

2009

# Analyzing National Differences in IT Adoption Between Culturally Close Countries - A Conceptual Model

Alexander von Setten

*University of Bamberg*, alexander.von-setten@ubi-bamberg.de

Daniel Beimborn

*Otto Friedrich University*, daniel.beimborn@uni-bamberg.de

Follow this and additional works at: <http://aisel.aisnet.org/amcis2009>

## Recommended Citation

Setten, Alexander von and Beimborn, Daniel, "Analyzing National Differences in IT Adoption Between Culturally Close Countries - A Conceptual Model" (2009). *AMCIS 2009 Proceedings*. 565.

<http://aisel.aisnet.org/amcis2009/565>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISEL). It has been accepted for inclusion in AMCIS 2009 Proceedings by an authorized administrator of AIS Electronic Library (AISEL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# Analyzing National Differences in IT Adoption between Culturally Close Countries – A Conceptual Model<sup>1</sup>

**Alexander von Stetten**

University of Bamberg

alexander.von-stetten@uni-bamberg.de

**Daniel Beimborn**

University of Bamberg

daniel.beimborn@uni-bamberg.de

## ABSTRACT

Cross-cultural research in IT adoption has so far most often concentrated on disparities in IT adoption between countries with highly different culture profiles. Instead, we argue that there are also differences between cultural closely related countries (which, e.g., are geographically close and share the same language) which need to be understood. The question raises whether the dimensions of culture applied in prior literature to analyze IT adoption in highly distinct cultures are sufficient for explaining the differences in a close culture context as well or whether a more differentiated model of cultural dimensions has to be drawn. Based on indicative results from a three-country comparison within Central Europe, we find substantial differences in adoption drivers (Perceived Usefulness, Perceived Ease of Use) which seem to be impacted by “micro-cultural” disparities. As a consequence, we develop a conceptual model based on human values and cross-national differences in IT adoption which will allow us to analyze and explain these differences in future research.

## Keywords (Required)

IT Adoption, Culture, Uncertainty Avoidance, Tradition, Germany, Switzerland, Austria

## INTRODUCTION

*“Toward the end of the second millennium of the Christian era [...] a technological revolution, centered around information technologies, began to reshape, at accelerated pace, the material basis of society. Economies throughout the world have become globally interdependent, introducing a new form of relationship between economy, state, and society, in a system of variable geometry”* (Castells, 1996). These words point out two aspects constituting the research stream of cross-cultural research in Information Systems (IS), namely technological revolution and global interdependence. The interaction of both represents the core-ingredient of IS research in a cross-cultural context.

In recent years, a vast amount of research has been conducted concerning the impact of national culture values on classical IS themes such as information systems development (e.g. Kumar, Bjørn-Andersen, 1990, Walsham, 2002, Huang and Trauth, 2008), IT adoption and diffusion (e.g. Hasan and Ditsa, 1999, Loch, Straub, and Kamel, 2003, McCoy, Galetta, and King, 2007), or IT use and outcomes (e.g. Leidner, Carlsson, Elam, and Corrales, 1999, Ishman, Pegels, Sanders, 2001, Rose, Evaristo, and Straub, 2003). However, when considering cross-cultural research about IT more thoroughly, one notices the lack of comparisons between cultural closely related countries. Up to now, researchers mostly have compared countries with highly different cultural backgrounds, like for instance Japan vs. U.S. (Straub, 1994), Japan vs. Switzerland vs. U.S. (Gefen and Straub, 1997, Straub, Keil, and Brenner, 1997), Korea vs. U.S. (Calhoun, Teng, and Cheon, 2002), or Germany vs. India (Dibbern et al. 2008). On the other side, we find increasing demands for understanding cultural differences between close neighbors. For one reason, inter-country collaboration does also (and sometimes even more) take place between firms located in neighboring countries (e.g. in Nearshore outsourcing relationships which get more and more popular at least in Europe). Second, companies from European countries like Switzerland and Austria increasingly recruit knowledge workers from abroad, with the largest part of them coming from the neighboring country Germany (von Stetten, Eckhardt, Laumer, König, Weitzel, and von Westarp 2008, Eckhardt, Laumer, Lippert, Weitzel, and König, 2008). Therefore, we want to contribute to closing the gap in cross-cultural research concerning culturally close countries by exploring national differences in IT adoption in a micro-cultural context as *“[c]ultural differences do not only exist with regard to faraway, exotic countries”* (Trompenaars, 1993). Consequently, our research question is the following:

*Can cross-national differences in IT adoption be explained by cultural disparities, even if the countries considered are cultural closely related?*

---

<sup>1</sup> An earlier version of this paper was presented as “On the way towards an explanation of differences in IS adoption between German speaking countries: Comparing Switzerland, Austria and Germany” at the 16<sup>th</sup> Annual Cross-Cultural Research in Information Systems (CCRIS) Meeting, Paris, 2008.

The remainder is organized as follows. First, the existing literature about human values and cross-national differences in IT adoption that serves as theoretical background is reviewed. The subsequent section presents results showing the existence of culture-based disparities concerning IT adoption in a “micro-cultural” context. Afterwards, we develop a research framework by proposing four hypotheses aiming to find explanations for national differences in IT adoption between culturally close countries. Finally, the last section outlines our future plans for testing the proposed hypotheses.

## THEORETICAL BACKGROUND

### Human Values and Cross-National Differences

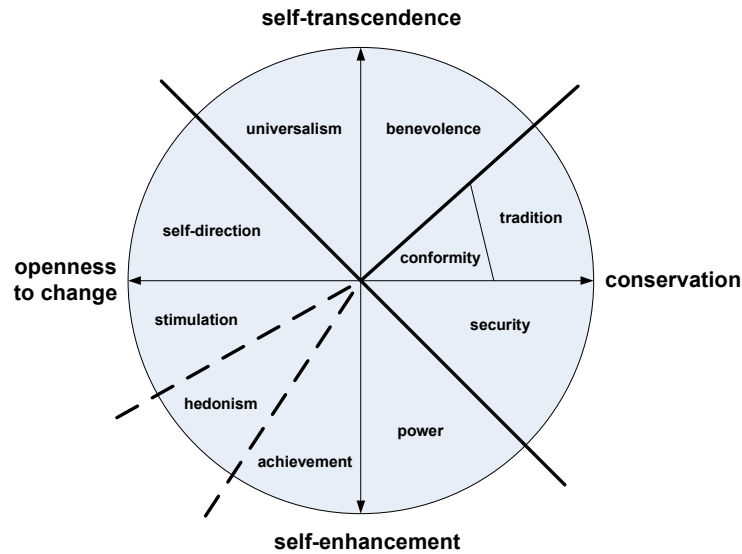
*“[Culture is] the material and social values of any group of people”* (Thomas, 1937). This is just one example out of a compilation of 164 definitions of culture by Kroeber and Kluckhohn (1952). Among many others the authors attempt to give an understanding of what culture is, by classifying different views of this concept. The vast amount of definitions points out the enormous ambiguity of the term “*culture*”. On the way to a conceptualization of the general concept of culture, Trompenaars (1993) established a widely accepted model that comprises three layers: Implicit basic assumptions (1), norms and values (2), and artefacts and products (3). Beside Trompenaars’ (1993) model, other well-known manifestations of culture (e.g. Schein’s (1985) model or Hofstede’s (1991) onion diagram) all share one cognitive component when conceptualizing culture, i.e. values. Referring to Rokeach (1973), a (human) value is “*an enduring belief that a specific mode of conduct or end-state of existence is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence*”.

Human values as defined above serve as a basis for analyzing cultural differences between certain social groups (like e.g. nations). Since we discuss cultural differences on a national level within this paper, three widely accepted concepts about (national) differences in value priorities are introduced in the following.

The first one is given by Hofstede (1991) who refers to national culture as one out of six “*layers of mental programming*” (others being, e.g. regional, religious, or social class levels). With regard to the value concept, a value, according to Hofstede (1980), is “*a broad tendency to prefer certain states of affairs over others*”. In order to be able to measure cultural differences between nations, Hofstede presented four value dimensions (power distance (1), collectivism/individualism (2), femininity/masculinity (3), and uncertainty avoidance (4)) in a first step (Hofstede, 1980) and a fifth dimension (long-/short-term orientation) later (Hofstede, 1991). Until today, those dimensions of national culture have been analyzed, extended, modified and utilized by a large number of researchers.

Trompenaars (1993) distinguishes between the levels of national, corporate, and professional culture, whereby national culture describes the highest level. Focusing on national culture, he examines three categories of problems every culture has to deal with, i.e. relationships with people, attitudes to time, and attitudes to the environment. Elaborating on reasons for cultural differences, Trompenaars argues that a culture distinguishes itself from another culture by the way it manages those categories. In this context Trompenaars (1993) identified seven fundamental dimensions of cultural values that are causative for cultural diversity. Concerning the first category (relationships with people), there are five value dimensions that greatly influence the ways people interact with each other, namely universalism/particularism (1), individualism/collectivism (2), neutral/emotional (3), diffuse/specific (4), and achievement/ascription (5). Associated with attitudes to time, Trompenaars applied time perspective (past/present/future and sequential/synchronous) as his sixth value dimension. Finally internal/external control is the value orientation related to the third category (attitudes to the environment).

Beside Hofstede (1980 and 1991) and Trompenaars (1993), Schwartz (1992) provided another much-noticed concept about cross-cultural differences in value priorities. Defining values as “[...] (a) *concepts or beliefs, (b) about desirable end states or behaviors, (c) that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance.*” (Schwartz and Bilsky, 1987), Schwartz (1992) provided ten motivational types of values which are organized in four so called “*higher order value types*”: *openness to change* (combining stimulation, hedonism (partially) and self-direction), *conservation* (combining security, conformity, and tradition), *self-enhancement* (combining power, hedonism (partially), and achievement), and *self-transcendence* (combining universalism and benevolence). As hedonism shares some elements with openness to change and self-enhancement it is linked to both of them. Relationships between the motivational value types are outlined by means of two basic bipolar dimensions which juxtapose the higher order value types in opposition. The first pair of dimensions within this two-dimensional structure is “*openness to change vs. conservation*”, the second “*self-enhancement vs. self-transcendence*”. Schwartz’s (1992) model of relations among motivational types of values, higher order value types, and bipolar value dimensions is illustrated in Figure 1.



**Figure 1: Theoretical model of relations among motivational types of values, higher order value types, and bipolar value dimensions (Schwartz, 1992)**

The richness of cultural values presented by Hofstede, Schwartz, and Trompenaars serves as an ideal basis for analyzing cultural differences across nations. Beside the authors themselves (Hofstede, 1980, Schwartz 1992, Trompenaars 1993), a large number of other researchers adopted single or multiple values out of this sample within their research works on cross-cultural disparities between cultures. Some of these studies applying values for analyzing cross-cultural differences in the specific area of IS adoption are introduced in the following section.

**IT Adoption and National Culture**

Most of the studies reviewed in the context of relationships between national culture and IT adoption describe those relationships with regard to Hofstede’s (1980) value dimensions and their scores. Hofstede gained these value scores within an extensive survey (he received more than 116,000 questionnaires) from 1967 until 1973 among international employees of IBM from 72 different countries (Hofstede, 1980).

Straub (1994) identified differences in diffusion of email and telefax between Japan and the U.S. in an early study about cross-cultural differences in IS adoption and diffusion. The author found that Japanese knowledge workers are less likely to adopt and use email than knowledge workers from the U.S. due to high uncertainty avoidance in the Japanese culture compared to the U.S. resulting in a preference for more socially present and information rich ways of communication than email. A few years later Straub et al. (1997) presented one of the first attempts to validate the Technology Acceptance Model (TAM) (Davis, 1986) outside the U.S. It was hypothesized that high uncertainty avoidance (UA), power distance (PD), and masculinity as well as low individualism result in an avoidance of computer-based and hence less socially present media such as email. The authors indicated that TAM is predictive concerning the use of email in the U.S. and in Switzerland but not in Japan since Japan shows markedly higher UA, larger PD, stronger masculinity, and lower individualism regarding to Hofstede (1980). A recent work of McCoy et al. (2007) revisits this topic by demanding need for caution when applying TAM outside the U.S. as the model has been developed in the U.S. and therefore may be biased by U.S. culture. Results from a survey among more than 10,000 students from 25 different countries indicate that low UA, high masculinity, high PD, and high collectivism reduce the applicability of the TAM.

Bandyopadhyay and Fraccastoro (2007) take up this issue by aiming “to contribute to IT acceptance research by advancing the understanding of user technology acceptance in a non-U.S. culture” (i.e. India). The authors investigate the effect of culture as a dimension of the social influence variable of the UTAUT (Unified Theory of Acceptance and Use of Technology) (Venkatesh, Morris, Davis, and Davis, 2003). It is suggested that social pressure for an individual to perform a

behavior is influenced by cultural differences in the effect that this social pressure is higher in a more collectivistic than in an individualistic society. By measuring the UTAUT in India, a more collectivistic country than the U.S., the authors confirm that social influence significantly affects consumers' intention to use a particular information system. Summarizing this research work, social influence has an effect on the intention to use IT, whereby this effect differs by culture.

Another quantitative study investigating cross-cultural disparities between nations has been given by Png, Tan, and Wee (2001) who demonstrate that companies from high UA countries are less likely to adopt IT. Moreover, the survey among 153 enterprises from 24 countries shows that PD, in contrast to UA, does not have any significant effect on IT adoption.

Problems arising due to the circumstance that IT is mostly designed in developed countries (and thus biased by the culture of those countries) and then transferred to developing countries are discussed by Hill, Loch, Straub, and El-Sheshai (1998) in a qualitative study, using the example of the Arab culture. Within the interviews conducted, cultural aspects in Arab countries affecting IT transfer negatively such as a preference for face-to-face communication and a strong adherence of traditional values were identified. In their qualitative cultural comparison of Australia, the Middle East, and West Africa, the same topic has been identified by Hasan and Ditsa (1998) as an issue where the cultural significance of IT is crucial: *"Information Technology is predominantly a Western product, having evolved within it and taking on values of that culture. This may make certain products inappropriate for other cultures"*. Loch et al. (2003) take the same line in their multi-method paper approaching the Internet diffusion in the Arab world. Empirical results in this study show a strong effect of social norms and technological cultivation on individual usage of the Internet and a strong effect of technological cultivation on organizational usage of the Internet. Within the qualitative analysis, factors such as culture conflict and language were identified as discouraging for the acceptance of the Internet in the Arab world (Loch et al. 2003).

Concerning cultural values in one particular country rather than comparing those values between different nations, Thatcher, Stepina, Srite, and Liu (2003) show a mediating effect of UA and PD on personal innovativeness with information technology (PIIT) such that *"individuals who are high in uncertainty avoidance and power distance may be less likely to be willing to innovate or experiment with information technology"*. Srite, Thatcher, and Galy (2008) follow a similar direction in their current paper that analyzes the influence of within-culture variation in one particular country (i.e. the U.S.) on IT acceptance for the first time. Results of their survey among 350 students in the U.S. indicate that innovativeness regarding IT is lower, computer anxiety is higher, and computer self-efficacy is lower if an individual reports high levels of femininity compared to an individual who reported high levels of masculinity. Thus support is provided for the hypothesis that within-culture variance in values affects the acceptance of IT.

## **INDICATIONS FOR CULTURE-BASED DIFFERENCES IN IT ADOPTION IN CULTURAL CLOSELY RELATED ENVIRONMENTS**

The research we intend to conduct focuses on explaining differences in IT adoption resulting from cultural disparities in cultural closely related regions. Beside a lack in empirical research, focusing on this particular issue, our aim was motivated by a survey on adoption and usage of IT for HR recruiting in companies in Central Europe.

In 2007, we conducted a survey about IT usage in the human resource area among the 1,000 largest companies by turnover in Germany, Austria, and Switzerland, giving us the opportunity for drawing comparisons between these countries. The questionnaires were addressed to the person responsible for the HR recruiting process in the respective company. We attained the following response rates: Germany: 15.6 %, Austria: 10.2 %, Switzerland: 10.1 %<sup>2</sup>. The survey purely considered IT usage in the human resource area and has not been motivated by research questions on culture up to now. Nevertheless, we found several hints indicating that the usage of IT respectively of the Internet is different between these countries. The following paragraphs present these indications and motivate our further research aims. The participants of the survey were asked to state the fraction of employment ads posted via different HR marketing channels, being print media, online job portals, or the own company website.

Figure 2 indicates substantial differences in using these different channels in the observed countries. Germany shows significantly more usage of company websites and online job portals than Austria and Switzerland<sup>34</sup>. Correspondingly, the usage of print media is significantly lower in Germany than in the other two countries. Further, we did not find significant differences between Switzerland and Austria regarding the usage of online job portals and company websites.

<sup>2</sup> Only companies from the German speaking part of Switzerland were considered.

<sup>3</sup> All stated differences are at least significant at a .02 level using the t-Test.

<sup>4</sup> Controlling for company size did not show a significant effect.

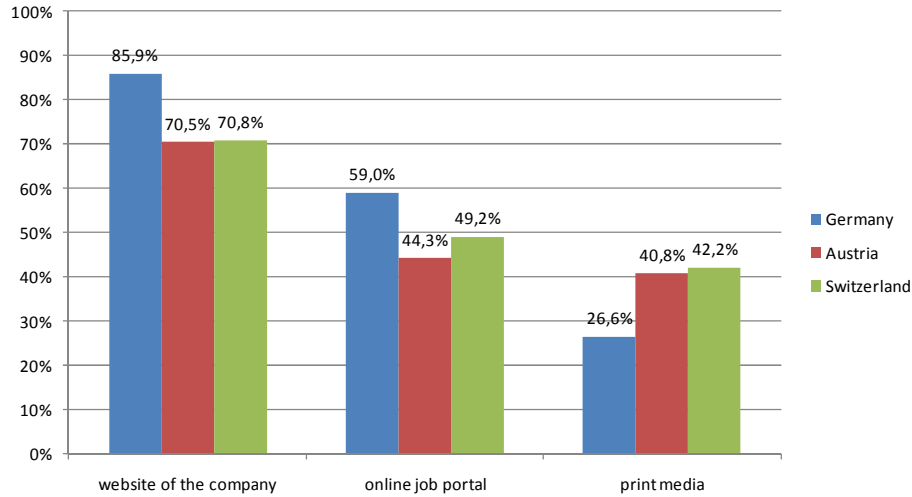


Figure 2: Percentages of employment ads in different channels for recruiting in the year 2007

Since we are aware that the samples of the Top 1,000 firms in the particular countries differ significantly in firm size, we tested whether this circumstance may be the reason for the observed differences in the usage of HR marketing channels. However, regression tests did not show a significant impact of firm size on adoption.

In addition, we gathered information about the level of Internet access in the respective countries as the stated differences could also be explained by a lower level of Internet access in Austria and Switzerland compared to Germany. With regard to the level of Internet access in enterprises in the year 2007, Eurostat (2007) reports only very small differences between Germany and Austria (97 percent of the enterprises in Austria and 95 percent in Germany had Internet access; data for Switzerland was not available). In terms of Internet access in households, the Swiss Federal Agency of Statistics (bfs, 2007) states access rates of about 70 percent (Switzerland and Germany) and 60 percent (Austria). Due to the relative analogy of these results, we can assume that the observed differences in using the Internet for HR marketing are not caused by a varying diffusion of Internet access.

Asking for reasons for those differences in IT adoption, we took the chance to apply the Technology Acceptance Model (TAM) (Davis, 1986) since the key constructs of the TAM (Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Behavioral Intention to Use (BI), and Usage) have been measured within the same questionnaire as well. We tested the TAM using the Partial Least Squares approach (smartPLS software package (Ringle et al., 2007)).

The following table lists the indicators applied within our questionnaire.

Construct	Indicator
PEOU	Advertising job ads in the Internet is easy to learn.
	Advertising job ads in the Internet is clearly understandable.
	Advertising job ads in the Internet proceeds always the way I expect it to do.
PU	Job ads in the Internet simplify recruiting.
	Job ads in the Internet enhance the effectivity in personnel marketing.
	Job ads in the Internet speed up recruiting.
	Job ads in the Internet are useful for recruiting.
BI	It is our plan to advertise job ads in the Internet in the future.
	Advertising job ads in the Internet will continue to be of high importance for our company.
	It is our plan to advertise job ads in the Internet as often as possible within HR marketing.
Usage	Within the HR marketing of our company online channels are often deployed.
	Within the HR marketing of our company online job portals are often deployed.

**Table 1: Indicators**

For testing differences in the TAM constructs (PEOU, PU, BI, Usage), we compared the distributions of the resulting latent scores by applying the Mann-Whitney-Test. The following table shows the results<sup>5</sup>.

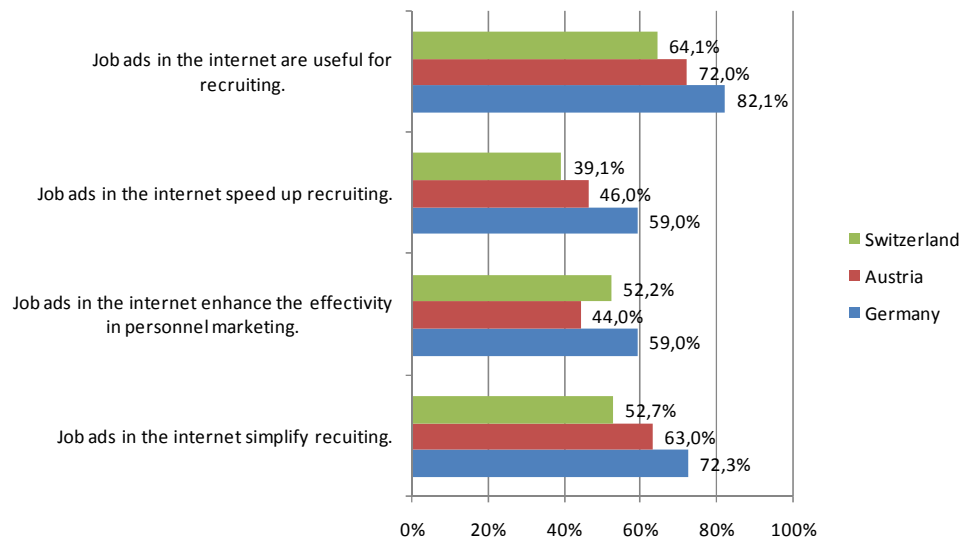
Construct	Construct scores (mean, st. dev.)			Difference in score mean (Z, p)		
	Germany (GE)	Austria (AU)	Switzerland (CH)	Difference GE – AU	Difference GE – CH	Difference AU – CH
Perceived usefulness	4.20, .90	3.81, 1.17	3.75, 1.14	<b>-2.61, .009</b>	<b>-3.09, .002</b>	-.45, .650
Perceived ease of use	3.66, .95	3.53, 1.07	3.57, .94	-.47, .642	-.07, .947	-.02, .982
Intention	4.02, 1.22	3.50, 1.56	3.37, 1.53	<b>-3.05, .002</b>	<b>-3.12, .002</b>	-.58, .561
Usage (of electronic channels)	3.87, 1.19	3.33, 1.46	3.18, 1.71	<b>-2.79, .005</b>	<b>-2.68, .007</b>	-.15, .879

Unstandardized scores on a 7pt-Likert scale (1 = low, 7 = high).  
Significant differences marked in **bold**.

**Table 2: Results of Country Group Comparison**

We found significant differences concerning PU, Intention, and Usage. In Germany, the data show significantly higher values for those constructs than in Austria and Switzerland. By contrast, there are not any significant differences between the two latter countries although the values are slightly higher in Austria. With regard to PEOU we did not find significant differences between these countries.

The differences in PU are highlighted again in the following figure.



**Figure 3: Perceived Usefulness of Job Ads in the Internet in the year 2007<sup>6</sup>**

<sup>5</sup> Again, controlling for company size did not show a significant effect.

<sup>6</sup> Bars represent fraction of respondents who totally agreed, agreed, or rather agreed on a 7pt-Likert scale.

Hence, based on our results, we find Germany to be more strongly using electronic channels for HR marketing than Austria, which shows still slightly stronger usage than Switzerland. Based on the TAM argumentation, these differences in usage are driven by a differing level of PU.

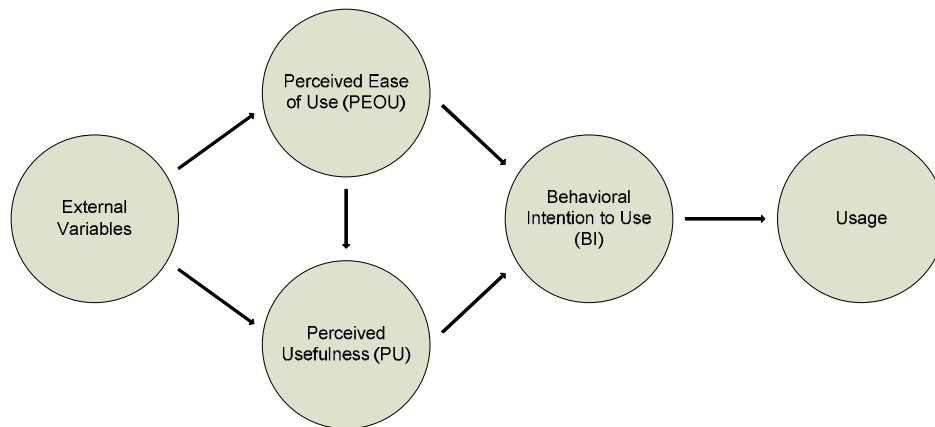
Within several unstructured interviews with HR managers from Switzerland, we tried to find some first explanations for the observed inter-country differences. In those conversations statements like the following ones were submitted several times:

- *“Germans have a more open mind about the adoption of new technologies or software solutions than we do because we rely more on traditional values.”*
- *“If a software solution works properly we will not replace it by a more modern software solution in the first place. We will monitor how the new software works in other companies first and think about adopting it afterwards.”*
- *“Germans are always faster than Swiss people - not only on highways. But that’s not always advantageous. We first of all wait and watch narrowly what happens and come to an informed decision later.”*

Summarizing, we found differences between Germany, Switzerland and Austria concerning the adoption and usage of electronic channels for HR marketing though these countries show quite similar scores with regard to Hofstede’s (1980) value indices. To our knowledge there has been no research about differences in adoption and usage of information technology between such closely related countries, yet. By means of the following research approach we attempt to identify possible reasons for those differences.

**MODEL DEVELOPMENT**

To measure the adoption of IT we apply the Technology Acceptance Model (TAM) (Davis, 1986) as illustrated in Figure 4. Based on the TAM, disparities in IT usage can be explained by different levels of PU and/or PEOU. PU and PEOU in turn are determined by different external variables (such as demographic properties of the potential user, external pressure, media, and many more). In the following, the original TAM as depicted in Figure 4 will be extended by Uncertainty Avoidance and Tradition which act as external variables affecting PEOU (Uncertainty Avoidance) and PU (Uncertainty Avoidance and Tradition).



**Figure 4: The Technology Acceptance Model (TAM)**

Numerous studies found the TAM to be a good predictor for IT usage (e.g. Adams, Nelson, and Todd, 1992, Hendrickson, Massey, and Cronan, 1993, Saznja, 1996). Similarly, our results demonstrated validity and reliability of the TAM regarding the acceptance of online channels for HR marketing in Germany, Austria, and Switzerland. Consequently, our first hypothesis with regard to our research model outlined in Figure 5 is the following:

*H1: The key arguments of the TAM (i.e. PEOU influences PU, and in turn, both, PU and PEOU influence Behavioral Intention to Use) will hold in Germany, Austria, and Switzerland.*



Despite the fact that the general key arguments of the TAM held in the countries considered, our data presented above showed different levels of IT adoption between Germany, Austria, and Switzerland. In the following, we argue that these disparities arise from differences in the mentioned countries concerning the value dimensions Uncertainty Avoidance (UA) (Hofstede, 1980) and Tradition (Schwartz, 1992). Values like the two ones stated can be considered as external variables in the TAM context and are thus antecedents to PU and PEOU (Srite et al., 2008, Veiga, Floyd, and Dechant, 2001).

Developing hypotheses relating UA to the TAM, we first of all refer to Leidner and Kayworth (2006) who remark a “general support for the hypothesis that greater uncertainty avoidance will be associated with less adoption and diffusion of IT”. Considering the statement of Hasan and Ditsa (1998) that “high UA cultures may only adopt ‘safe’ older IT” or the one of Jarvenpaa and Leidner (1998) that “uncertainty avoidance is associated with an orientation towards the past” against the background of the exploratory interviews cited above indicates a higher level of UA in Switzerland than in Germany. The interviewees proposed differences in UA to be one reason for the observed disparities in IT adoption between those countries. Hence, we intend to explain the effect of UA on IT usage by proposing an impact of UA on its determinants (PU and PEOU). Correspondingly, Veiga et al. (2001) hypothesize that “in high uncertainty avoidance cultures the rate of individual IT skill acquisition (learning) will be lower, resulting in lower levels of perceived ease of use” and that “in high uncertainty avoidance cultures users will be reluctant to participate in specifying features that make the system easy to use so that, when the system is implemented, such users are more likely to perceive that the system is difficult to use”. This corresponds to Straub et al. (1997) who mention that “knowledge workers in high UAI cultures should [...] perceive computer-based media to be less useful and harder to use than those in low UAI cultures”. In accordance, we propose that:

*H2: Higher Uncertainty Avoidance will result in a lower level of Perceived Ease of Use.*

*H3: Higher Uncertainty Avoidance will result in a lower level of Perceived Usefulness.*

Beside UA, Tradition is another cultural value that can be extracted from the cited statements of the Swiss managers. Schwartz (1992) refers to “respect, commitment, and acceptance of the customs and ideas that one’s culture or religion impose on the individual” as the motivational goal of tradition values. Thereby, tradition is part of the higher order value type Conservation which is characterized by preserving the status quo and providing certainty in relationships with close others, institutions, and traditions (Schwartz, 1992). Based on this definition, Conservation can be linked to conservatism that “results in the adherence of traditional work practices” according to Veiga et al. (2001). In addition, Hill et al. (1998) mention that “loyalty to national traditions appeared to be an impediment to the acceptance of IT”. With regard to our fourth hypothesis, we again refer to Veiga et al. (2001) who state that “conservatism is most likely to express itself in how an individual evaluates the usefulness of a technology because usefulness is judged in terms of the system’s effect on work processes and outcomes. New IT almost always involves new ways of doing work and, if ‘new’ is seen as being ‘inappropriate’, then IT is likely to be seen as a poor fit with accepted ways of doing things”. The same authors mention that “conservatism [...] results in the adherence of traditional work practices”. Based on both, these arguments and the statements of the Swiss managers cited above, we propose:

*H4: Higher adherence of traditional values will result in a lower level of PU.*

The hypotheses developed before are summarized in Figure 5.

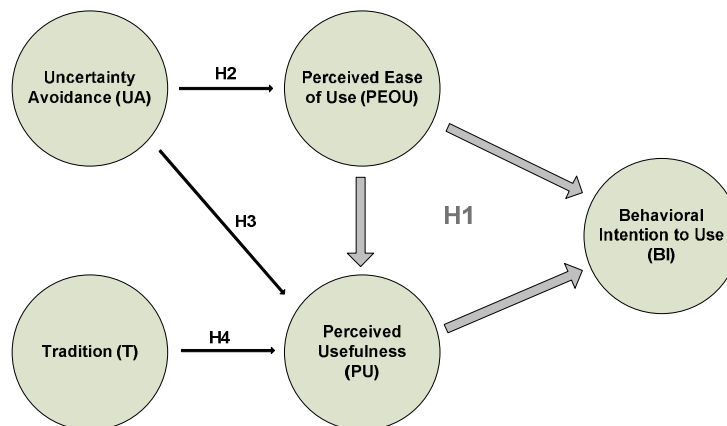


Figure 5: Research Model

When researchers compared countries in the context of cross-cultural research on Information Systems, they have mostly chosen countries with highly different Hofstede profiles, yet (e.g. Straub, Keil, and Brenner, 1997, Calhoun, Teng, and Cheon, 2002, Dibbern et al. 2008). In contrast to these studies, we are the first ones considering the influence of two external variables (Uncertainty Avoidance and Tradition) on the TAM key constructs PEOU and PU against the specific background of national differences in IT adoption in a culturally close setting.

However, generalization of our research work is rather not possible as our hypotheses are based on interviews with Swiss managers that addressed a specific context (i.e. differences in IT adoption between Switzerland and Germany). Within these interviews we identified Uncertainty Avoidance and Tradition as potential constructs being causal for disparities in IT adoption between those two countries. Consequently, it is problematical to apply our research model to countries beside Switzerland and Germany as possible differences in IT adoption between other bordering countries might be caused by cultural values different from UA and Tradition.

### NEXT RESEARCH STEPS

In order to test our propositions, we will first conduct more interviews to gain a deeper understanding of the cultural differences between the cultural closely related countries Germany, Austria, and Switzerland. It will be important to interview managers who have worked in at least two of these countries to capture valid cross-culture experiences. These interviews will support us in shaping and refining the concepts of tradition and uncertainty avoidance within this close-culture setting and could furthermore provide indications for other possible cultural values affecting differences in IT adoption between these countries. Moreover, it is a point for discussion whether this close-culture research also requires a more differentiated consideration of the affected variable (such as PU), leading to the question which particular facets of PU are influenced by these cultural dimensions. Therefore, the interviews will focus on developing a suitable formative measurement instrument for these constructs.

After having collected more qualitative data and having refined our constructs and our model, we will analyze our hypotheses quantitatively. For this purpose, we will repeat the survey on adoption of HR recruiting systems (which in fact is an annual survey, conducted every year since 2002) to explicitly measure the specified cultural dimensions in all three countries.

### REFERENCES

1. Adams, D. A., Nelson, R. R., and Todd, P. A. (1992) Perceived Usefulness, Ease of Use, and Usage of Information Technology: A Replication, *MIS Quarterly*, 16, 2, 227-247.
2. Bandyopadhyay, K. and Fraccastoro, K. A. (2007) The Effect of Culture on User Acceptance of Information Technology, *Communications of the Association for Information Systems*, 19, 522-543.
3. bfs (The Swiss Federal Agency of Statistics, 2007) retrieved from [http://www.bfs.admin.ch/bfs/portal/de/index/themen/16/04/key/approche\\_globale.indicator.30109.301.html?open=2#2](http://www.bfs.admin.ch/bfs/portal/de/index/themen/16/04/key/approche_globale.indicator.30109.301.html?open=2#2), 02.12.2008.
4. Calhoun, K. J., Teng, J. T. C., and Cheon, M. J. (2002) Impact of national culture on information technology usage behavior: an exploratory study of decision making in Korea and the USA, *Behaviour & Information Technology*, 21, 4, 293-302.
5. Castells, M. (1996) *The Rise of the Network Society*, Blackwell Publishers Ltd, Oxford, UK.
6. Davis F. (1986) A technology acceptance model for empirically testing new end-user information systems: Theory and results, Unpublished dissertation, MIT.
7. Dibbern, J., Winkler, J., and Heinzl, A. (2008) Explaining Variations in Client Extra Costs between Software Projects Offshored to India, *MIS Quarterly*, 32, 2, 333-366.
8. Eckhardt, A., Laumer, S., Lippert, J., Weitzel, T., and König, W. (2008) Recruiting Trends 2008 – Österreich: Eine empirische Untersuchung mit den Top-500-Unternehmen aus Österreich, Frankfurt am Main und Bamberg, Deutschland.
9. Eurostat (2007) retrieved from [http://nui.epp.eurostat.ec.europa.eu/nui/show.do?dataset=isoc\\_ci\\_in\\_e](http://nui.epp.eurostat.ec.europa.eu/nui/show.do?dataset=isoc_ci_in_e), 02.12.2008.
10. Gefen, D. and Straub, D. W. (1997) Gender Differences in the Perception and Use of E-Mail: An Extension to the Technology Acceptance Model, *MIS Quarterly*, 21, 4, 389-400.

11. Hasan, H. and Ditsa G. (1999) The Impact of Culture on the Adoption of IT: An Interpretive Study, *Journal of Global Information Management*, 7, 1, 5-15.
12. Hendrickson, A. R., Massey, P. D., and Cronan, T. P. (1993) On the Test-Retest Reliability of Perceived Usefulness and Perceived Ease of Use Scales, *MIS Quarterly*, 17, 2, 227-230.
13. Hill, C. E., Loch, K. D., Straub, D. W., and El-Sheshai, K. (1998) A qualitative assessment of Arab culture and information technology transfer, *Journal of Global Information Management*, 6, 3, 29-38.
14. Hofstede, G. (1980) *Culture's Consequences: International Differences in Work-Related Values*, Sage, Newbury Park, CA.
15. Hofstede, G. (1991) *Cultures and Organizations*, McGraw-Hill, London.
16. Huang, H. and Trauth E. M. (2008) Cultural Influences on Temporal Separation and Coordination in Globally Distributed Software Development, *Proceedings of the Twenty Ninth International Conference on Information Systems*, Paper 134, Paris, France.
17. Ishman, M. D., Pegels, C. C., and Sanders, G. L. (2001) Managerial information system success factors within the cultural context of North America and a former Soviet Republic, *Journal of Strategic Information Systems*, 10, 291-312.
18. Jarvenpaa, S. L. and Leidner, D. E. (1998) An Information Company in Mexico: Extending the Resource-Based View of the Firm to a Developing Country Context, *Information Systems Research*, 9, 4, 342-361.
19. Kappos, A. and Rivard, S. (2008) A Three-Perspective Model of Culture, Information Systems, and their Development and Use, *MIS Quarterly*, 32, 3, 601-634.
20. Kroeber, A. and Kluckhohn, C. (1952) *Culture: A Critical Review of Concepts and Definitions*, Peabody Museum, Cambridge, MA.
21. Kumar K. and Bjørn-Andersen N. (1990) A Cross-Cultural Comparison of IS Designer Values, *Communications of the ACM*, 33, 5, 528-538.
22. Leidner, D. E., Carlsson, S., Elam, J., and Corrales, M. (1999) Mexican and Swedish Managers' Perceptions of the Impact of EIS on Organizational Intelligence, Decision Making, and Structure, *Decision Sciences*, 30, 3, 633-661.
23. Leidner, D. E. and Kayworth, T. (2006) Review: A Review of Culture in Information Systems Research: Toward a Theory of Information Technology Conflict, *MIS Quarterly*, 30, 2, 357-399.
24. Loch, K. D., Straub, D. W., and Kamel, S. (2003) Diffusing the Internet in the Arab World: The Role of Social Norms and Technological Culturation, *IEEE Transactions on Engineering Management*, 50, 1, 45-63.
25. McCoy, S., Galletta, D. F., and King, W. R. (2007) Applying TAM across cultures: the need for caution, *European Journal of Information Systems*, 16, 81-90.
26. Png, I. P. L., Tan, B. C. Y., and Wee, K.-L. (2001) Dimensions of National Culture and Corporate Adoption of IT Infrastructure, *IEEE Transactions on Engineering Management*, 48, 1, 36-45.
27. Ringle, C. M., Wende S., and Will, A. (2007) *SmartPLS 2.0 M3 (beta)*, Hamburg.
28. Rokeach M. (1973) *The Nature of Human Values*, Free Press, New York.
29. Rose, G. M., Evaristo, R., and Straub, D. W. (2003) Culture and Consumer Responses to Web Download Time: A Four-Continent Study of Mono and Polychronism, *IEEE Transactions on Engineering Management*, 50, 1, 31-43.
30. Schein, E. H. (1985) *Organizational culture and leadership*, Jossey-Bass, San Francisco.
31. Schwartz, S. H. and Bilsky W. (1987) Toward A Universal Psychological Structure of Human Values, *Journal of Personality and Social Psychology*, 53, 3, 550-562.
32. Schwartz, S. H. (1992) Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries, *Advances in Experimental Social Psychology*, 25, 1-65.
33. Straub, D. W. (1994) The Effect of Culture on IT Diffusion: E-Mail and FAX in Japan and the U.S., *Information Systems Research*, 5, 1, 23-47.
34. Straub, D. W., Keil, M. and Brenner W. (1997) Testing the technology acceptance model across cultures: A three country study, *Information & Management*, 33, 1, 1-11.
35. Szajna, B. (1996) Empirical Evaluation of the Revised Technology Acceptance Model, *Management Science*, 42, 1, 85-92.

36. Thatcher, J. B., Stepina, L. P., Srite, M., and Liu, Y. (2003) Culture, Overload and Personal Innovativeness with Information Technology: Extending the Nomological Net, *Journal of Computer Information Systems*, 44, 1, 74-81.
37. Thomas, W. I. and Thomas, D. S. (1937) Primitive Behavior: An Introduction to the Social Sciences, McGraw Hill, New York.
38. Trompenaars, F. (1993) Riding the Waves of Culture, Nicholas Brealey Publishing Ltd, London.
39. Veiga, J. F., Floyd, S. and Dechant, K. (2001) Towards modelling the effects of national culture on IT implementation and acceptance, *Journal of Information Technology*, 16, 3, 145-158.
40. Venkatesh, V., Morris, M. G., Davis, G. B., and Davis F. D. (2003) User Acceptance of Information Technology: Toward a Unified View, *MIS Quarterly*, 27, 3, 425-478.
41. von Stetten, A., Eckhardt, A., Laumer, S., König, W., Weitzel, T., and von Westarp, F. (2008) Recruiting Trends 2008 – Switzerland: An Empirical Study of the Top 500 Companies in Switzerland, Frankfurt am Main and Bamberg, Germany.