# EDITOR'S COMMENTS

## Beyond Outdated Labels:  The Blending of IS Research Traditions

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IS research has been categorized in terms of traditions or paradigms:  *behavioral*, *design science, economics*, and *organizational*, or some variants of this labeling.  Behavioral IS researchers investigated research questions related to micro- or meso-level IS phenomena (e.g., IS use, decision making, trust), informed their work by drawing on theories from reference disciplines such as psychology and social psychology, and used social science research methods such as surveys, lab experiments, field studies, and qualitative approaches.  IS design science researchers informed their work with kernel theories and created and evaluated IS artifacts to solve problems and establish new (better) realities.  IS economics researchers investigated research questions related to value of IS (e.g., IT business value), informed their work by drawing on theories from economics and used economics research methods such as analytical modeling and econometrics.  Those interested in organizational IS research (e.g., IS capabilities, governance) informed their work by relevant macro-level theories in strategy, economics, industrial-organizational psychology, and organizational sociology, and used a combination of social science and economics related methods.

These categories of IS research worked quite well to classify the diversity of the IS research when there was a tight coupling between the types of research questions, the informing theoretical perspectives and reference disciplines, and the research methods.

IS researchers are now increasingly combining in novel ways the informing theoretical perspectives and the methods that they use to conceive and execute their work, thereby increasing the diversity of IS work beyond the traditional paradigms.  For example, we now see different genres of IS design science research that blend design science with perspectives and methods from IS economics, behavioral theories and methods, and novel computational approaches (Rai 2017).  Similarly, the behavioral economics perspective combines behavioral and economics perspectives, and is emerging as a powerful perspective to study a broad range of IS phenomena (Goes 2013).  Furthermore, IS research addressing behavioral issues now utilizes a range of methods from psychometrics to econometrics to computational to their combinations; and IS research that uses econometrics methods is being informed by behavioral theories.

These novel IS research approaches have created a much more diverse IS research landscape and very different scripts in research than were associated with the traditional IS research paradigms.  Labels for traditions that once meaningfully described the diversity of IS research are now less effective in doing so and there is diminished utility, and possibly disutility, in describing the field in terms of the traditional IS paradigms.

In this editorial, I share some thoughts on the increasing diversity in IS research that defies this traditional classification and why the traditional classification of IS research is diminishing in utility.  Continued reliance on it can constrain the world view of scholars on their choices in the research process and consequently constrain the contributions and impact of work.  It can also lead editors and reviewers to adopt a traditional lens or script to evaluate innovative work, potentially leading to Type II errors.

### Forces Driving Increasing Diversity in IS Research

The forces, not intended to be a comprehensive enumeration, that are propelling the increasing diversity of IS work include

•    *IS phenomena that are increasing in complexity and broadening in scope across business and society*, resulting in the need for diversity in research that transcends the world views and practices represented by the IS traditions.

- *Availability of new types of data*, making it feasible to conceive different research designs and apply different analysis methods to investigate research questions.

- *Diversity of research teams*, with scholars having complementary expertise in theories and methods that transcend an IS research tradition collaborating on research projects.

- *Training of scholars*, where some doctoral programs are training students in a greater range of theories and methods.


## *Blending IS Paradigms through Cross-Paradigm Combinative Practices*

Below I share four ways in which theories and methods have been and can be combined across the IS traditions. These are summarized in Table 1 where paradigmatic theoretical perspectives/methods refer to the theoretical perspectives and research methods typically associated with a specific IS research tradition, whereas non-paradigmatic theoretical perspectives/methods refer to those typically associated with other IS research traditions.


### Combining Paradigmatic Theoretical Perspectives with Non-paradigmatic Theoretical Perspectives

Looking at phenomena or problems from the theoretical lens of a different paradigm can be a constructive and creative process that enables the researcher to scrutinize and challenge fundamental assumptions underlying the theories in their paradigm. As researchers tend to be paradigm bound (Kuhn 1970), the process of challenging theoretical assumptions by considering the world view of a different paradigm can trigger major theoretical developments (Tsoukas and Knudsen 2004). Through the process of combining a theory from a different paradigm with a theory in a researcher's paradigm, the researcher can generate insights to conceive, construct, and justify novel theory that connects two disjointed world views of a phenomenon. Further, considering theoretical perspectives across traditions on a specific topic (e.g., social influence, trust) enables researchers to move beyond a myopic view of the phenomenon by breaking down silos and leveraging theoretical insights generated in other traditions on the topic to provide a more holistic understanding of it. Indeed, there is a range of IS phenomena at the individual, organizational, and network levels for which there is accreted knowledge across the IS research traditions. Combining theoretical perspectives and insights from the different IS traditions, and beyond, can trigger the development of novel IS theoretical perspectives to advance the field as a whole.


### Combining Paradigmatic Theoretical Perspectives with Non-paradigmatic Methods

The process of developing and evaluating theories in a paradigm may be enabled by the use of methods from another paradigm. For example, prescriptions associated with design theory on aligning an IS artifact design to user characteristics can be (1) informed by using computational methods (e.g., mining of process trace data to uncover profiles of user engagement with the IS artifact) and (2) evaluated by using behavioral research methods (e.g., investigator-controlled experiments). As another example, new methods can provide a means to construct novel measures for constructs in behavioral research (e.g., psychological states of a user of a system may be measured using neuroscience techniques such as fMRI) and organizational research (e.g., the radicalness of a firm's innovation may be measured by applying computational approaches such as topic modeling to uncover underlying categories of innovation and the distribution of firms across these categories).


### Combining Paradigmatic Methods with Non-paradigmatic Theoretical Perspectives

A paradigm's distinctive methods can be combined with the theoretical perspectives in other paradigms to illuminate the findings or guide research questions and research design beyond traditional theoretical lenses. For example, a design science approach to modify a dysfunctional behavior of an employee or patient by constructing and evaluating a novel IS artifact intervention may be informed by prototypical theoretical perspectives related to behavioral modification and IS use; insights from the process may be generative in elaborating not only the design theory but also the prototypical theory. Econometric and computational methods may also be combined with complementary behavioral theories to conceive and design natural experiments or quasi-experiments that leverage the different sources and types of big data that are increasingly available.


### Combining Paradigmatic Methods with Non-paradigmatic Methods

The notion of mixed methods has been discussed quite extensively in IS and other disciplines. With the rich diversity of methods used in the IS field, there is a distinctive opportunity for the field to lead in how methods can be effectively combined: for example, explanation oriented

| Table 1. Cross-Paradigm Combinative Practices in IS Research | | | |
|---|---|---|---|
| | | **Non-paradigmatic Practices** | |
| | | **Theoretical Perspective** | **Method** |
| **Paradigmatic Practices** | **Theoretical Perspective** | **Cross-Paradigm Theoretical Combination** | **Paradigmatic Theory-Non-paradigmatic Method Combination** |
| | | ***Motivation***: Challenge assumptions, redefine boundary conditions, reconceptualize constructs and relationships, and gain a more holistic understanding through cross-paradigm theorizing | ***Motivation***: Develop, evaluate, and refine a paradigmatic theory by applying a method from another paradigm to observe, analyze, and interpret phenomena in novel ways |
| | | ***Example***: Behavioral and economics theories on influence mechanisms combined to understand how a platform's design affects the propagation of social influence in online networks | ***Example***: Behavioral/economics IS theoretical perspectives combined with computational methods such as topic modeling, text mining, and image recognition to develop measures of constructs |
| | **Method** | **Paradigmatic Method-Non-paradigmatic Theory Combination** | **Cross-Paradigm Methods Combination** |
| | | ***Motivation***: Leverage a theoretical perspective from another paradigm to illuminate the application of a paradigmatic method in the research process | ***Motivation***: Generate complementary insights by applying methods with different objectives, assumptions, data requirements, and processing approaches |
| | | ***Example***: IS design science research combined with behavioral theoretical perspectives on IS use to inform, evaluate, and refine artifact design; insights can also be used to revise the informing theoretical perspectives | ***Example***: Econometric analysis of archival data for causal identification combined with primary data collected using surveys or interviews to illuminate the underlying mechanisms; grounded theory method to discover concepts and relationships combined with computational approaches applied to large corpus of text to discover topics and relationships |

methods with prediction oriented methods; intensive qualitative methods with extensive computational approaches; econometric analysis using an archival dataset followed by the collection and analysis of primary data (e.g., surveys, in-depth interviews) to illuminate the mechanisms that may explain counter-intuitive findings.

## *Pursuing and Communicating Cross-Paradigm Connective IS Research*

Drawing on the metaphor of "scholarship as conversation" (Huff 1999), the value of scholarship is influenced by how effectively it connects with the relevant scholarly conversations (and by extension, conversants). To the extent that important linkages to relevant knowledge in other paradigms (be it topic, theory, or method) are overlooked or glossed over either in how the work is done or in how it is packaged and communicated, the insights, contribution, and influence of the work are constrained.

Effectively pursuing cross-paradigm combinative practices is not merely a matter of constituting a team with members having complementary specializations in knowledge and skills, but requires "individual members of the team to become multi-disciplinary in knowledge, if not skills" (Simon 1991, p. 10). The IS field provides scholars with increasing opportunities (e.g., multidisciplinary composition of IS academic units; conferences, workshops, and special issues of journals; type of training in several IS doctoral programs) to be exposed to scholarship on the same topics being addressed with different ontological, epistemological, and methodological assumptions and practices. This exposure favors the likelihood of cross-paradigm IS research.

## Concluding Thoughts

We have reached a point in the progression of the IS field where the labels that we have used to differentiate IS research are diminishing in utility. Scholars are now studying the same topics by making choices related to level of analysis, philosophical assumptions, theoretical lenses, modes of reasoning (deductive, inductive, abductive), and research methods. These choices are generating high diversity in work that does not neatly fall into the traditional labels or scripts of behavioral, design science, economics, and organizational research. The diversity in work requires us as producers, evaluators, and consumers of the work to not construe relevant work narrowly but to connect with the relevant work across the IS discipline (and in other disciplines) on a topic, theory or method that is the subject of a study—our collective pursuit of this connective process will catalyze novelty in work, promote the accretion of knowledge, and enhance the impact of our scholarship.

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