover the problems and influential factors of IT standardization – as recommended by Klein and Myers [11]. We conducted semi-structured interviews by closely following the recommendations of Eisenhardt [12]. After each interview round, both the conceptual model and the interview guideline was revised and adjusted, considering the newly acquired knowledge. We conducted this iterative process until the last interview did not reveal any new insights as well as strengthened our conceptual model by assuring that the final conceptual model includes the most important influential factors.

Our interview guideline consists of two parts: the first part of the interview is based on open questions in order to explore new and relevant concepts that are important in practice and therefore crucial for IT standards acceptance. The second part of the interview seeks to strengthen the already acquired knowledge by presenting the latest version of the conceptual model to the interviewee. The interviewee is asked to evaluate each concept’s importance. The study sample consists of nine interviews with experienced IT professionals and experts from practice (see Table 1). We searched for both IT leaders and managers who are in charge of standardization activities in the company as well as employees most likely affected by the IT standardization, such as IT support people and system developers. We also chose interviewees from seven different companies varying in industry, size and business structure in order to achieve a certain level of generalizability. The interviews were conducted in German language and took 30 to 45 minutes each. Every interview was recorded and then transcribed. As proposed by Weston et al. [13], the transcript was reviewed by the interviewee to avoid a wrong or incomplete description of the interview content. After the interviewees had confirmed their interview transcripts, the results were analyzed in detail.
Table 1. Interviewee Information

<table>
<thead>
<tr>
<th>Number</th>
<th>Role</th>
<th>Business domain</th>
<th>Work description and responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>IT team leader</td>
<td>IT</td>
<td>IT team lead in the Technical Design Authority and Platform Technology department. Responsible for the design and building of middleware technologies.</td>
</tr>
<tr>
<td>2</td>
<td>IT manager</td>
<td>Consulting</td>
<td>Leading and organization of a business consulting team that includes several IT consultants.</td>
</tr>
<tr>
<td>3</td>
<td>IT auditor</td>
<td>Software</td>
<td>Responsible for the functional implementation of IT systems regarding organizational policies (e.g. security issues) and project controlling.</td>
</tr>
<tr>
<td>4</td>
<td>IT team leader</td>
<td>Insurance</td>
<td>Responsible for the quality arrangement and assurance of data exchange between the company and its customers.</td>
</tr>
<tr>
<td>5</td>
<td>CIO</td>
<td>Energy</td>
<td>Administration of the organizational IT, divided into these departments: infrastructure, SAP services, technical data handling, support applications, and IT administration.</td>
</tr>
<tr>
<td>6</td>
<td>CEO</td>
<td>Software</td>
<td>Leading position in the organization and driver of the design of technology usage.</td>
</tr>
<tr>
<td>7</td>
<td>SAP developer</td>
<td>Consulting</td>
<td>Design and implementation of customer-oriented SAP solutions.</td>
</tr>
<tr>
<td>8</td>
<td>CIO</td>
<td>Construction industry</td>
<td>Responsible for the multinational IT infrastructure and the country-specific IT business needs, and main driver of the IT standardization.</td>
</tr>
<tr>
<td>9</td>
<td>IT support</td>
<td>Consulting</td>
<td>IT support for a consultant team regarding administrative and development activities.</td>
</tr>
</tbody>
</table>

All extracted quotes were collected in a database for the purpose of coding and categorization. We arranged and sorted similar expressions and rated whether the statement has an agreeing and positive or negative and contradictory intention, compared to the latest knowledge and understanding of the phenomenon. The ordered statements were used to clarify whether the knowledge acquired during our literature study and prior interviews could be confirmed or should be revised.

3. Conceptual Model

In the following, we describe the final conceptual model in detail regarding the concepts and relationships by deriving them from the literature supplemented by selected quotes from our interview study which were translated into English.

The idea of considering the intention to perform a certain behavior in order to understand actual behavior goes back to Fishbein and Ajzen [14], who conceptualized and measured the intention, and disclosed a strong relationship between a person’s intention and their behavior. This idea has been transferred into the TPB [9] and the TAM [8]. Behavioral intention is closely related with the attitude towards a behavior, and represents the emotional volition impact concerning a desirable behavior [9, 14]. Since there is strong empirical evidence for the predictive relationship between intention and actual behavior [8], we expect intention towards the usage and acceptance of an IT standard as a suitable determinant. Thus, we propose:

Proposition 1: The intention to use a standard is positively associated with the actual usage of a standard.

3.1. Influential Factors on the Acceptance of Organizational IT Standards

The literature on user behavior indicates that perceived behavioral control is an important determinant of the intention to perform a certain behavior [9]. It states that the perception of control is of higher interest than the actual control, and represents
the perceived capabilities of performing the particular behavior. This idea finds a similar application in the self-efficacy theory [15]. The underlying assumption indicates that people are more likely to successfully perform a certain behavior when they perceive their coping capabilities as sufficient. To the contrary, if people estimate their coping capabilities as insufficient, they are very likely to avoid or reject a particular behavior. Since this idea of considering coping capabilities to understand and predict final behavior has already been proved with empirical evidence, we expect perceived behavioral control to be a positive determinant of IT standard acceptance. We suggest that people who score high in perceived behavioral control towards their capabilities to handle an IT standard will have a positive relationship to their intention to use an IT standard. This theory-based assumption could also be observed during our interviews. The following statement underlines perceived behavioral control’s positive effect on the intention to use an IT standard. An IT team leader stated: “It is important to consider if one is able to understand and handle an IT standard. Only then employees will accept a new standard.” We therefore propose:

Proposition 2: Perceived behavioral control is positively associated with the intention to use a standard.

When understanding the intention to perform a certain behavior, Ortiz de Guinea and Markus [16] consider the personal interest in the outcome as a relevant determinant. This line of thought follows a similar TAM concept called perceived usefulness [8]. This concept describes the perception of a potential work improvement when applying a particular behavior. Hence, when people perceive that the application of a certain behavior is more useful than their former behavior, and they are able to receive additional value, they are very likely to perform this behavior. In contrast, when they perceive that the application of a behavior does not have any additional usefulness or benefit, they tend to reject or ignore it. Since this concept has significant empirical support within TAM [8], we suggest that individual benefit is also a positive determinant of the intention to use an IT standard. Therefore, when an IT standard is able to provide an additional value for the individual while applying it, the individual benefit has a positive effect on the individual’s intention to use an IT standard. The following statement by a CEO indicates support for the theoretical idea and highlights the importance of the individual benefit concept: “An employee wants to understand the context of his actions and therefore needs to know his individual benefit in order to assess the importance of his work.” Thus, we propose:

Proposition 3: Individual benefit is positively associated with the intention to use a standard.

Considering the resulting benefit from applying a certain behavior, we propose to consider the personal benefit as well as the departmental or organizational benefit. Venkatesh and Davis [17] followed a similar idea and included job relevance into their TAM2. Job relevance describes the extent to which a behavior supports reaching one’s job goals. While every job has an expected output, which should support the organization in reaching its strategic business goals, we generalize job relevance in our research. An IT standard is able to create its maximum benefit when every involved individual applies it. We therefore suggest that people will have a positive effect on their intention to use an IT standard when they consider the organizational benefit when determining their application of this IT standard. The collected interview data also shows this link between organizational benefit and intention to use an IT standard. A CIO notes: “Another main motivation is defined throughout my management perspective and yields at the organizational benefit. Needless to say, a standardized IT environment can only decrease costs when it has a wide acceptance and usage within the organization. Only if every department is following our guidelines, we are able to decrease the infrastructure costs, license costs, personal costs, process costs, and so on.” We therefore propose:

Proposition 4: Organizational benefit is positively associated with the intention to use a standard.

The literature on usage behavior suggests considering social influence as a useful determinant when investigating the influences on the intention to perform a certain behavior. Fishbein and Ajzen [14] conceptualize social norms in their approach, and indicate that the motivation to conform to the social environment is a strong predictor of the intention to perform a certain behavior. Ajzen [9] adopts a similar idea in his TPB via subjective norm. This determinant addresses the social pressure that influences the decision to apply or avoid a certain behavior. We expect the social influence from direct co-workers to have a noticeable positive influence on the intention to use an IT standard. We suggest that the social pressure that takes effect when a group of co-workers applies an IT standard has a significant influence on the intention to use this IT standard, because the motivation to conform to the peer group is driven by the fear to be on
one’s own. The interview data does not pinpoint a clear tendency regarding the peer group social influence, although some statements describe a positive relationship and others describe a negative relationship. As long as we are unable to highlight a clear tendency, we follow our theoretical assumption. We therefore propose:

Proposition 5: Peer group social influence is positively associated with the intention to use a standard.

Proposition 6: Supervisor social influence is positively associated with the intention to use a standard.

A study by Leonard-Barton and Deschamps [18] indicates that supervisors can have a significant influence on actual IT usage and are responsible to monitor employees’ IT usage and behavior. Another study by Jaspersen et al. [19] adopts this idea and confirms potential supervisor influence on usage behavior. As a result of these findings, we suggest that there is a positive relationship between a supervisor’s social influence and the intention to use an IT standard. Owing to the fact that a supervisor is responsible for his or her department or work group, he or she is interested in having all guidelines and policies such as IT standards accepted and applied. Our interview data also shows a positive link between supervisor social influence and the intention to use an organizational IT standard. The following statement of a CIO describes the exemplary function of a supervisor: “In the end, every supervisor and manager must also adopt an organizational IT standard. I think their influence can only occur through their behavior and the degree to which they are able to provide plausible explanations for the benefits and advantages.” We therefore propose that the supervisor has a positive effect on individuals’ IT standard acceptance when he or she is able to display a positive example regarding acceptance behavior:

Proposition 7: Change of work routines is negatively associated with the intention to use a standard.

3.2. The Moderating Role of Personality Traits and Job Characteristics

The idea of explaining human behavior through personality traits dates back to the 1930s. Allport and Odbert [22] introduced a foundational approach with a comprehensive set of terms that describe human personality. Tupes and Christal [23] continued this approach and decreased this set to a five-factor model. This approach did not enjoy much attention until Norman [24] and Goldberg [25] adopted this idea and made progress. The result is the so-called big five factor model, which includes extroversion, agreeableness, conscientiousness, emotional stability, and openness as the five major dimensions. Openness describes the personal interest in learning and adapting new innovations. People who score low in openness to experience are more traditional and are satisfied with their current spectrum of behavior. In contrast, people who score high in openness to experience are eager to investigate new things [26]. A recent study investigates the relationships between the big five personality model and TAM. Devaraj et al. [27] proved that it is promising to consider openness when determining technology acceptance because they were able to indicate a positive relationship between openness and intention to use. In the context of our study, we assume that individuals with established work routines are not very open to new behavior and have a reduced intention to use an organizational IT standard. Hence, we introduce the construct openness and propose that it has a negative moderating influence on the relationship between change of work routines and the intention to use an IT standard. Our collected interview data supports this assumption. A CEO stated: “In order to use an organizational IT standard, it is necessary that every employee is open to new experiences and changing situations. [...] All in all, openness refers to the ability of being able to cope with new challenges and therefore embodies a major influence.” This statement supports our conceptualization of change of work routines. We therefore propose:
Proposition 8: Openness is a negative moderator of the relationship between change of work routines and the intention to use a standard.

The second concept borrowed from the big five factor model is agreeableness [23], which describes an individual’s ability to comply with others and to understand their points of view. Individuals low in agreeableness are unwilling or unable to compromise and are contrary. People high in agreeableness are cooperative and collaborating in order to reach a solution that is agreed upon. Devaraj et al. [27] propose that an individual’s ability to be compliant with a social group has a significant influence on the intention to perform a behavior, and thus conceptualized agreeableness as a moderating effect on the relationship between subjective norms and the intention to use. They indicated empirical evidence for this moderating relationship. We suggest that agreeableness has a positive moderating effect on both the relationship between peer group social influence and the intention to use a standard and the relationship between supervisor social influence and the intention to use a standard, and that it intensifies organizational compliance. An IT manager points to this positive relationship: “A huge company with several thousand employees cannot consider every single interest. It is essential to have employees with a certain amount of agreeableness in order to organize them as one company that is looking for a positive business result.” Thus, we propose:

Proposition 9: Agreeableness is a positive moderator of (a) the relationship between peer group social influence and the intention to use a standard, and (b) the relationship between supervisor social influence and the intention to use a standard.

The third concept borrowed from the big five factor model is conscientiousness [23], which refers to an individual’s reliability and accuracy. Individuals with a high degree of conscientiousness are very careful, well organized, perform work dependably and precisely. The other way round, individuals who are less conscientious are untrustworthy, jumbled and unmindful. Conscientiousness embodies an intrinsic motivation for individuals to improve their performance and therefore, these individuals conduct great effort and are able to reflect whether a given technology can enhance their individual working situation [27]. In the context of our research, we propose that conscientiousness acts as a negative moderator towards the relationship between perceived behavioral control and the intention to use a standard. This derives from the assumption that individuals, who are not convinced that they are able to perform a certain behavior regarding the intention to use an organizational IT standard, are negatively influenced by their conscientiousness thus they do not reflect whether the application of a certain IT standard can enhance their work. They will probably not achieve a compliant behavior. In contrary, individuals who score high on the perceived behavioral control regarding an organizational IT standard are not affected by the negative influence of conscientiousness. The collected interview data is able to support this theoretical assumption while an exemplary statement of a CIO states: “I assume the conscientiousness to be an explanation for employees not to adopt a new IT standard. I have observed this several times that employees did so and as a consequence it created a negative influence. Their conscientiousness is closely coupled with their lacking openness to change”. This statement stresses the low willingness of individuals to accept and apply change and underlines the theoretical idea. Thus, we propose:

Proposition 10: Conscientiousness is a negative moderator of the relationship between perceived behavioral control and the intention to use a standard.

Furthermore, we conceptualize the potential influence of the hierarchical position in the organization, which can affect the intention to use an organizational IT standard. Zmud [28] notes that especially IT managers and supervisors should act as catalysts for their department and the whole organization. They are thus responsible for the implementation and support of a certain behavior and should set an example. We therefore propose that level of command has a positive influence on the relationship between perceived organizational benefit and the intention to use a standard, because every supervisor and manager is more likely to be responsible for his or her department or team successfully applying an IT standard. Level of command is likely to have a negative influence on the relationship between peer group social influence and the intention to use a standard because we suggest that the higher an individual’s level of command is, the higher his or her decisions independence is compared to other co-workers on his or her command level. The collected data underlines our assumption. The following statement by an IT team leader describes this relationship: “The position within the organization has an influence and thus defines the point of view. The higher the position and level of command is, the more an individual is likely to have a more distinct perception of potential benefits.” We therefore propose:
Proposition 11: Level of command is (a) a positive moderator of the relationship between organizational benefit and the intention to use a standard, and (b) a negative moderator of the relationship between peer group social influence and the intention to use a standard.

The last construct – experience – refers to the accumulated knowledge gathered with past behavior [29]. Many studies seek to identify the influence of experience to the intention to perform a certain behavior. Furthermore, the idea of conceptualizing experience as an indirect influence has been adopted by – for instance – Venkatesh and Davis [17] and their TAM2 as well as by Venkatesh et al. [29] and their unified theory of acceptance and use of technology (UTAUT). Their conclusion is that experiences tend to make people think in a more rational way when assessing the potential benefits of a particular behavior because they are able to compare the benefits with their already experienced benefits and have a lower perception of social influences [29]. As a result, we define experience as the aggregated knowledge regarding past behavior and suggest that individuals with distinct experience are more likely to be able to also consider other aspects when defining their intention to use an IT standard. We propose that experience has a positive effect on the relationship between organizational benefit and the intention to use a standard because aggregated knowledge from past behavior can clearly indicate the organizational benefits that arise when applying an IT standard. We also propose that experience has a positive moderating influence on the relationship between change of work routines and the intention to use a standard because the rational way of assessing an IT standard can positively affect automatic and unconscious habitual behavior. The empirical feedback indicates that experience acts as a negative moderator on change of work routines and the intention to use a standard, since experienced individuals tend to reject change because they have gained their experience through their former behavior.
and do not want to change. A statement by a CIO describes this negative link: “Sadly, there are only a few employees who support standardization through their gained experience. In fact, many employees with distinct expertise are resistant to change and reject a lot of changing approaches.” To address this issue, we modified our proposition and construct experience as a negative moderator towards change of work routines. Thus, we propose:

**Proposition 12**: Experience is (a) a positive moderator of the relationship between organizational benefit and the intention to use a standard, and (b) a negative moderator of the relationship between change of work routines and the intention to use a standard.

Figure 1 shows our study’s final results by displaying the influential concepts when dealing with organizational IT standards acceptance. The second part of the interviews indicates that the most influential concepts leading to the intention to use a standard are the individual benefit and the moderating concept of openness.

### 4. Discussion and Conclusion

This study investigates factors that influence individual acceptance of organizational IT standards. The unit of analysis is the individual IT standards user. Our research builds on the IS acceptance literature stream and the qualitative empirical data we collected in a field study. The resulting conceptual model includes 6 concepts influencing the intention to use organizational IT standards and 5 concepts moderating these influential factors.

Our research has some limitations that need to be considered. The number of nine interviews with subject matter experts represents a relatively small convenience sample. Nevertheless, we are confident that our research approach and our sample allow for analytical generalizability and can serve as a starting point for further research in this area. Our aim was to develop a perception-based model on an individual level based on employee’s cognition and affection for a particular IT standard. Hereby we aimed at firstly identifying the most important influential factors from an employee’s perspective when it comes to accepting and using organizational IT standards. Based on these identified factors, further research is necessary to corroborate our findings. A confirmatory survey with a larger sample might be a fruitful path for continuing this research stream [30, 31]. Along these lines, it is necessary to develop measurement models for the concepts uncovered and developed in this paper. Owing to the underlying research streams this research builds on, we suggest that IT standard acceptance is the major impact that defines the resulting usage or resistance. However, future research might analyze whether there are additional factors worth being considered when understanding and explaining the actual IT standard usage. Furthermore, our study only considers the individual level of IT standardization. However, our interview study also indicates that there are also some crucial concepts regarding the organizational level – such as the embedding in the organizational strategy – that influence the acceptance of organizational IT standards. We therefore suggest a further development of our study resulting in a multilevel conceptual model.

Finally, our research shows several contributions to the theoretical body of knowledge. To our knowledge, it is the first attempt to conceptualize the individual-level antecedents, explaining employee’s acceptance towards organizational IT standards. In this context, we do not only draw on well-known constructs from the underlying theoretical base, we also link these to variables describing an individual’s personality traits and job characteristics. In this regard, our model not only captures conscious cognitive processes but also automatic behavior, which extends the scope of usual technology acceptance models. Additionally, our research is also interesting for practitioners. Our final conceptual model shows the most important influential factors of employees’ acceptance of IT standards. This knowledge, together with existing literature on this topic [eg. 32] can be used in practice to design efficient change programs, management processes and governance mechanisms in order to enforce and raise the acceptance rate of organizational IT standards.

### 5. References


