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## Different Paths of Development of Two Information Systems Communities: A Comparative Study Based on Peer Interviews

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# Communications of the Association for Information Systems

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## Different Paths of Development of Two Information Systems Communities: A Comparative Study Based on Peer Interviews

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### Abstract:

Information Systems (IS) is not a homogeneous discipline. Rather, it is comprised of various communities that are characterized by different perspectives and methods. With regard to the ongoing discussion about the profile of the discipline, this is a remarkable phenomenon. More specifically, it recommends analyzing the characteristic features of the various IS communities and explaining the diverse paths of development they took. Furthermore, it implies the question whether—and how—the current diversity could be overcome in order to foster a more focused competition as well as a more coherent presentation of research results on an international scale. This article contributes to such an investigation. It is focused on a comparison of the international English-speaking community predominantly (in particular in its early days) shaped by North-American IS researchers, which plays a leading role in the international scene, and the IS discipline in German-speaking countries ("Wirtschaftsinformatik" or WI, in Austria, Germany, and Switzerland), which constitutes the largest IS community outside North America that maintains its own approach.

The focus of this article is mainly on describing the communities' characteristics as the outcome of a social construction that is chiefly influenced by those individuals who participated in this construction. Against this background, eight scholars from North America and six scholars from German-speaking countries were interviewed at length. All were chosen as witnesses of and important contributors to the development of their discipline. As a result of this reconstruction, the article presents a rich picture of the communities' history and characteristics as experienced and reported by the interviewees.

The results obtained from this project indicate that neither of the two conceptions (IS or WI) can serve as an ideal model. Instead, a more intensive international exchange among the various research communities, including the Scandinavian and British scholars, should contribute to further develop the field into a more mature and satisfactory state.

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## I. INTRODUCTION

A plethora of studies exist that focus on subjects, goals, methods, and success criteria of research in Information Systems (IS) [e. g., Keen 1980; Hamilton and Ives 1982; Benbasat and Zmud 2003; Andoh-Baidoo et al. 2004; Palvia et al. 2004]. Most of these studies are characterized by a U.S.-centric viewpoint. The conception of IS as it is represented mainly in North America, however, is not the only way of targeting and organizing research on information systems. There are other communities, e. g., in Scandinavia [see livari and Lyytinen 1998] or England [see, e.g., Galliers 1991], that emphasize different approaches to studying information systems. The IS community in the German-speaking countries, i. e. Austria, Germany, and Switzerland, (“Wirtschaftsinformatik” or WI) is one of the largest outside the U.S. It maintains its own approach, which is clearly different from the international English-speaking community predominantly (in particular in its early days) shaped by North-American IS researchers. While the main research subject, information systems and their use in business firms and public institutions, is the same for both communities, typical research goals, research methods as well as the relationship to business practice are remarkably different. When considering the origins of both communities, this is a surprising finding. Both communities were founded in about the same period of time, the late sixties of the last century. Also, the economic and educational drivers were very similar in both cases. The question, why the development of both communities resulted in substantially different conceptions, is not only interesting from a sociology of science point of view. It is also relevant to researchers in both communities. This is for two reasons: First, for all researchers to get a better understanding of their discipline, it is helpful to study its development and history. Contrasting the development of one’s own discipline with that of a similar discipline will contribute to a more differentiated understanding and judgment. Second, studying alternative concepts widens the individual perspective within a particular discipline and may create new options for shaping its future development. Furthermore, the ever-increasing globalization of research and education gives rise to the question, whether or not there is a need for consolidating different profiles of existing IS communities in order to foster a more effective international competition.

Against this background, the project IFWIS (translated as International Comparison of Research Programs in Information Systems) is aimed at a detailed description and comparison of both communities including research topics, goals, methods, relationship to practice, and success stories. In an early stage of the project, a series of interviews with peers of both communities was conducted—both for developing propositions for further investigations and for evaluating a set of hypotheses that reflected our view of the two communities. The interviews contribute to a comparative description and assessment from an insider’s perspective as well as to reconstructing and explaining the development of both communities in terms of the objectives of research, typical methods, relationships to practice, and the role of legitimization efforts. Based on an introductory characterization of both academic communities, this article presents the insights gained from the peer interviews as well as a discussion of possible implications and recommendations.

Note that our study focuses on a comparison of the WI discipline in German-speaking countries and the IS discipline in North America only. We acknowledge that there are further international IS related research communities, for example the Scandinavian IS community, those IS researchers represented by IFIP TC 8, or the Australasian IS community. However, it is a pragmatic necessity to restrict the study’s focus. Our personal involvement and experiences with the WI field in German-speaking countries are the primary reasons for putting one focus on WI. The international dominance and the considerable influence of top-tier North-American IS journals on promotion criteria for the academic career of WI researchers are—from our perspective—convincing arguments for putting a second focus on the North-American IS field.<sup>1</sup> Nevertheless, we would hope that our study is suited to inspire further investigations which will include other IS communities as well.

## II. AUTHORS’ PERCEPTIONS: COMMON GROUNDS AND DIFFERENCES

In preparation for the questions and propositions to be addressed in the peer interviews, we first develop a comparative description of both communities with respect to selected aspects. It is based on our experiences, a

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<sup>1</sup> In the following, we will generally use the acronym IS to denote the North-American IS field.

literature review as well as on intermediate results from a survey conducted with universities offering IS programs or WI programs, respectively.

The following remarks focus on four aspects: (1) the profile of the academic communities in terms of objects, goals, and methods of research; (2) the institutional integration at universities; (3) the institutional development of the communities in terms of departments, model curricula, and study programs; and (4) the perceived strengths and weaknesses as reflected in debates on the status of the IS discipline in each geographical area.

### Common Object of Research but Different Goals and Methods

Information systems are the primary object of research in both communities. In an official statement, published by the scientific commission for WI (“WKWI”) in 1994, the objects of research in WI are characterized as “information and communication systems in businesses and public administration.” [*Wissenschaftliche Kommission Wirtschaftsinformatik* 1994, p. 80, translated by authors].

Research in WI is aimed at studying the analysis, design, introduction and maintenance of information systems [*Wissenschaftliche Kommission Wirtschaftsinformatik* 1994]. This is very similar with IS [e.g., Ives et al., 1980; Barki et al., 1993; for an overview see Lange, 2005c]. However, apparently there is a clear difference in the purpose of research. IS research emphasizes the development of hypotheses and theories on the actual use of information systems according to the behavioral science paradigm. This assessment has been confirmed by various studies focusing on publication analysis [e.g., Orlikowski and Baroudi 1991; Palvia et al. 2004; Andoh-Baidoo et al. 2004]. Alternatives such as hermeneutic approaches, sometimes referred to as “qualitative research” and—only recently—“Design Science” have gained some advocates, but still seem to be of moderate if not marginal relevance [with respect to Design Science [see Andoh-Baidoo et al. 2004, p. 4195]].

In WI it is acknowledged as common sense that the insights gained from studying information systems should be used for supporting system design and deployment by developing methods, design blue prints such as reference models [Frank 2006a], prototypes and other artifacts. This Design Science approach, sometimes also referred to as *construction-oriented research*, seems to be dominant in WI, while empirical studies according to a behaviorist conception of science are rare [see Heinrich and Wiesinger 1997]. This does not mean, though, that there are strong objections against empirical research. There are, however, two major differences to IS. First, in WI making research methods explicit has not been regarded as necessary for long. Instead, the focus has been on outcome, including more generic criteria such as appropriate language, level of abstraction, line of argument, etc. Second, there have been only very few studies focusing on the analysis of research objectives and research methods [Heinrich and Wiesinger 1997; Heinrich 2005; Heinzl et al. 2001]. Apart from WI, there are other communities that focus on parts of the IS research agenda. Among others, they include areas such as “Innovation Management” as part of organizational studies, “Sociology of Information Systems” or “Human-Centered Software Development” (as part of Computer Science). These communities are not, however, part of or even strongly related to WI.

Hence, the literature suggests that while IS and WI study the same subject of research, i.e. the development and management of IS in organizations, they tend to follow different objectives of research and apply different methods.

### Institutional Context

In order to understand the development of a discipline, it is important to take its institutional context into account, since this also comprises such factors as incentives and restrictions that might have an impact as well.

#### Size

The IS faculty directory hosted by *IS-World Net* provides an overview of the size of the IS field in terms of faculty in each nation. The USA and Canada have about 3,780 IS faculty members (including full, associate, and assistant professors) listed in the directory. Our survey of universities in Austria, Germany, and Switzerland resulted in 208 full WI professors and 710<sup>2</sup> research assistant positions at 70 universities, adding up to 918 WI researchers at universities.

Recently, declining student numbers have led to extensive discussions of the implications of such declines. For example, George et al. reported on a sharp downturn of student numbers of MIS majors at Florida State University between fall 2001 and fall 2004 [George et al. 2005]. They attribute the downward trend to the decrease in demand for IT professionals on the job market, which has—according to their opinion—also been affected by the off-shoring

<sup>2</sup> Based on data from 50 universities. Data on the number of research assistants was not available from the other, approximately 27, universities hosting WI study programs.



debate [see also Hirschheim et al. 2005]. However, the most recent increase in demand for IT professionals may again foster student demand for IS programs.

*Wirtschaftsinformatik* departments and faculty have a strong position within German universities: While student numbers for Computer Science have decreased over the last several years, WI degree programs still enjoy relatively high student demand. The number of students enrolled in WI programs (or with the major subject of WI) per university has been between 210 and 240 for the last three years (based on data from 40 of 77 universities offering WI degree programs).

### Organization

Compared to the U.S. model of universities, the German university system entails significant organizational differences, particularly at the department level. Usually, a department is comprised of several research groups or chairs (“Lehrstuhl”). Each chair is usually free to choose a research area and offer—among introductory classes—specialized courses within the relatively wide range of WI research topics.

A research group is headed by a full professor; traditionally the “habilitation” thesis has been the prerequisite to become full professor. Each full professor is assigned a number of research assistant positions which are usually negotiated at the initial professorial appointment. Research assistants participate in research projects and are involved in teaching classes, thus contributing to the overall research and teaching goals of the research group. Research assistant positions usually include the opportunity to complete a Ph.D. degree (“Promotion”) during the time of employment.

WI chairs are frequently part of business schools. A number of WI chairs are integrated in Computer Science schools or departments.

While publications are an important part of the reward system in WI, acquiring research projects and funding from industry or public funding institutions is highly regarded as well. Of course, producing graduates that are urgently demanded by industry is also appreciated by deans and university administrators.

### Career

We assume that career considerations have a relatively high impact on research in both communities, however, with a different outcome. Regarding the outstanding role of top-tier journals, it seems that many IS researchers focus on research topics that fit the requirements defined by these journals rather than their own research interests. For example, Gray, Hoving and Myers underline this impression as well [see respective statements in Kock et al. 2002]. Taking into account the limited capacity of top journals, this goes along with very intense competition.

Until recently, the pivotal prerequisite for getting tenure in WI was the “habilitation” thesis. Its influence on the selection of research topics is hard to judge. The thesis can be evaluated by all faculty members. Usually, it will be evaluated only by two or three reviewers. As a default, the first reviewer is the professor the candidate works for and, functionally, his/her mentor. Often, the first reviewer will play the leading role in selecting the additional reviewers. Therefore, the degree of freedom with respect to selecting a topic and a research approach depends very much on specific regulations and the relationship to the first reviewer. In any case, there used to be less need for discipline-wide standards regulating academic careers, since the “habilitation” took place in a relatively independent environment.

### Institutional History of the Academic Communities

Technological developments in the 1950s and 1960s were prerequisites for applying information technology and information systems in businesses, and, in this way, for the establishment of related academic communities. In this section we intend to give a comparative overview of the communities’ historical development. **Table 1** shows selected key events in the early history of WI and IS.

The history of the WI discipline—concerning research institutions, associations and publication outlets—is documented in several publications [e.g., Mertens and Wedekind 1982; Mertens et al. 2002]. The first “habilitation” thesis with a specific topic on electronic data processing in the business context was published by Peter Mertens in 1966 [Mertens 1966]. At the end of the 1960s the first dedicated chairs, then called “Betriebsinformatik” (“business informatics”), were established at selected universities in Germany and Austria.

A scientific commission representing all WI professors in the German speaking countries (WKWI) was founded in 1975. In the 1980s an increasing number of WI chairs was established at universities and “Wirtschaftsinformatik” started to be offered as a specialized degree program by several universities. In 1984 the first recommendation for

university education in WI was published [Mertens 1984]. A recommendation for the curricula of dedicated WI diploma degree programs was published in 1992 [Kurbel 1992]. The scientific journal *Wirtschaftsinformatik* was established in 1990 and three years later the bi-annual conference “Wirtschaftsinformatik” was initiated by the WKWI. The founders of the discipline had a background in business and administration, some enjoyed additional education in engineering.

**Table 1. Comparison of Selected Dates in the History of IS and WI<sup>3</sup>**

IS	Year	Decade	Year	WI
		1960s	1966	First “Habilitation” thesis on electronic data processing
Founding of MISRC, University of Minnesota	1967/68		End of 1960s	First WI chairs
IS Model curricula for graduates / undergraduate	1972/73	1970s		
Publication of influential MIS textbook by Gordon B. Davis	1974			
Foundation of CISR, Massachusetts Institute of Technology				
			1975	Foundation of the scientific commission “Wirtschaftsinformatik” (WKWI)
First issue of <i>MIS Quarterly</i>	1977			
First ICIS conference	1980	1980s		
New model curricula for graduates/undergraduates [NCD82]	1982			
			1984	First curriculum recommendation for WI
		1990s	1990	First issue of <i>Wirtschaftsinformatik</i> journal
			1992	First curriculum recommendation for WI degree programs
Founding of the Association of Information Systems (AIS)	1994		1993	First “Wirtschaftsinformatik” conference

The North American (Management) Information Systems field relies on a number of “reference” communities—including behavioral science, decision theory, information science, organization and management theory as well as psychology [see, e.g., Barki et al. 1993] —contributing theories and research approaches to the field. As a result the field of IS is comprised of scholars and students with various multi-faceted backgrounds.

Only few publications documenting the institutional development of the IS field in the US are available [e.g., Power 2006; Sherer 2002; Davis 2006]. The MIS Research Center (MISRC) Web site<sup>4</sup> provides some insights into the beginning of the field. Accordingly, the MIS Research Center at the University of Minnesota was founded in 1967/68 as a nonprofit organization within the Carlson School of Management and as the first dedicated MIS research institution in the U.S. Only about four years later the first graduate/undergraduate model curricula for IS programs were published as part of the ACM model curricula [Ashenhurst 1972; Couger 1973].<sup>5</sup>

In 1974 Gordon B. Davis—one of the founders of the MISRC—published the first, and subsequently widely used textbook on Management Information Systems [Davis 1974]. In the 1970s further MIS research institutions were founded (e.g., Center for Information Systems Research (CISR) at the MIT Sloan School of Management in 1974). As a joint venture of MISRC and the professional Society for Information Management (founded in 1968; see [www.simnet.org](http://www.simnet.org)) the first issue of *MIS Quarterly* was published in 1977. The first International Conference on Information Systems (ICIS) took place in 1980.

<sup>3</sup> We do not intend to provide a complete description of important historical events. But we focus on key dates in terms of first dedicated (M)IS research institutions, publications outlets, research conferences and curricula initiatives between the 1960s and the late 1990s.

<sup>4</sup> <http://misrc.umn.edu/about/history/> (last accessed on March 30<sup>th</sup>, 2008)

<sup>5</sup> More recent model curricula for IS graduate programs have been published by Gorgone et al. (2000, 2006).

## Perceived Strengths and Weaknesses

In the early days of IS strong statements were made questioning the existence of IS as an academic discipline. Keen, for example, argued: "There is nothing that is unique to ISR [i.e. IS research], in terms of topics, theory, or methodology, and there are many researchers who study the same topics as the ISR community and in the same way but do not declare themselves as members of it" [Keen 1991, p. 27]. Since then the discussion of the identity or legitimacy of IS as a field of research has been lead in various ways: with respect to relationships to practice [e.g., Benbasat, Zmud et al. published in *MIS Quarterly*, Vol. 23, No. 1, 1999], appropriate research methods [e.g., Lee 1999; Applegate and King 1999], a common body of knowledge [Hirschheim and Klein 2003], common goals and objects of research [Benbasat and Zmud 2003], and a strong theoretic core [Lyytinen and King 2004].

Challenges of IS faculty to protect their positions at business schools are described in an article by Davis et al. [2005]. In order "to secure the future of the field" [p. 979], the paper intends to help readers formulate their own arguments when faced with criticism, frequently caused by a downturn in enrollment numbers. An article by Agarwal and Lucas [2005] reveals the still prevailing IS crisis: After describing and structuring the multiple reactions to the article by Benbasat and Zmud [2003], they suggest that in order to overcome the IS identity crisis, research should be focused on the impact of IT and the "transformational aspects" of IT [Agarwal and Lucas 2005].

While IS researchers do have critical views regarding the success and legitimacy of their discipline, the worldwide reputation of the flagship journals *MIS Quarterly* and *Information Systems Research (ISR)* [e.g., Lowry et al. 2004] as well as high-submission numbers to ICIS conferences demonstrate the leading role IS plays on an international scale.

Since cooperation with business enterprises is common, WI researchers have comparatively good access to funding from industry. The conducted survey of the WI discipline has shown that 44 percent of the 708 research assistant positions are funded by external grants (based on data from 50 universities). Additionally, some WI chairs are completely funded by industry. It seems that the financial situation of most research groups in WI is fairly comfortable. This may contribute to a climate in the WI community that is characterized by a prevailing high degree of "laissez faire": there are many sub-communities that maintain their own research topics and that coexist peacefully.

This positive picture of WI is contrasted by a number of challenges the discipline is facing, including (1) the institutional context; (2) the application of research methods; and (3) globalization:

Ad (1): The assignment of an assistant professor to a full professor is regarded by some as a threat to young scientists' independence. While some universities have already implemented positions for assistant professors ("junior professor"), which are not assigned to a chair anymore, there is an ongoing debate if this is appropriate.

Ad (2): In the past, most WI researchers regarded the question, what kind of research method to use, as a matter of personal taste. In recent years, there were a few debates that challenged this attitude. Meanwhile, most members of the community seem to agree that the use of a research method is essential for any kind of scientific research. Nevertheless, it is still not common practice to explicitly deploy a research method. However, this is being perceived as a problem by an increasing number of researchers [Frank 2006b].

Ad (3): There is consensus among WI researchers that scientific competition needs to be international. International conferences and journals are the pivotal medium for participating in this competition. While there is an ongoing discussion within the discipline of how to create journal rankings, top tier IS journals are generally being preferred over WI journals. Since these journals generally publish research results adhering to behavioral empirical research, this development may cause an adaptation to IS, resulting in a clear threat to the current profile of WI.

To summarize, the preliminary analysis of both communities' specific strengths and weaknesses reveals an interesting constellation. On the one hand, IS shows remarkable strengths: Its top journals enjoy an outstanding reputation. Therefore, it seems to have a substantial impact on academic careers worldwide and, as a consequence, seems to serve as a model for many countries. On the other hand, IS seems to be in a continuous state of crisis. There is a never-ending stream of critique and doubts concerning the discipline's profile and legitimacy. It seems that the discipline struggles with its perception by neighbor disciplines at business schools and the appreciation of its graduates. WI seems to be rather successful in conducting research projects — funded by various sources including industry. Also, there is a continuous high demand for its graduates. At the same time, WI is struggling with a lack of methodological foundation and the international dominance of IS, which is challenging its own conception as a discipline.

### III. A PEER INTERVIEW STUDY

In order to enrich and evaluate our own perception of the field and the specific characteristics and differences of IS and WI, we conducted interviews with selected, renowned peers of both fields.<sup>6</sup> The study is aimed at further insights on and explanations for the different paths of development of WI and IS. Also, it should provide starting points for discussions of the future development of both fields.

We shall discuss the chosen interpretive research approach and its justification in the following subsection.

The historical development and status of academic disciplines can be described and evaluated from various perspectives and include numerous issues of interest. Thus, the focus of the interview study — for reasons of practicability — has to be restricted to selected issues. The study focus, propositions, and interview questions are presented in the subsequent subsection.

Eight scholars from North America and six scholars from German-speaking countries were interviewed for this study. Further information on the conduct of the interviews and the interpretation of interview transcripts are presented at the end of this section.

#### Research Approach: Capturing Subjective Perspectives

Science in general and a field of research or a discipline in particular can be viewed as a social construction, which is driven by subjective goals, interests, perceptions and preferences of its members — and external factors such as the institutional context as well as economic and political conditions. Our research approach is aimed at capturing the subjective perspective assuming that it is important for understanding the development of the discipline as a whole. In other words: in addition to objective facts that characterize a discipline, we believe that understanding it requires taking into account personal viewpoints of those who were involved in creating the communities. We strive to achieve objectivity (or trans-subjectivity) through a comparative study of multiple perceptions of each discipline, i.e. a survey of multiple IS/WI researchers. Hence, scholars, who have been in the field, preferably, from its beginning and who have been engaged in the development of the respective field, comprise the target population for this study. The role of the interviewer is filled by two of the authors, both having been professors in the respective WI and IS research community for several years.

We chose an interpretive, hermeneutic approach to create a rich reconstruction of the communities' development. Thus, the interview schedule includes open-ended questions as well as more specific questions derived from our assumptions concerning the fields' development discussed in Section II.

Our research approach reflects the specific peculiarities of the subject of research: i.e. academic disciplines that can be viewed as social constructions. Hence, it seems reasonable to focus on the perceptions and judgments of those who participated in the construction process. Nevertheless, our approach is likely to cause three main objections:

- (1) *Completeness of the derived picture (representativeness)*: An interview study can take into account only a limited number of peers and, thus, perspectives on the field. Hence, researchers might be overlooked who would have contributed vital additional perspectives. Furthermore, the suitability of those selected to be representative for the community is likely to be questioned by other members of the field. Because other peers — who are not in the sample — might provide perceptions contradictory to those provided in the interviews conducted.
- (2) *Generalizability of conclusions*: Conclusions formulated as propositions on the IS and WI field's paths of development and current status can — with the chosen approach — be confirmed or rejected only on the basis of interview statements of the selected peers. The generalizability and validity of these conclusions can, however, be questioned due to the limited representativeness (see above) of the sample.
- (3) *Originality and usefulness of insights*: Every IS or WI researcher has made his/her own experience in the field(s) and, thus, has developed his/her own perspective on the field's development. In particular, peers of the IS field might criticize that a plethora of studies and opinion papers on the field's development and status is already available providing a sufficiently rich picture of the field.

While we believe that these objections cannot be refuted completely, we think that there are strong arguments to relativize them:

<sup>6</sup> The interview study reported on in this article is part of a larger research project: the IFWIS project is funded by the German Science Foundation (DFG) and aims at evaluating and comparing the development and current status of WI and IS. Appendix I provides an overview of issues addressed and research methods applied in the overall IFWIS project.

*Ad (1) On the issue of representativeness:* Since we are familiar with both communities, we were able to immediately identify a number of researchers who fit the intended profile. In WI there are only few discipline members who have shaped the field from the beginning. Hence, the six senior researchers who were asked to participate comprise the entire group of the target population; of these five agreed to be interviewed. One additional WI peer was selected as interview partner due to his particular experience with the North-American IS discipline. The background of each peer is described in detail in a corresponding research report [Lange 2005a]. The selection is more difficult to justify for the North-American IS field because of its larger size. Thus, in order to increase the acceptance of the selected peers, we used snowball sampling (see Appendix II). Of the eight interviewees finally selected six have played an active role in shaping the IS field from its early years. Of the final IS and WI sample all but three interviewees have been active members in the fields for more than 30 years [for more details see Lange 2005a]. Hence, we are confident to have made a selection that allows creating, not necessarily a complete, but in any case a rich picture of each field from various perspectives.

*Ad (2) On the issue of generalizability:* We intend to use the terms “proposition” and “confirmation” in the context of what we call a “trans-subjective reconstruction” (see above). That means: They are still interpretations (in a hermeneutic sense) and may be biased by the viewpoints of those, we selected. Hence, our objective is not to tell the readers how the development of the communities actually took place, but to provide them with an interpretation based on the explicated experiences of those who actively influenced the process. In this way, propositions and conclusions derived from the interviewees’ experiences may serve to foster further discussion.

*Ad (3) On the issue of originality and usefulness:* In the introduction we have already provided strong arguments that underline the usefulness of comparing the development paths of IS and WI: For all researchers to get a better understanding of their discipline, it is generally helpful to study its development and history. Furthermore, studying alternative concepts widens the individual perspective within a particular discipline and may encourage new approaches for shaping its future development.

There have been a plethora of publications on the status and development of the academic IS field [see Section II, see also Schauer 2007a and Schauer 2007b]. However, we are aware of only two interview studies that address — in part — similar issues. Both studies have been published by Watson et al. [1999, 2000]: Telephone interviews were conducted with business school deans or department heads to gain insights on various topics, including student demand, lack of faculty, and competitors at business schools. While some interviewees from outside North America were included, the studies did not focus on a comparison of different geographical IS communities. Hence, our research approach is innovative in terms of the method (personal interviews) and the particular focus on the North-American IS field compared to the WI community in German-speaking countries.

### Propositions and Questions

The description of both communities in Section II shows a number of obvious characteristics. Our analysis of these characteristics as well as our additional experience with the specific cultures of both communities resulted in a number of propositions, which were used to create a list of questions. In order to provide better guidance for the interviews, the questions are grouped into different topical areas in the interview schedule. In this article we focus on the following categories:

1. Profile and distinctiveness of the academic communities: objectives and methods
2. Relationship to practice (relevance)
3. Legitimizing the fields as (scientific) research discipline

In each of these topical areas we focus on a number of propositions<sup>7</sup> and related questions which are particularly suited to inspire a discussion about the comparison of both communities as well as on their future perspectives. Some of the propositions were inspired by our observation of IS, while others are more related to WI. Nevertheless, the resulting questions were used in both questionnaires for commensurability reasons. The questions relevant for this paper are listed in Table 2, Table 3 and Table 4. For the complete interview schedule — in German and English — see the corresponding research report [Lange 2005a].

<sup>7</sup> Note that we use a relaxed concept of “proposition” here: We do not interpret a proposition as derived from a theory, nor do we intend to specify it in a way that would allow for testing it in the sense of behaviorist research. Instead, we regard a proposition as an explicit assumption about our subject of interest, which is used to improve the transparency and traceability of our reasoning.

**Profile and Distinctiveness of the Disciplines: Objectives and Methods**

In order for IS departments and faculty to increase their acceptance in business schools, they adopted the behaviorist model of “scientific research”. Against this background we formulate the following propositions for research in IS<sup>8</sup>:

- Explanation in terms of identifying correlations between variables to explain a phenomenon plays an important role in IS research. **(P\_1)**
- Positivist, behaviorist (quantitative) research methods frequently determine the set of accepted research methods in IS. **(P\_2)**

We formulated the following propositions related to design-oriented research in WI:

- Design and construction are the dominant objectives of WI research. **(P\_3)**
- Design-oriented research approaches, specifically developing prototypes and conceptual models, are the most common in WI. **(P\_4)**

Table 2 displays the relevant questions from the interview schedule related to the communities’ profile.

<b>Table 2. Relevant Interview Questions Related to the Profile</b>
<ul style="list-style-type: none"> <li>• What are the fundamental objectives of research?</li> <li>• How relevant are description, explanation and construction/design for achieving these goals?</li> <li>• Is there a certain — more or less fixed — set of accepted research methods?</li> <li>• How relevant are the following research methods?                             <ul style="list-style-type: none"> <li>▪ Quantitative empirical research</li> <li>▪ Interpretative studies (qualitative research, e.g., interpretive case studies)</li> <li>▪ Action research</li> <li>▪ Design-oriented research (“design science”, research by development)</li> </ul> </li> </ul>

**Relationship to Practice (Relevance)**

The question of relevance of IS research has been discussed in the IS literature on a broad scale (see section II). Based on this we propose:

- Relevance to practice of research objectives and results is not considered fundamental for IS research. **(P\_5)**

Our experience in the WI research community leads us to the following proposition:

- Aiming for practice relevance and cooperation with industry are typical for WI research. **(P\_6)**

Publications in IS and WI indicate that short-lived fads influence research in both fields:

- Faddish topics — frequently fostered by industry or consultancies — have had a considerable impact on IS and WI research. **(P\_7)**

Close cooperation between WI faculty and industry practice increases the susceptibility of WI research to fads. Therefore, we propose that

- WI research is more susceptible to short-lived topics and trends than IS research. **(P\_8)**

Derived from the assumed low level of cooperation and exchange with practice we propose another proposition concerning the perception of the IS discipline by practitioners:

- IS as research discipline is perceived with little value by IT professionals and practitioners. **(P\_9)**

<sup>8</sup> While these propositions might apply to US social science research in general, we focus on IS research only, since our objective is to compare IS with German WI, as suggested earlier in the paper.

The interview questions related to these propositions are listed in Table 3.

**Table 3. Relevant Interview Questions on Relationship to Practice and Practice Relevance**

1. What is the role of problems in business practice when formulating research objectives?
2. Subject of research: What has been the role of re-occurring topics or “fads”?
3. How would you assess the development and the current status of cooperation between IS researchers and practice? (e.g., joint projects, workshops, consulting, conferences)
4. According to your opinion, how is the IS discipline perceived by IT/IS professionals?
5. What is the value of relevance (i.e. alignment with practice demands) for the discipline's profile?
6. Has the importance of relevance changed over time?

### Legitimizing the Fields as (Scientific) Research Discipline

We assume that striving for legitimacy has been a key driver for the development of both communities – and at the same time a core aspect for explaining the different paths they took. Hence, we formulated propositions related to the role of legitimacy for each discipline.

For the role of legitimacy in general, we propose:

- Efforts for increasing legitimacy have played a prominent role in the development of IS. (**P\_10**)
- Specific efforts for increasing the discipline's legitimacy rarely occurred in the history of WI. (**P\_11**)

For the role of specific measures and efforts for increasing legitimacy we propose the following propositions:

- Applying rigorous research methods has contributed significantly to the legitimacy of IS. (**P\_12**)
- Demand by practitioners for graduates, and in this way by students, has largely contributed to the legitimacy of IS. (**P\_13**)
- Doing research relevant to practice has largely contributed to the legitimacy of WI. (**P\_14**)

The interview schedule contains two questions aimed at identifying the role of legitimation efforts (see Table 4).

**Table 4. Relevant Interview Questions Related to Legitimacy**

1. What role did efforts for legitimating IS play in the development of the discipline?
2. By which efforts was legitimation primarily achieved? Suggestions:
  - Success or acceptance of research results
  - Demand for and interest in IS by students
  - Demand by practitioners (graduates, funding)

### Conduct of Peer Interviews and Interpretation of Transcripts

The interview schedule served as guidance in order to gain relevant insights to the experts' experiences and to give an orientation for the interview discussion. In advance to the personal meeting, interviewees were given the interview schedule allowing them to prepare, if they felt the need. According to the standards of expert interviews the questions were asked in an open-ended fashion.

The interviews were conducted during the course of three conferences (ICIS in 2004, HICSS in 2005, and WI in 2005) or during personal visits with the respective interviewer. In most cases both interviewers were present, however with one mainly leading the discussion (see Table 5). The conduct of the interviews varied between 50 and 95 minutes.

After transcription of the interview tapes, we marked terms, expressions and sentences with an unclear or potentially ambiguous meaning. Additionally, we looked for new aspects that were suggested as important by the interviewees. The reviewed transcripts, together with a document containing the additional questions, were sent back to the respective interviewees for revision and approval. We applied an interpretative content analysis for evaluating the interviews based on the returned and approved transcripts. According to the typical interpretive content analysis the answers were condensed to reflect the main statements and redundant information was deleted [e.g., Filk 1998].

Table 5. Interview Participants and Interview Dates			
Community	Interviewee	Interviewer	Date
IS	Jack Rockart	U. Frank (R. T. Wigand)	December 2004
	Richard Mason	U. Frank (R. T. Wigand)	December 2004
	Robert Zmud	U. Frank (R. T. Wigand)	December 2004
	Rudy Hirschheim	U. Frank (R. T. Wigand)	December 2004
	Gordon B. Davis	U. Frank (R. T. Wigand)	December 2004
	M. Lynne Markus	Rolf T. Wigand	January 2005
	William R. King	Rolf T. Wigand	January 2005
	Paul Gray	Rolf T. Wigand	March 2005
WI	Hans R. Hansen	Ulrich Frank (R. T. Wigand)	February 2005
	Helmut Krcmar	Ulrich Frank (R. T. Wigand)	February 2005
	Karl Kurbel	Ulrich Frank (R. T. Wigand)	February 2005
	Peter Mertens	Ulrich Frank (R. T. Wigand)	February 2005
	Heidi Heilmann	Ulrich Frank	February 2005
	Lutz Heinrich	Ulrich Frank	March 2005

#### IV. INTERVIEWEES' PERCEPTIONS

We now discuss the interpretation of the results with respect to the propositions and questions formulated. The descriptions represent the compilation and summary of answers provided and made available through the interview transcripts. Lengthy citations and references to specific statements are largely omitted; all relevant interview statements are presented and discussed in detail in two research reports [Lange 2005b; Lange 2006].

##### Profile and Distinctiveness of the Communities

From an epistemological view point, the kind of knowledge aspired through scientific research (**objective of research**) can relate to insightful *descriptions* of real-world phenomena and their *explanation* through theoretical models. Information systems themselves represent constructions that can influence the real-world environment and processes they support. Therefore, *constructs* or artifacts which help to improve the process of information systems development or implementation can be seen as another type of IS research objectives.

In the interviews with IS peers answers relating to the role of the different types of objectives are provided in varying detail. Nevertheless, the roles of the different objectives are described relatively clearly and the answers given indicate a change over time (see **Table 6**). According to the interviewees' impressions, the objective of description was more important in the early days, and is not valued as an appropriate research objective today. The general process of understanding was then extended by applying more rigorous methods and the objective of explanation is now given the highest value (see Table 6).

**P\_1:** Explanation in terms of identifying correlations between variables to explain a phenomenon plays an important role in IS research. (**supported**)

All but two interviewees think that there is a **set of accepted or dominant research methods in IS** and describe it as positivist, quantitative, empirical research: "Quantitative, rigorous research has always been the gold standard" (IS peer). One additionally mentions case study as part of the set of accepted research methods.

Four different reasons are given to support the existence of a set of accepted research methods in IS:

3. IS faculty being part of business schools tend to apply the same methods as other management disciplines.

4. It is "easier" to publish, because there are "templates" that tell you how to write an article.
5. Most researchers are "biased to use the research method that their Ph.D.-advisor used" (IS peer).
6. Publication analyses of major IS journals indicate a relatively narrow set of accepted research methods.

**Table 6. Descriptive Statements Related to the Objectives of Research in IS**

Objective Role	Quotations
Description: has been important early on, not valued today	"In the early days, description and to some degree explanation were 'all' that we did." "Description [...] has never been valued in our field."
Explanation: highest credibility	"As new phenomena emerged, we tried to understand the new phenomenon and [...] to formulate it in some way that more rigor can be applied to it." "In the hierarchy of epistemology explanation usually is given the highest credibility."
Construction design: recently more important	"[the design approach] has emerged in Europe and has had fairly significant impact here." "Until recently construction [and] design were only valued in some marginal areas like group decisions and support systems" "I'd say the percentage of design science, designing and building something, is rising, I think. But slowly."

Two IS peers note that they do not see a set of research methods being dominant in IS research; one argues that — due to fast technological developments — the field changes very quickly, so those, who come to the field are self selected to be tolerant of new approaches. The Manchester IFIP 8.2. Conference in 1984 is mentioned as indicating that methodological issues were discussed even in the early days of the discipline, indicating the attitude, that "the world is more than just positivism" (IS peer).

Six IS interviewees seem to agree (all but the two who do not see a fixed set of dominant research methods) that there have been changes in the set of accepted or dominant research methods. Four argue that the "field has broadened" and has become more open to various research methods, such as action research and interpretive studies. The other two report to have perceived the change in the set of accepted research methods as negative: one argues that researchers would only "pay lip service" with respect to the acceptance of more qualitative research methods; another one argues that the range of accepted research methods was narrowed down over time as indicated by the publishing policies of the *MIS Quarterly*. Interestingly, other interviewees — pointing out the broadening of the set of accepted research methods — note that changed journal publishing policies have fostered a wider set of accepted research methods.

Interview results indicate that interpretative studies are commonly applied as well. However, one interviewee states that it would be still hard to get them published in top journals such as *MIS Quarterly*. It is argued that the usefulness of interpretative vs. quantitative methods depends on the stage in the process of research. Action research and design oriented research were not discussed in detail and do not seem to be of high relevance in IS research.

**P\_2:** Positivist, behaviorist (quantitative) research methods frequently determine the set of accepted research methods in IS. (**supported**)

Discussions on the **objective of research in WI** show clearly that "Design" is the main objective. WI interviewees talk about a dominant focus of WI research in design, a "large number" of WI researchers who provide industry with design results, and the design aspect being most important in WI.

**P\_3:** Design and construction are the dominant objectives of WI research. (**supported**)

Discussions on an **accepted set of research methods in WI** lead to the following results: The interviewees mention methods aimed at prototyping and the construction of architectures for problem solutions as well as field studies as typical methods. One interviewee states that this set of accepted methods has not changed over time. Three, however, state that lately there is a greater variety of accepted research methods: according to their opinion, empirical research methods of the social sciences have recently gained importance. Answers concerning the



relevance of particular research methods state clearly that — so far — empirical research does not play a significant role. The interviewees describe their impression that there have been only very few positivist, empirical studies conducted by a very limited number of WI research groups.

The interviewees refer to the organizational difference to the North American system to explain the relative dominance of design-oriented research in WI: In the German system, professors can coordinate more research assistants to work on a common project. Two arguments are suggested to explain the apparent lack of empirical evaluation of design artifacts: (2) External funding usually does not exceed two or three years, making long-term evaluations difficult. (3) In many cases constructed artifacts are very complex, implying so many variables and different cases that rigorous empirical validation is hardly possible.

**P\_4:** Design-oriented research approaches, specifically developing prototypes and conceptual models, are the most common in WI. (**supported**)

**Relationship to Practice (Relevance)**

The discussions on the **role of problems in business practice** for research objectives in IS, reveal that the interviewees’ experiences concerning the role of business problems are ambiguous (see Table 7). The discussions indicate, that problems in business practice are used as a “source for ideas” or to “motivate” a research project. However, IS research projects typically do not primarily aim at developing problem solutions: in many cases the objective is to contribute to the discipline in terms of publications “rather than [to] contribute to [the solution of] real world problems” (IS peer).

Table 7. Roles of Problems in Business Practice for Research Objectives	
Role of problems in business practice	Quotation
Source for ideas	<p>“As a research community, we are constantly trying to [...] understand these problems [of business practice]. And it’s those deep, recurring complex problems which are the fundamental sources where you get your ideas for research.”</p> <p>“Most of the dissertation work where I’ve supervised or where I’ve been involved with, is motivated by a business problem. It’s a problem by practitioners; that they have trouble doing something.”</p> <p>“I think ideas are often generated by at least some idea of a real-world problem.”</p> <p>“There are many people who are problem driven.”</p>
Not primary objective (but increasingly relevant)	<p>“A major part of the research in our field is still done to get tenure, which means that you look at the small things that contribute to the discipline, rather than contribute to real problems. [...] But I think increasingly we see much more effort aimed at real problems.”</p> <p>“[...] there are particularly people who have come into the field from either the economic tradition or [...] from a psychological tradition. They’re more theory driven than problem driven.”</p>

The discussions related to the **value of relevance for the IS discipline’s profile**, also indicate ambiguous perceptions. While all IS peers interviewed apparently agree that some degree of relevance is important for the discipline, there is one group that views it as fundamentally important and another group that views relevance as only relatively important for the discipline. The first group of interviewees assesses relevance as a critical and fundamental characteristic and requirement of research in IS: “If relevance isn’t a primary concern, I don’t think it [i.e. the IS discipline] has a reason for its existence” (IS peer). The second group considers it appropriate to keep or establish a certain level of relevance in research, while aligning the curriculum with student demands is attributed higher priority: “The relevance of the curriculum [is] more important than the relevance of the research” (IS peer).

Three IS peers emphasize that the role of relevance has indeed changed during the discipline’s development. Based on the answers provided three phases can be distinguished in which relevance to practice was given different priorities in IS research. These phases apparently correlate to the changing role of different objectives of IS research over time (see **Table 6**):

*In the early days:* According to the interviewees impressions, the early days of the discipline were characterized by close alignment with practice, because “industry was ahead” (IS peer) and relevance was needed to attract financial support.

*Up until recently/today:* The interview discussions indicated that during the discipline’s development relevance started to be dominated by rigor, exemplified through the research requirements set by top-tier journals. Additionally, rigor was necessary to improve institutional legitimacy at business schools: “[the IS discipline] moved to emphasizing rigor over relevance because the target there...institutional legitimacy as opposed to external legitimacy” (IS peer).

*Today:* Some interviewees argue that nowadays practice relevance is more tolerated in IS research, because people recognized that they have “gone too far” (IS peer) in emphasizing rigor over relevance. Topics such as RFID and offshoring are given as examples for research areas, in which IS researchers are “ahead of industry” (IS peer).

Hence, the interview discussions concerning the role of relevance indicate that historically (and maybe even today) relevance to practice has not been assessed as fundamental for IS research.

**P\_5:** Relevance to practice of research objectives and results is not considered fundamental for IS research. **(generally supported)**

The interviewees underline the high importance of the **value of relevance for the profile of the WI discipline**. They speak about alignment with practice being a “natural” part of WI research (“Selbstverständlichkeit”) and close cooperation with practice is considered fundamental to identify relevant problems in businesses. Only one of the interviewees questions the high importance of relevance for the WI profile. None of the WI peers interviewed mentioned any changes concerning relevance to practice over time; it was said that a clear reference to business practice had been characteristic for the WI field from its beginning, only the topics studied have changed over time.

The interview discussions with WI peers draw a clear picture concerning **cooperation with industry practice**. All interviewees agree that there is a high level of cooperation with practice; one reports on his impression that up to 90 percent of all WI researchers maintain close cooperation with industry. Various types of cooperation with practice are mentioned by the interviewees: common teaching projects or seminars, diploma/master theses written in cooperation with a business firm, workshops and conferences, research projects, and business consulting.

**P\_6:** Aiming for practice relevance and cooperation with industry are typical for WI research. **(supported)**

The discussions with WI researchers indicate that **faddish topics** have influenced WI research in various ways. The interview partners mention the “significant role” of fads and a “massive influence” on the field through developments in practice. They give the examples of expert systems (in the beginning of the 1990s) and electronic commerce. One interviewee points out that the role of fads has changed over time: he states that WI researchers mainly concentrated on the latest fads and trends between 1985 and 1995; he argues that in the meantime some research groups have started to develop long-term research programs, which serve as the basis for selecting only those current topics which are actually relevant for the long term research agenda.

Most interviewees mention strong alignment with practice along with dependency from industry funding as reasons for the excessive adoption of latest industry topics in WI research. One interviewee critically mentions that research journals and conferences are also heavily influenced by the latest trends in technology and industry increasing the pressure to always concentrate on the latest and frequently faddish topics.

The interviewed IS peers agree that fads and reoccurring topics have played a major role in IS research. Fads are assessed positively in terms of the relationship to practice, because they “legitimize the field in the eyes of practice” in the way that researchers — from the view point of practitioners — understand the current problems relevant in practice. Some report that fads also open new research areas and frequently push new funding opportunities: “A fad has often meant that there was interest, income, budget support and opportunities to do research.”

However, from an academic view point, the IS interviewees see clear disadvantages, including the following:

- It is argued that research topics are selected according to “what’s the latest fad,” which has lead to opportunistic research strategies.
- Some report that it is difficult for doctoral students to select appropriate research topics that are “likely to withstand the test of time.”

Supplementing the discussion of IS researchers, WI peers also clearly state the drawbacks of too close alignment with faddish topics:

- cumulative progress of research is impeded, because researchers do not refer to earlier works in the same area using different terminology;
- researchers aim at achieving short term success in order to acquire short term funding; and
- researchers do not have a sufficient focus on the long term development and progress of the field.

The discussions of IS and WI interviewees indicate that faddish research topics have gained much attention and have impacted funding and research strategies in several ways.

**P\_7:** Faddish topics — frequently fostered by industry or consultancies — have had a considerable impact on IS and WI research. (**supported**)

The proposition of IS research being less susceptible to fads than WI research could not be supported. Peers of both communities rather eagerly discussed the negative impact of faddish topics on the consistent accumulation and classification of research results.

**P\_8:** WI research is more susceptible to short-lived topics and trends (“fads”) than IS research. (**not supported**)

The **perception of the IS discipline by IT professionals** apparently differs significantly for research and teaching. Two interviewees state that the educational IS program is regarded very highly: “[IS professionals] have a very positive perception of programs that turn out people with a combined business and technology expertise and interest” (IS peer). More negative answers are provided with respect to IS research and, in particular, the value of research results, or the style of their presentation, respectively: “Typically they don’t appreciate [the research results, because] typically it’s not written in that mold” (IS peer). It is argued that research results are only permeating into industry by students and then they would not be perceived as results of IS research. One IS interviewee expresses his concern that IS researchers and professionals do not have common interests and researchers are “too academic.” Another interviewee points out that a large number of practitioners does not “care much about” IS research. Only one interviewee reports on positive experience with IS professionals’ perceptions of IS research: He comments on his valuable experience with the Society for Information Management (SIM), which lead him to the impression that “in general, the perception [by CIOs] is very positive” (IS peer). The overwhelming majority of the statements in this discussions, however, indicate that the perception of IS as a research discipline by IT professionals is rather poor.

**P\_9:** IS as a research discipline is perceived with little value by IT professionals and practitioners. (**generally supported**)

### Legitimizing the Fields as (Scientific) Research Discipline

The interpretation results show that legitimization efforts have played an important role in the IS discipline since the very beginning as indicated by the following exemplary statements:

- “It has been a very introspective field” (IS peer);
- “[Legitimation] has been our theme from the beginning” (IS peer); and
- “Legitimation is a key area [...]” (IS peer).

**P\_10:** Efforts for increasing legitimacy have played a prominent role in the development of IS. (**supported**)

In four interviews with WI peers the role of legitimizing WI as a scientific discipline is discussed. Two of them mention discussions lead in the 1980s – primarily initiated by Wedekind [1980] — and two Delphi studies on the subjects of research and objectives of the field [see König et al. 1995; Heinzl et al. 2001]. Three interviewees, however, emphasize that there were no active endeavors inside the field that aimed at increasing its legitimacy.

**P\_11:** Specific efforts for increasing the discipline’s legitimacy rarely occurred in the history of WI. (**supported**)

Particular efforts mentioned for legitimizing IS relate to research results and methods, student and practice demand, but also to external funding, research associations, publishing outlets, and the importance of IT in general.

It is stated that IS research results themselves and the topics studied were not as relevant to this respect as the process, i.e. the methods applied: “[Research results lead to legitimation in the eyes of business school colleagues, however] it’s not the problems we’re studying as much as the process.” (IS peer).

Another IS interviewee recalls that “[we] tried to bring more rigorous methods and criteria into the field. [...] I think that helped legitimate it very much.” (IS peer). Another peer from the IS community reports that “in a number of places, professors worked very hard to be legitimate, which meant that they worked very hard to have their work be rigorous and perhaps not relevant.”

Another aspect mentioned as important factor is the application of theories from related disciplines: It is argued that this way earlier largely descriptive research could be enhanced to be more legitimate from an academic view point. Respected academic journals are reported as having been highly important for becoming a “more acceptable discipline in the academy” (IS peer). It is stated that “improving the perceived quality of the journals” (IS peer) was the major effort for improving legitimacy.

**P\_12:** Applying rigorous research methods has contributed significantly to the legitimacy of IS. **(supported)**

Demand by practitioners and consequently by students is generally attributed a high relevance for legitimating IS, if only on an “informal” level. It is argued that the impact of IS researchers in business schools has been highly influenced by student numbers, since high demand by students “gets the recognition of deans and administrators” (IS peer).

**P\_13:** Demand by practitioners for graduates, and in this way by students, has largely contributed to the legitimacy of IS. **(supported)**

The discussions concerning the role of different factors influencing the legitimacy of WI as a discipline draw a quite unambiguous picture. All WI interviewees agree that research results did not have a significant influence. Similarly, they do not attribute much influence to student demand, because student numbers are still behind the numbers in the “classical” business management programs and, at the same time, business management students have started early to show interest in WI topics in general by selecting WI as compulsory optional subject.

Alignment of research topics with practice, practice demand for graduates and mutual research projects as well as acquiring public funding are factors that — according to the discussions with the WI peers — have had a significant influence on the field’s legitimacy: “In Germany legitimation has largely been achieved through the discipline’s value to practice.” (WI peer).

Even though there were difficulties in the beginning to publicize the title of the field — and it was said that even until today there are human resource managers who do not quite understand the field’s name, essence and content — the demand of industry for graduates apparently has become an important factor: The WI peers agree that there has always been a high demand for graduates. The interviewees also report that firms seeking to cooperate with WI research groups have been a significant factor for the field’s development. Similarly, establishing large-scale funding programs within the German Science Foundation (“DFG”) is mentioned as an important aspect for improving the field’s acknowledgement and legitimacy in the scientific community.

**P\_14:** Doing research relevant to practice has largely contributed to the legitimacy of WI. **(supported)**

Asked for the success of the field, four of the WI professors mention long term development projects, such as ARIS (Architecture of Integrated Information Systems) [Scheer 2000], an approach to enterprise modeling, which resulted in a remarkable commercial success.<sup>9</sup> Three interviewees critically state that such research results, ARIS in particular, have had a significant influence on business and research practice, but could not be counted as a research success of the field per se. The discussions indicate that there is no consensus concerning major research results in the field:

- One interviewee reiterates that so far all research in WI has been mediocre (“Alles Bisherige ist Mittelmaß”).
- Two WI peers state that there have been no particularly predominant research results.
- One interviewee, however, argues that the area of reference modeling is standing out with successful results. He states that it represents a field that is typical for WI, neighboring disciplines acknowledge

<sup>9</sup> IDS Scheer, the company that markets tools and services around ARIS, employs more than 3,000 people worldwide.



research results in this area, and research on the topic of reference modeling has been conducted in a very stringent way over a longer period of time.

In order to summarize the previous discussion, Table 8 provides an overview of the interviewees' perceptions on the role of different factors for increasing the legitimacy.

<b>Table 8. Role of Different Factors for Increasing Academic Legitimacy</b>		
<b>Role for Legitimacy</b>	<b>IS</b>	<b>WI</b>
<i>Success or acceptance of results</i>	No important research results	Some prominent results cannot be classified "research" results (e.g., ARIS)
<i>Student demand</i>	Important factor on an informal level	No significant factor
<i>Demand by practitioners</i>	Demand for graduates as important factor	Important factor Constantly high demand for qualification of graduates, while title of the field is still sometimes unknown Firms seeking to cooperate with WI researchers important factor in the development of WI
<i>Rigorous research methods</i>	Important factor: process is considered more important than the topics studied	No significant factor
<i>Journal quality</i>	A major effort	No significant factor

### **Additional Issue: Coherence of Research and Teaching**

As described earlier, we not only developed propositions concerning the development and status of the field in advance of the interviews. But we also posed deliberately open and explorative questions in order to identify additional issues, considered important by the interviewees to describe the communities and their differences.

One IS peer indicated during the course of the interview that contents taught in IS classes and subjects of research differ considerably: "There is an IS discipline in terms of teaching. But I think in the research area, the research perspective, there is really a group, a loose collection of sub-disciplines." (IS peer) This statement led us to ask the other interviewees to comment on it in a feedback cycle. Three explicitly answered this question and agreed that they have a similar impression: research efforts are considered more fragmented than teaching contents, and this is considered a "problem" within the IS discipline. One interviewee reports on his experience that most IS faculty refer to more practice-related sources in class than they do in their research because of student demand: "It's interesting as I talk to a number of faculty members, in terms of what they teach in class, as opposed to what they research. What they teach in class, the materials they use, are articles from the *Harvard Business Review*, articles from the *Sloan Management Review*, increasingly today articles from *MISQ Executive*. And they also use their own consulting experience. [...] the teaching comes from the journals I noted above — not from our most abstract journals." Hence, we propose:

**P\_15:** The IS discipline lacks coherence of research and teaching on the bachelor and master levels.

Discussions with WI peers concerning this topic indicate a considerable difference to the perceptions of IS peers. All WI interviewees describe the coherence of research and teaching in WI as very close and as a "very good unity," which would naturally result from research projects at most WI research groups. Approaches for cooperating with students in research projects are theses, internships ("Praktika") and specialized courses related to current research topics. It is argued that many research projects, which are aimed at developing a prototype, even require close connections with WI teaching in terms of internships and diploma theses. On this basis we formulate the following proposition:

**P\_16:** A strong coherence of research and teaching is typical for the WI discipline.

## V. DISCUSSION OF IMPLICATIONS

Beyond contributing to the evaluation of propositions, the interpretation of the peer interviews has led us to formulate a number of further abstract propositions concerning the future development of both communities. In this section, we will present these propositions together with suggestions for coping with the corresponding challenges.

### Reflecting and Developing a Research Strategy Is of Pivotal Relevance for Both Communities

The interviews confirmed the assumption that in both cases development did not mainly result from a rational plan or a free competition for scientific knowledge as envisioned by Popper [1968]. Instead, the development can rather be interpreted as a social construction [similar as suggested by Kuhn 1970]; however, with the main difference that scientific revolutions like those Kuhn discovered for the development of the natural sciences did not happen. Instead, the aspiration for legitimacy seems to be a pivotal force that drove the developments: WI was primarily driven by opportunities to cooperate with practice and receive funding (proposition **P\_14**), while the development of IS was primarily driven by the need to gain legitimacy within business schools (proposition **P\_12**). This implies that in both cases the research profile did not primarily result from a rational conception, but from opportunistic action.

#### *Suggestion:*

The debates concerning research objectives should take this arbitrary element of the communities' development into account and emphasize a rational perspective: What are interesting research goals and what are promising strategies to achieve them? Especially for IS it might be a good idea to have a look at other concepts of organizing an IS discipline, such as WI or the Scandinavian approach to IS. Ph.D. programs in IS should put less emphasis on the one dominant research paradigm. In WI, there is need for more debates, especially on developing and applying appropriate research methods as well as mediating them in yet to be developed Ph.D. programs (see following).

### Both Communities Could Benefit from a Mutual Convergence

The peer interviews indicate that both communities have specific strengths and weaknesses. In some of these cases, a criterion that marks a weakness of one discipline marks a strength of the other. For instance: While IS has a strong tradition in conducting empirical research, IS researchers even have problems getting access to practice<sup>10</sup> (see proposition **P\_5**). On the other hand, in WI empirical research plays a marginal role only (see propositions **P\_3**, **P\_4**). At the same time, WI researchers have rather good access to practice and hence to empirical data (see proposition **P\_6**).

#### *Suggestion:*

Convergence cannot be prescribed. However, it can be fostered by increased mutual understanding. Since most IS researchers tend to not know much about WI (as well as about other flavors of IS research), this may suggest that there is a special need for communicating the peculiarities of WI. To accomplish this, it becomes imperative that specific WI research is published in English and that corresponding journals are made available to IS researchers. We see this development already happening: An increasing number of WI researchers participates in and contributes to IS conferences. Also, the amount of English publications in WI is growing. We are afraid, however, that this would not be sufficient for creating a critical mass and bridging this gap. Additional impetus could be generated by special exchange programs focusing on Ph.D. students and post docs who, in turn, would help closing this gap.

### Both Communities Could Benefit from Developing a More Attractive Research Culture

From an idealistic perspective the core of research is the interest in and appreciation of knowledge as a value in itself (Aristotle). In IS it seems that publishing in renowned journals has become an end in itself that does not necessarily correspond to a researcher's interest in knowledge<sup>11</sup> (see proposition **P\_12**). As a consequence, academic careers are not regarded as an attractive option by many. In WI, too, publishing is a main driver of research. In addition, a scholar's reputation depends on securing external funds. This includes industry projects with sometimes little reference to research questions<sup>12</sup> (see propositions **P\_7**, **P\_8**).

<sup>10</sup> "We have neglected the practitioner community and we've done so at our peril. [...] We're not able to get access to corporations any more." (IS peer)

<sup>11</sup> "[...] from an academic perspective the objective of research in the US is to get published." (IS peer)

<sup>12</sup> "Unfortunately many projects with industry are not research projects, but projects to develop some artefact for industry." (WI peer)

*Suggestion:*

Both communities should aim at an attractive research culture that emphasizes the appreciation of sophisticated knowledge, rational debates as well as a free, yet competitive atmosphere. This includes rethinking the current practice of “publish or perish” as well as a higher level of contemplation (or an appreciation of peace of mind) and discursive competence. It also recommends a more relaxed attitude toward fads and — for WI — emancipation from industry funds (which does not mean to disregard them in general). In the end, an attractive research culture creates an oasis of intellectual hedonism, which is certainly not a scientific nirvana for everybody, but would help to attract the most gifted and ambitious people to our field.

**Both Communities Should Rethink Their Relationship to Practice**

In both communities the relationship to practice is a critical success factor, however, for different reasons. In IS business firms mainly serve as suppliers of data, while solving practical problems faced by these firms is usually not a focus (see proposition **P\_5**). This results in a relationship that lacks mutual appreciation. The reputation of IS researchers with business executives seems to be poor (proposition **P\_9**). As a consequence, there are IS researchers who have a hard time getting access to companies. WI, on the other hand, suffers in a way from its success in building, maybe, too close relations to companies. The benefits from having access to real world problems are contrasted by specific constraints of projects with industry. They require much attention to technical details, thus distracting from inspiring research questions.

*Suggestion:*

IS should aim at interacting with practice. This requires IS researchers to have something to offer to practitioners. Therefore, IS should develop concepts, methods, etc. that are suited to support practitioners and their work. WI needs to be careful not to be mistaken as (cheap) consultants by business firms. Therefore, it should stress an academic profile that clearly distinguishes it from IT consultants. In the end this will be honored by practice: Researchers who do not act as yet another consulting firm, but instead focus on essential concepts and innovative ideas beyond the hype created by the latest fads, provide the chance to enrich decision makers' perspectives.

**In Both Communities Is Potential for Improving the Integration of Research and Teaching**

The relationship between research and teaching is different in both communities. At the bachelor and master level, curricula rarely include topics that are subject of current IS research (proposition **P\_15**). In WI, undergraduate curricula correspond clearly to the discipline's research agenda, according to the German tradition of unity of research and teaching (proposition **P\_16**). At the postgraduate level, however, the situation is different. In IS, Ph.D. programs provide a comprehensive training targeted at the specific needs of conducting research projects. In WI, Ph.D. programs are not common. Instead, in the traditional German system, those selected for a position as a research assistant are expected to be qualified for research without further formal education (such as enrolling in additional course work). This tradition may have contributed to the relatively poor deployment of research methods in WI.<sup>13</sup>

*Suggestion:*

IS should go for a more exciting research agenda. Incorporating the design of new IT-enabled action systems in organizations as well as the high level design of IT artifacts could be a good choice for accomplishing this goal. This would imply a revision of Ph.D. studies aiming at the mediation of a more attractive and inspiring research culture (see above). WI should develop training programs for Ph.D. candidates that are tightly integrated with the rich tradition of conducting research projects.

**VI. CONCLUSIONS**

The study presented here focuses on comparing two forms of research on information systems: Information Systems (IS) in North America and Wirtschaftsinformatik (WI). The results of the study indicate that neither of these two conceptions can serve as an ideal model. Therefore, it does not seem to be a good idea to adopt a particular style of research exclusively like the one proposed by IS. Instead, we would hope that an international exchange among the various communities, including, e. g., also the Scandinavian or British scholars, will contribute to further develop the field into a more mature and satisfactory state. Achieving this goal implies both, cultural and methodological challenges. Editorial boards, program committees and conference organizers would need to be less focused on a particular paradigm and be open to a wider range of approaches to research on information systems. In order to allow for more individual freedom in conducting research projects without compromising academic

<sup>13</sup> For example, two WI peers express their concern that WI research suffers from methodological weaknesses, which would be reflected in many publications and in many “research by doing” projects.

standards, there is a need for a configuration of research methods (for a respective suggestion see Frank 2006b]. Toward the end of this development process, the information systems discipline as we perceive it today may not exist any longer and may, possibly, become absorbed in other functionally related disciplines. Instead, we may witness the emergence of new fields with international research communities that establish themselves in the various interface areas of business and administration, information science, computer science, and sociology. However, this should not result in a “free-for-all situation” [Banville and Landry 1992, p. 87] either: essential requirements of scientific research, such as originality, abstraction and comprehensive justification need to be emphasized. Regarding the enormous diversity that characterizes the field today, this kind of diversification might be the only chance to achieve a more focused international competition. In the best case, this would not result in the field to vanish but to blossom, however, with a variety of flowers.

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EDITOR'S NOTE: The following reference list contains the address of World Wide Web pages. Readers, who have the ability to access the Web directly from their computer or are reading the paper on the Web, can gain direct access to these references. Readers are warned, however, that:

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## APPENDIX I: CONTEXT OF THE INTERVIEW STUDY: IFWIS PROJECT

The historical development of the disciplines potentially relates to numerous aspects that we cannot take into account entirely. In the IFWIS project we consider the following issues particularly relevant—each related to the disciplines' status today and to the respective historical development:

- a) Subjects, objectives, and methods of IS/WI research
- b) Institutional integration of IS/WI professors and IS/WI departments.
- c) IS/WI teaching contents (textbooks, curricula)
- d) Relationship to practice in IS/WI teaching and research.
- e) The success of the fields in terms of:
  - o the size of the fields (student numbers, degree programs, departments and professorships);
  - o perception by business practice; and
  - o influence and perception of research results (by other disciplines, peers, practitioners).

We chose a multi-method research approach in order to capture the diverse perspectives and influences that have shaped the fields. Our research approach includes the following components:

- A literature review of (partly presented in the previous section of this article)
  - o discussions on the disciplines' status;
  - o historical accounts of the disciplines' development;
  - o model curricula and their changes over time; and
  - o current introductory text books [results have been published in German in Schauer and Strecker 2007; Frank and Lange 2004].
- A publication analysis of major journals and conference proceedings [in progress, first results have been published in German in Lange 2005c; Schauer and Frank 2007].
- A survey of IS/WI departments at universities in order to identify the size of the field [in progress, first results have been published in German in Schauer and Frank 2007].
- Interviews with IS/WI peers who have observed and shaped the field since its beginning (as presented in this article).
- A survey of IT practitioners to determine the perception of the field in business practice (in progress).

The described research approach of the overall IFWIS project provides various opportunities for triangulation; For example, impressions concerning dominant subjects and methods of research gained from discussions in the literature can be supplemented by the analysis of publications in premier IS/WI publication outlets. Perceptions of IS and WI researchers concerning the status of the field can be enriched by comparative data on the respective institutional size and by the perception of IS practitioners concerning the success of the disciplines.

## APPENDIX II: SNOWBALL SAMPLING METHOD

Snowball sampling, a non-probability sampling method, is an approach for locating information-rich and typically respected key informants within their respective social system. It permits the identification of people with particular knowledge, skills or characteristics that are sought as knowledgeable people or experts as part of a committee, consultative process or similar purpose. It uses recommendations to find people with the specific range of knowledge or skills that have been determined *a priori* as useful and desirable. The technique thus aims to make use of community knowledge about those who have knowledge, skills or information in particular targeted areas. This sociometric technique has been found to be a highly valid measure to identify such respected and qualified individuals within a community [e.g., Heckathorn 1997, 2002; Rogers and Shoemaker 1971; Salganik and Heckathorn 2004].

However, if the overall population includes diverse and/or separated communities, snowball sampling implies the risk of producing a biased selection: recommendations are restricted to members of the own community or of the own interest group. It seems that in the case of the two research fields which are subject to this study this problem can widely be excluded. First, the number of peers that fit the profile is relatively small. One can expect that each member of the target group knows all others. Second, it is our impression that both fields are characterized by the lack of clearly separated or even hostile sub-communities. Therefore, we assume that those who participated in the snowball sampling did not intentionally withhold names of relevant peers. This impression was confirmed by the course of the sampling. The same set of individuals emerged in a number of rounds of inquiry. In addition to these sets of peers we decided to augment both samples with one researcher who had been familiar with both communities for a longer time period

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