Exploring the assumptions underlying information systems methodologies
Their impact on past, present and future ISM research

Nancy L. Russo
Northern Illinois University, DeKalb, IL, USA, and Executive Systems Research Centre, University College Cork, Cork, Ireland, and
Erik Stolterman
Umeå University, Umeå, Sweden

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Abstract Assumptions about an object under study can influence research in many ways. These preconceptions color the researcher’s perspective, and influence the research purpose, the research questions addressed, and the research methods used. This paper identifies and analyzes the following assumptions regarding information systems methodology (ISM) research: the positive impact of methodologies on the process and product of information system design; the irrationality of design practice; the existence of knowledge about good design practice; the ability to communicate design knowledge to practicing designers; and the ability to change the rationality of design practitioners. The impact of these assumptions on ISM research is examined for the purpose of highlighting limitations of past research and identifying more promising directions for the future.

Introduction
All humans operate from a particular point of reference, or worldview. This worldview is based on the environment in which the human operates as well as the experiences that individual has accumulated over time. This view of the world encompasses a variety of preconceived ideas about the people, objects and activities with which we interact. It is important for us as information systems researchers to examine our own assumptions regarding what we are studying to determine whether our preconceived ideas or prejudices are limiting the scope and nature of our research.

This paper will examine several assumptions that have been identified in the existing literature and practice regarding one particular area of study: information systems methodologies. The set of assumptions was developed as a result of the authors’ experiences in studying the practice of information systems design and in exploring the related literature. Whereas we would not claim that these assumptions should be viewed as scientific results, we nevertheless believe that they can serve as intellectual tools in our ongoing attempts to study the role of information systems methodologies and to understand the purpose and goal of IS research in general.
An information systems methodology (ISM) is generally considered to be a systematic approach to computer information system design and development. A methodology consists of a set of guidelines, activities, techniques and tools, based on a particular philosophy of system development and understanding of the target system (Wynekoop and Russo, 1995). Information systems methodologies are promoted as a means of improving the management and control of the system design and development process by specifying and standardizing the activities to be performed and the documentation to be produced. Government standards and certification bodies have encouraged the use of formalized methodologies (Fitzgerald, 1994).

Although there are a wide variety of development methodologies available, research indicates that they are not universally accepted. Numerous studies of methodology use have found that while many organizations report that they have an information systems methodology, typically less than half report using it consistently. Nearly all designers report some level of adaptation of the methodology to fit particular situations (Stolterman, 1992; Fitzgerald, 1994; Russo et al., 1995; Hardy et al., 1995).

There are a number of possible explanations for this less than complete acceptance of methodologies. Changes in organizations’ development environments, due to the popularity of client-server architectures, distributed systems, and graphical user interfaces, and changes in the technologies themselves may be changing both the process and product of system development. Methodologies’ linear, technical focus and failure to recognize context, contingencies, creativity, and intuition may limit their usefulness (Fitzgerald, 1994). It appears that there is a misfit between existing methodologies and the needs of developers (Stolterman and Russo, 1997).

A misfit has also been identified between methodology research and practice (Wynekoop and Russo, 1995, 1997). Only a small percentage of research on information systems methods has employed in-depth studies of the actual process of system design and development. The bias towards conceptual/normative studies and one-shot surveys has limited the knowledge of what is actually happening in IS practice. We will never be able to understand practice if we look only at “conscious expressions and manifestations”; we also have to look for the “basic assumptions representing theories in practical use” (Dahlbom and Mathiassen, 1993).

The approach we take in this paper is to explore some of the assumptions that we have found to be underlying research on information systems methodologies. If these assumptions are not explicitly identified and analyzed by IS researchers, we believe that there is a risk that research and practice will continue to face the same problems of “misfit” over and over again. Newman (1989) illustrated ways in which beliefs shape practice in IS development. We would hold that beliefs – or assumptions – held by IS researchers influence the nature of research on IS methodologies, in terms of the research issues addressed, the types of studies performed, and the interpretation of results.
When studying assumptions we need to focus on thoughts and ideas that we normally find both natural and unquestionable. Important assumptions might many times be invisible to us, not so much because they are difficult to see, but because they appear to be generally accepted as fact, rather than as just one interpretation of a contextual situation.

By uncovering these assumptions, and reflecting upon their impact on ISM research and practice, we can gain a better understanding of what we are trying to do as methodology researchers to influence the practice of design. This exercise forces us to confront our goals as researchers. The choice of research goal is not only about what to study, but also from what perspective to approach the study.

If we view our research goal from the perspective of the organization, we may see our role as helping organizations to improve systems design in terms of efficiency, economy, or productivity. If we focus our research on improving systems design practice, we may work towards providing better tools or a better work environments for the information systems professional. Or we may focus on the benefits for the ultimate system user, in terms of better systems, or on the benefit for society as a whole through the impact on the economy, the environment, work conditions, or democracy.

There is a close relationship between what we as researchers consider to be our goals and the underlying assumptions governing our thinking and behavior. By examining our assumptions we may open up for discussion the question of why we do research. An approach for improving our research is to work in a critical and self-reflective way by constantly challenging our own beliefs and goals. This paper is an attempt at such a process.

In the following section we will present and discuss some of the underlying assumptions of ISM research, and identify examples of these assumptions. These examples are derived from existing ISM literature as well as our own experiences as IS researchers. Next we will challenge each assumption and then discuss the implications for ISM research and practice.

**Assumptions about IS methodologies**

Of course there are many implicit assumptions regarding information systems methodology research, development, and use. We have chosen to focus on some of those we believe to be fundamental, but seldom recognized or acknowledged by ISM researchers. It should be made clear that we do not mean to imply that all ISM researchers follow this set of assumptions; in fact, evidence can be found that some researchers have explicitly chosen to challenge these assumptions. However, this set of assumptions is believed to represent a large portion of ISM research over the past several decades.

We do realize that some of these assumptions at first can appear very ordinary and common-sense, for instance the first one we present. But we do believe that it is exactly the commonality of the assumptions that make them “dangerous” and very seldom analyzed. To see and recognize our most basic
assumptions means to challenge the thoughts and ideas that we believe to be obvious and self-explanatory.

The assumptions that will be discussed here are the following:

1. the positive impact of methodologies on the process and product of design;
2. the irrationality of design practice;
3. the existence of knowledge about good design practice;
4. the ability to communicate design knowledge to practicing designers;
5. the ability to change the rationality of design practitioners.

A discussion of each assumption and its impact on ISM research follows.

(1) Methodologies have a positive impact on information system design
The fact that IS researchers and practitioners continue to develop and promote new methods indicates that there is some underlying assumption that methodologies add value to the development process and/or product. Evidence of the belief in the positive impact of information systems methodologies is also found in what researchers and practitioners say about methodology use.

The belief in the good of methodologies is widely held. Introductory systems analysis and design texts typically present methodological systems development as a necessary approach to reach good design. Organizations continue to buy and create methodologies. Designers and managers generally believe that ISMs improve communication and standardization in the development process (Russo et al., 1995), conditions that often a priori are thought to be a prerequisite to a qualitative design process.

It is often implied that failing to use the “correct” methodology will result in projects that are overdue and over budget and in bad systems. Chatzoglou and Macaulay (1996, pp. 209-14) write that “the problem of not using a methodological approach during the development process is well known…” and “… the importance of employing a methodological approach during the system development process is widely documented …”. (It should be noted, however, that they refer almost exclusively to methodology texts to support these statements.)

The benefits of methodologies are often described as similar to the benefits of scientific research methods, as in “The software engineering design process encourages good design through the application of fundamental design principles, systematic methodology, and thorough review” (Pressman, 1987, p. 192).

This “pro-methodology bias” is reflected in many methodology studies, which ask practitioners “which methodology do you use” rather than “when do you use the methodology and when do you work around it?”

This focus on “using” the methodology in the complete sense may contribute both to the identified misfit between the proposed benefits of methodologies and to the lower-than-expected levels of usage reported in surveys. By
assuming that methodologies are basically good, we may neglect to investigate and differentiate between the circumstances under which they are beneficial and those in which they are not.

(2) The practice of system design is basically irrational

The assumption of an irrational practice is a necessary condition for the development of new methodologies. If present practice were not considered to be irrational in some way (ineffective, slow, leading to poor quality, etc.), then there would be no motivation to make it more rational. That is, if design practice were already considered to be rational, then there would be no need for new methodologies.

To be rational can in this context be defined as – to act in a way that, to an observer, makes sense according to both means and ends. If the practice of system design is rational, then we would expect to see predictable, positive outcomes from methodology use, based on a reasonable process. However, this is not always the case.

We see examples of the suspected irrationality of design practice in methodology writings and research. Robey and Markus (1984) state that system development can be viewed as not only a rationally motivated process, but also as a political ritual. Parnas and Clements (1986) advocate “faking” rationality when using methodologies. This is done by producing all the documentation required by the methodology, even though the diagrams, etc. are not used in the design process. The benefit of this is that the system designers get to work the way they want to work (unhindered by methodology) and yet produce the documentation required for system maintenance. So, even if system design is basically thought to be irrational we can pretend it is rational. In these examples design practice is basically understood as (inevitably) irrational, and therefore a suitable goal for methodology researchers.

In an analysis of engineering and software engineering standards of practice, Shapiro (1997, p. 286) writes, “The design process in any area of technological practice is often just as potentially variable as the ultimate outcome of that process, the artifact it produces”. Because we know that a great variability exists in the information systems produced, it would then follow that the development processes could be just as variable. A similar conclusion can be reached by studying practice as it is carried out, as for instance in “In many organizations a mild form of anarchy reigns … Some people develop an orderly and efficient approach to software development by trial and error, but many others develop bad habits that result in poor software quality and maintainability” (Pressman, 1987, p. 15).

But the most convincing argument for existence of an irrational practice is to most people all the problems experienced with projects not done on time and within the decided budget and not reaching the desired result. It is easy to interpret these problems as signs of irrational actions. And if the definition of rationality is to perform without those problems, then practice is irrational. With this assumption it makes good sense to create new methods with the aim
to solve some of the experienced problems – i.e. to make practice rational. As we will show later on, this assumption may not be the best possible way to interpret present practice.

(3) People can identify and make explicit their understanding of good design practices
The third belief about design practice that we have found is that it is possible to have or to come up with knowledge about what constitutes good design practice. If this was not believed there would be no point in constructing new methodologies.

Evidence of this comes from normative, prescriptive statements describing how design should be done, as well as from descriptions of successful development projects. Examples of this can be found in systems analysis and design texts, in addition to papers and books about development. All these statements rest on the assumption that the authors have the ability both to recognize and make explicit “good practice”.

There are, though, differences in the beliefs on how “good practice” can be recognized and, even more importantly, made explicit. Some advocate the transformation of good practice into formal methods, while others advocate more descriptive or even narrative approaches. One example of an attempt to make good design practice explicit is Wetherbe and Vitalari’s (1994) systems analysis and design text. They have used the results of a stream of research regarding “best practice” as a basis for their text.

Everyone who designs and develops a new methodology must believe that they have the skill to identify and make explicit “good practice”. In a study all system designers stated that they had the skill to know what to do in a specific situation – they knew good practice (Stolerman, 1992). What distinguished them from developers of methods was that they could not easily make their good design practice explicit. To a practitioner it is enough to recognize good design practices but a developer of methods also has to be able to make, and to believe it is possible to make, these practices explicit.

(4) It is possible to communicate design knowledge to practicing designers
The third belief is about communication. There is no reason to formulate knowledge about good design practice if it is not believed that it is possible to communicate this knowledge to those who do not have the same knowledge. According to this belief important knowledge cannot be “tacit knowledge.” It must be possible to communicate this externalized knowledge.

This assumption is present in almost all fields of professional work. Education is built on this assumption, even if there are very different opinions on the relative difficulty to communicate “knowledge” and “ability”. If design practice is thought to be based on knowledge it seems to be reasonable to assume that it is possible to transfer that knowledge. If design practice is considered to be an ability, the difficulty of communicating good practice becomes more apparent. This was found in a small study where students in
computer science were compared with students in information systems. Computer science students were more willing to see design practice as based on knowledge and therefore easier to transfer, while information systems students saw practice as based on personal abilities, and also more difficult to transfer (Andersson et al., 1997).

We can state the obvious that this assumption is very fundamental and common, based on the existence of courses in systems analysis and design and conferences, seminars, and books on design methodologies – all of which have as their purpose to “deliver” design knowledge to those who need it.

(5) It is possible to change the way practicing designers view the design process
The last belief is perhaps the most important. Every method is in some way meant to change the behavior or thinking of the designer; therefore the designer’s rationality and view of the process must be seen as something that can be changed.

This assumption implies that through communicating information in the form of methodologies and design practices, we can affect the way designers think and act in regard to the design process. This is closely related to the previous assumption, but goes a little further. If this assumption were not true, there would be no reason for the existence of methodologies. But because we do see a constant stream of new methods, books describing these methods, automated tools embodying these methods, and classes teaching these methods and tools, it appears that researchers and practitioners do believe that the thinking and behavior of designers can be changed.

There are numerous examples of explicit descriptions of this belief. “The value of the methods and tools, and their conglomerates – methodologies – is that they embody practices and cognitive frames that can be taught, shared, and refined over continued trials” (Hirschheim et al., 1996, p. 25). Another example is “Successful introduction of OO technology needs both good education for every developer and managers who know what they are doing… OO has succeeded spectacularly with individual developers and small skilled teams” (Martin, 1993, p. 45).

These examples show the strong belief in the possibility to change the behavior of designers by education i.e. by changing their way of acting in a rational way.

**Summarizing the assumptions**
If these assumptions are present then the task of developing design methodologies becomes both a possible and a worthwhile task. Based on these assumptions methods become the most promising way to enhance efficiency and quality in IS design.

But we have seen – in our research and in other studies – many forms of “misfit” between the methods presented by researchers and those used in practice. It is not unusual to see users not willing to use the methodology or situations not suitable for a specific methodology. If we hold the assumptions
our response to these misfits will probably be to design a new methodology or to redesign the present ones. It is seldom that these basic assumptions are challenged.

These assumptions are presented here with the purpose of making explicit some of the basic presuppositions for research on methodology creation and use. We argue that if these beliefs are correct and the design and implementation of methodologies were done in a reasonable way according to the assumptions, then the success of ISMs would be both common and predictable. But, this is not the case. ISMs are not universally accepted among practitioners, and there is evidence of significant problems with the use of these methodologies (Stolerman, 1992; Fitzgerald, 1997).

In the following section we will review what it means if we challenge these assumptions.

Challenging these assumptions
It has been said that the opposite of a great truth is also true (McGuire, 1973). Obviously, the assumptions described above are extreme positions. We can also learn something by examining the inverse of each assumption. Our goal is not to “prove” that an assumption is right or wrong, but instead to focus our attention as researchers on hidden beliefs that might influence our work. If we can find evidence that supports the inverse of an assumption, then we have added greater complexity and depth to the issue. If we cannot find evidence to support a particular “anti-assumption”, then we have strengthened the original proposition. In either case, we believe that the exercise of examining these assumptions and their inverse is worthwhile.

(1) Methodologies are not beneficial for the design process
The meaning of this inverted assumption can, for instance, mean that methods impose unwanted restrictions on the design process. For example:

Some might deny, either in principle or from despair, that any formal account of the necessary process should or could be given. Surely any formal account might either be inhibiting if used prescriptively, cutting off exciting lines of thought, or inadequate if used descriptively, given the glorious richness which human beings can bring to any task? (Checkland and Scholes, 1990, p. 4).

There are attempts to challenge some of the overall beliefs in methods, for instance in the work by Introna (1996), Baskerville et al. (1992) and Coyne (1995). Baskerville et al. (1992) suggest that the entire concept of methodological development is obsolete in today’s organizations. In their view, methodologies are a burden and constraint to the development process. It is suggested that in a rapidly changing organizational environment, adherence to methodologies limits the ability to respond to these changes, and results in inappropriate or even failed systems.

Even facing these challenges, it is possible that a new role for methodologies may be found – one which is flexible enough to support dynamic organizational contexts.
These attempts to challenge the basic purpose of methods are still not having a great impact. Textbooks still present ISMs as if they cannot be questioned. And the foremost purpose of IS research still seem to be to add yet another method to the vast number already present.

(2) The practice of system design is basically rational
There are ways to explain and understand design practice as it is conducted, with all its problems, still as rational. This is done by radically changing our understanding of what it means to be rational and especially of what characterizes good practice.

Two of the strongest proponents for this view are Schön (1987) and Suchman (1987). To Schön design practice is not possible to understand based on “technical rationality”; it is instead a rationality characterized by artistry and situatedness. Suchman also uses the idea of situatedness and contextual dependence. Both these views shape a new understanding of design rationality where “… rationality anticipates action before the fact and reconstructs it afterwards” (Suchman, 1987, p. 53). However, in a system design context, all contingencies cannot be anticipated. The process of system design, particularly when integrating separate information systems, has been defined as “fitting together a complex jigsaw puzzle, without an understanding of the overall jigsaw picture” (Finkelstein, 1992, p. 8).

This might give us a chance to understand what happens when for instance the field of software engineering attempts to apply scientific, engineering principles to the design and development of information systems. When this is done a universal rationality is forced on a design practice based on a situated rationality. There is a collision of a private and public rationality (Stolterman and Russo, 1997).

Design practice can, according to Schön and Suchman, be understood as basically rational, but the meaning of being rational and the importance of existing design practice has to be re-evaluated. After that, practice can be approached based on a new understanding of what it means to be rational, which also increases the possibilities to change present practice. This section shows that we can find ourselves in a situation where we are trying to work with different understandings of practice and it becomes clear that the common understanding of rationality is not enough developed to form a basis for methodological development.

(3) People cannot identify and make explicit their understanding of good design practices
Designers are not always able to explain why they do what they do. It may be that whereas designers can say after the fact that a particular project was good or bad (successful or unsuccessful), they may not be able to isolate the effect of a particular design practice on the outcome. There are so many situational and contextual factors that influence the outcome of the development process that it
may be difficult if not impossible to identify which design practices led to which outcomes.

In a study of system designers it was shown that most of them could not present a coherent view or even basic concepts describing good design quality in systems design (Stolterman, 1992). This may be explained by research focused on the concept of “tacit knowledge” (Polanyi, 1973). Tacit knowledge is defined as a kind of knowledge used in practice. It is a knowledge that cannot easily be made explicit by the practitioners themselves (or any one else). It is a situated and context dependent skill (Suchman, 1987).

The concept of “flow” has also been developed to frame the kind of experience a practitioner has when he/she is carrying out a task in the best possible way – in a way that creates “flow” (Csikszentmihalyi, 1990). Flow is a state of action typical of the professional practitioner when he/she experiences a balance between challenge and pressure. In this state, or after the fact, the practitioner has difficulty in reconstructing the logic and rationality behind the process (Csikszentmihalyi, 1990).

There exists a lot of research pointing to the fact that some aspects related to skill performance are not possible to frame and make explicit. This is a fact that cannot be dealt with by further research advocating more and more detailed description (or prescription) of practice. Instead these findings show that we have to find new and different ways to approach the core of a designer’s skill. There are ways we can help a designer without trying to remove the real core of design – which is that it has to be based on situational considerations and on judgment.

(4) It is not possible to communicate design knowledge to practicing designers

The inability to communicate good design knowledge or principles could be due to designers’ distrust of “the ivory tower of academia” because they feel researchers do not understand the reality of current design practice. It also may be due to the lack of communication in general between academia and practice. A great majority of IS research is not published in journals typically read by practicing system designers. There is little overlap between professional and academic conferences. Maybe it is not possible, both depending on intrinsic properties of design practice (as mentioned above) and also on political reasons, to communicate good design practice from researchers to practitioners.

An example of this can be illustrated by a study of methodology use. This study found that 83 per cent of the projects developed by academics use a methodology; 70 per cent of the projects developed by software houses or consultants use methodologies, but only 34 per cent of the projects developed in industry use methodologies (Chatzoglou and Macaulay, 1996). The acceptance of academically developed methods is low and the general rate of transfer of research results to practice is slow (Bubenko, 1986). It appears that whereas researchers and consultants are willing to use their own methodologies, they have not been particularly successful in spreading these methodologies outside their own institutions.
Continued development of new methodologies is not likely to change this outcome. Instead, a new paradigm of greater cooperation between research and practice is required to develop methodologies which are accepted by practicing designers.

(5) It is not possible to change the way practicing designers view the design process
In a study of 20 practicing designers, the designers strongly believed that skill can only be gained through experience, not through education or methodologies (Stolterman, 1992). DeMarco and Lister (1989) found that even when a methodology use is rigidly enforced, there is a discrepancy in design style. This would seem to imply that methodologies cannot be “inflicted” on designers (Fitzgerald, 1994).

It can be argued that the prevailing habits and traditions within a profession and also the surrounding cultural climate makes it almost impossible to, in any radical way, change the individual designers’ conceptions and “theories” of their own skills and competence (Schön, 1987). To make such an impact, to really change practice, may not only demand knowledge on what constitutes good practice and communication skills – maybe it also demands true rhetoric skills. The present professional skill is often at the core of the identity of a profession. To change this core is therefore challenging to their identity and professional authority (Schön, 1987).

If it is true that methodologies cannot be used to change the behavior of designers, then there is no need to have methodologies at all. Developing new methodologies will have no influence on the design process. Following this scenario, there is no reason to study design processes, because even if we are able to learn more about “good” design practices, we will not be able to change other designers’ behaviors to incorporate these practices.

Summarizing the challenges to the assumptions
As shown in this section, evidence can be found and arguments can be raised which conflict with the initial list of assumptions. This apparent conflict is not surprising. Little – some would say nothing – about system design is absolute. Instead, this contradiction tells us that our assumptions about ISMs are more complex than they appeared at the outset. We interpret this new complexity as a call for further research.

But what kind of research? We believe that by challenging these assumptions we are faced with a much more complex question – how can we as IS researchers contribute in the best way to present practice, and what should be our purpose?

Implications for design research
We do not believe that we have shown the assumptions to be basically wrong or right. What we have done, initially, is to make them visible, and through the analysis of the assumptions, added some complexity to the issues. This has
also opened up a different platform for discussions around the purpose and
approaches taken in the research and development of ISMs.

ISM research can be viewed as a means of translating research findings into
practice (i.e. design based on scientific truths). Or, ISM research can be viewed
as a way of formulating existing good practices into a universal language and
then transferring that into new practices. We believe the latter way is the only
possible option if we are to avoid repeating the mistakes of the past. Following
this path, then, requires that ISM research focus more on existing practice.

We do see some benefits to be gained from information systems
methodologies. If we did not, then there would be no point in continuing to
study ISM development and use. This does not mean that we expect there to be
a universal ISM that is applicable in all situations. However, methodologies can
be viewed as “way stations” between the universal and the particular in regard
to system design. Methodologies can embody the good standards of practice
identified through research (see Shapiro, 1997).

Some irrationality must exist in the design process, at least in the sense that
rationality becomes so complex that it defies every attempt to be fully
prescribed or even described. If not, then one methodology could be applied to
all situations, the same way every time, with the same outcome. But this seems
impossible to achieve in practice. Instead, methodologies are ignored, adapted,
or used on a piecemeal basis. This might explain why problems arise when the
goal of a methodology is to standardize or control the process. By having
standardization and control as a goal, a price is paid in terms of flexibility
and creativity. Based on studies of practice it appears that IS methodologies are
more likely to be used if they support the creative activity of a designer by
allowing designers the freedom and flexibility to shape their own rational
views of the design process and by acknowledging the uniqueness of every
design situation.

Every purpose of using methodologies will have side-effects. To be able to
develop methodologies that will have a desired influence on the design process
requires an understanding of the nature of the design process and its practice in
its full complexity and richness.

It is possible to communicate good design practices, but there are a number
of obstacles to overcome. Although descriptions of methodology use in practice
would be useful, few are found in IS scholarly journals. Practice descriptions
rarely make it through the review process – both for lack of a priori intention to
do research and for the bias towards discussing only successful practices
(Avison and Fitzgerald, 1991; Wynekoop and Russo, 1997).

It is possible to change designers’ behavior. Some change happens naturally
as designers gain experience. The problem is how to convince designers that
they can learn from the experiences of others. How can we get the knowledge
we gain from research into practicing designers’ learning experience?
Methodologies should “leverage the wisdom” of the designer, allowing both
individual ability and past experience to shape the situated use of the
methodology (Fitzgerald, 1994, p. 700).
Designers do believe that they can identify good practice (Stolterman, 1992). Perhaps what is needed is a better language for articulating different aspects of information systems design. Practitioners have the experience, they have practiced their skills, they have been challenged in their understanding of rationality – but they usually do not have time to reflect and interpret their experiences. ISM research should therefore as one of its goals try to create concepts and theories that can help practitioners to reframe their own experience and to make progress in their understanding.

From this perspective, ISM research will not be a provider of ready-made methods or guidelines; instead the purpose will be learning. Therefore, research should focus on creating conceptual tools that will allow practitioners to reflect, analyze and develop their skills and competence. We believe this to be a major and important shift in the purpose and goal of ISM research.

Conclusions

From the previous discussion of the implications of the underlying assumptions regarding ISM research, it seems that a more developed understanding of systems design practice is needed. If the underlying assumptions are taken for granted, IS methodology research and development will not make any real progress. Instead we will only experience a continuing reappearance of methods based on the same presuppositions. The research that has already focused on design practice has shown that there is a methodological “misfit” and as long as the ISM research community does not recognize that situation we will not see any real advancement.

What then is the way to go? We argue that there is a need for a new focus on research on design practice. We need to redefine the role of ISM research and researchers. We need to recognize and take advantage of the specific competences of researchers – not as deliverers of new normative structures to practice – but as skilled commentators and critics of prevailing practice. Whereas practitioners are primarily concerned with “getting the job done”, researchers may have the time and opportunity to reflect upon practice in a way not possible for practitioners. By examining practice from a disinterested perspective, researchers can give new interpretations of practice, make assumptions visible, and criticize bad “habits” and traditions when technology, organizations and society are changing. Researchers have the advantage of being able to look at the big picture because they are able to integrate the experiences of many system designers in many different environments.

To be able to do this, ISM research must focus on in-depth studies of practice, create rich descriptions of practice, and come up with interpretations and analysis of this practice. And all this has to be done in relation to a much more developed sense of purpose. As we stated earlier, research into ISM can be done to help organizations to improve systems design or to improve design practice or for the best of the user or for the best of society. Depending on what we choose as our overall purpose the research will take very different shape. Understanding why we are doing ISM research can better guide us in
determining *how* to do it. Currently there is almost no discussion on the issue of research purpose. We believe that there is a whole field of underlying assumptions around ISM research purpose that also has to be revealed and analyzed. But that is another paper.

References


