

## Association for Information Systems AIS Electronic Library (AISeL)

---

AMCIS 2000 Proceedings

Americas Conference on Information Systems  
(AMCIS)

---

2000

# Relevance in MIS Research: The Need for the Laws as a Reference Discipline

Kathleen Mykytyn

*University of Houston*, [kmykytn@aol.com](mailto:kmykytn@aol.com)

Peter P. Mykytyn, Jr.

*University of Texas at Arlington*, [mykytn@uta.edu](mailto:mykytn@uta.edu)

Follow this and additional works at: <http://aisel.aisnet.org/amcis2000>

---

### Recommended Citation

Mykytyn, Kathleen and Mykytyn, Jr., Peter P., "Relevance in MIS Research: The Need for the Laws as a Reference Discipline" (2000). *AMCIS 2000 Proceedings*. 277.

<http://aisel.aisnet.org/amcis2000/277>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2000 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# Relevance in MIS Research: The Need for the Law as a Reference Discipline

Kathleen Mykytyn, Department of Decision and Information Systems, University of Houston,  
kmykytn@aol.com

Peter P. Mykytyn, Jr., Department of Information Systems and Management Sciences  
University of Texas at Arlington, mykytyn@uta.edu

## Abstract

Recently, IS research has been criticized for lacking in rigor and relevance. One reason for this is that IS researchers have a limited exposure to relevant contexts where IT use and behavior of management are involved. Another consideration is the multiplicity of theoretical frameworks and reference disciplines that exist. This paper suggests that considering the law as a much needed reference discipline for IS research can advance rigor and relevance. The body of law that is suggested includes contract, tort, and intellectual property. Some areas of IS research that would be lacking in rigor and relevance should the law not be considered are also identified and discussed.

## Introduction

Recently, Benbasat and Zmud (1999) stated clearly that the business community has questioned the practical relevance of information systems (IS) research that is published in the leading scholarly journals of the field. In raising this as a current issue, they pose questions, such as whether IS research can be applied by IS professionals in their jobs and whether the research focuses on current technological and business issues. In their view, the answer to these and associated questions was anything but positive. Certainly, the 1995 decision of the Society for Information Management (SIM) International to cease offering SIM members a copy of *MIS Quarterly* as part of members' dues speaks loudly to the matter. So too does the lack of interest by SIM members to subscribe to *MIS Quarterly* at a reduced rate.

Benbasat and Zmud (1999) offer several reasons why much current IS research lacks "practical relevance." One of the reasons suggested is that IS researchers, i.e., IS academicians, have a limited exposure to relevant contexts where information technology (IT) use and behavior of management are made known. Academic responsibilities associated with teaching, research, and service; recruiting and consulting contacts; and a lack of a sufficient exposure to current and future technological environments are cited as reasons for the lack of exposure. A second reason for the lack of relevance is that IS lacks a cumulative research tradition. One explanation for this is the multiplicity of theoretical frames that exist for the phenomena under study.

On the one hand, it would seem counterproductive to suggest that IS researchers should consider basing some research on another discipline; after all, Benbasat and Zmud (1999) indicated that a number of theoretical bases exist already. However, we believe most emphatically that that is exactly what much IS research needs: another discipline to support that research. In so doing, we also address the first reason listed above – IS researchers will have greater exposure to the practical contexts of interest to IT professionals. Indeed, in many instances, the issue of relevance should vanish!

The discipline that is missing today is the law. More specifically, we are suggesting that three elements of the law are most relevant to IS research and should serve as an appropriate discipline upon which to base that research. These aspects of the law relate to contracts, torts, and intellectual property. An initial thought that some IS researchers might harbor is: That's ridiculous! Leave the law to the lawyers! Carrying that thought to its conclusion will only serve to leave us mired where we currently lie: where some IS research is not only lacking in relevance but also, in many instances, inaccurate and flawed.

Lee (1999), similar to the position of Davenport and Markus (1999), states that if IS research is going to be relevant to the practitioner community, IS researchers should consider emulating the way that professions, such as law and medicine, conduct research. We suggest that IS researchers should not only emulate the profession of the law, they must use it and must base much of their research on it, i.e., draw upon the statutes and court decisions that embody the law, using them to ground their research much in the same manner as they might employ cognitive psychology, irrespective that some refer to the law as a profession.

This paper reviews briefly the accepted reference disciplines that IS research has used for more than twenty years. Next, we discuss the elements of the law that can provide a foundation upon which to build stronger, more relevant, and more accurate research. We then map these areas of the law to IS research to show how important they are. Finally, we close with a discussion that emphasizes the importance for rigor and relevance that the law provides.

## IS Reference Disciplines

Keen (1980, p. 10) characterized a reference discipline as "...an established field to which one looks to get an idea of what good MIS research would look like, if one could ever do it." He further stated that a reference discipline explains what a research strategy should be for MIS and that it would provide some criteria to help evaluate the quality of that research.

Keen (1980) also indicated that microeconomics and computer science were the assumed reference disciplines at that time. Later, based on an extensive co-citation analysis, Culnan (1986) categorized reference disciplines as fundamental theory (systems theory, information concepts, decision making), underlying disciplines (economics, political science, psychology, and sociology), and related applied disciplines (computer science, accounting and finance, management, and management science/operations research). Today, of course, IS researchers regularly base much of their research on these disciplines. For example, research investigating competitive advantage using IT has often been based on strategic management, such as the forces and strategies a firm must contend with (Porter, 1980) and the resource-based view of the firm (Barney, 1986). And research examining how changes in new technology impact a person's job, i.e., IT implementation, has often been based on Lewin's model dealing with change management (Lewin, 1951).

In essence, based on the nature of the research being done, many IS researchers have tended to use applicable disciplines and related theories in those disciplines for grounding and anchoring purposes. Zmud (1996) referred to this type of research as "applied theory" research. So, as to conduct IT research that in fact does have greater relevance to practitioners, we are suggesting that law should be used to base or ground much IS research, leading not only to greater relevance but also to more focused research.

## Applicable Bodies of Law

There are three bodies of law that we feel IS researchers need to consult in order to conduct more relevant and valid research. These are contract, tort, and intellectual property. Each is discussed briefly for context and understanding, and the applicability of each to IS research is presented.

### *Contract Law*

The relationship between IT and contract law is anything but new. The sale of a good, e.g., a mass-marketed software package such as Microsoft Windows 98, has been governed for decades under the provisions of the Uniform Commercial Code (UCC), specifically Article II. The UCC has been adopted by all states except

Louisiana. Related to the sale of an IT good are issues affecting both the seller and buyer. These include the contract itself, warranties, disclaimers, and licenses. Where it is clear that no IT goods are involved, such as a contract between a company and an IT consultant who is performing a service, then the provisions of the Restatement of Contracts, Second govern the relationship.

Recently, a significant amount of attention has been directed at the Uniform Computer Information Transactions Act (UCITA), which establishes the rights of software buyers and sellers. This law, which was recently passed by the Virginia state legislature, is proposed as a model for all 50 states, and it covers licensing for shrink-wrapped software, vendor liability for defects, and contract disputes (Johnston & Betts, 2000). It is highly controversial with both advocates and opponents expressing strong opinions. Proponents have stressed that UCITA will provide licensing standards sorely needed, especially with regard to e-commerce, whereas opponents contend that it is antiquity and anticompetitive (Rosencrance, 2000).

The history of information systems (IS) is littered with court cases involving contract law. Two examples include *Colonial Life Insurance Company vs. Electronic Data Systems* (1993) wherein EDS was involved in an action regarding breach of contract and warranties; EDS lost this case. In another instance, *Unisys Corporation* was sued for fraud and breach of contract with regard to the marketing of a software system developed by *Advent Systems Ltd.*; Unisys lost this case with damages exceeding \$9 million (Advent, 1991).

IS researchers continue to examine a host of issues where contract law is applicable. These include outsourcing of IT services, competitive advantage, adoption and diffusion of technology, and a host of e-commerce matters. It is not conceivable that research affecting these and other IT issues and organizations should proceed without giving due consideration to the many facets of contract law.

### *Tort Liability*

There are several theories of tort liability that can be used to recover damages related to defective IS, including software. These are product liability, negligence, and professional malpractice. Product liability holds sellers of a product responsible for physical injury to a person. The injured party may sue and recover damages against the seller despite the seller's lack of negligence and without regard to any contractual relationship existing between the seller and the injured party. Defective software deemed to be a product could occur as a result of manufacturing and design defects as well as the developer's failure to warn of a product-related risk. To establish a case based on product liability, a plaintiff must prove that the defendant, i.e., the software developer, had a specific duty to conform to a standard of care, that the

duty was breached, that the breach caused the injury, and that damages occurred.

In general, courts have been reluctant to hold software developers strictly liable for software defects, with most cases having been based on contract claims (Savage, 1998). However, IS researchers should not ignore the potential for injury to occur when they are engaged in, for example, research dealing with systems development. Bordoloi, Mykytyn, and Mykytyn (1996) point out that poor or inadequate testing, inadequate warnings, or failure to use state-of-the-art technology could lead to injury and, thus, to product liability claims. In addition, the growing emphasis today regarding healthcare information systems that could easily lead to patient injury or death due to design defects should cause IS researchers to include these issues in their research.

A cause of action based on the tort of negligence is similar in some respects to one based on product liability. A plaintiff must show that, for example, a software developer has a duty to conform to a specific standard of care, that the duty was breached, that the breach caused the injury, and that damages occurred (Savage, 1998). Levy and Bell (1990) indicate that many actions taken/not taken by a developer could lead to a negligence cause of action, including a failure to: write or test software properly, correct significant program defects, warn of software limitations, instruct users on how to use the software, and provide adequate security for the system. In 1990 Shell Pipeline Corporation was held by the court to be negligent because of a defect in its computer system related to the data entry process that led to the misdelivery of 93,000 barrels of crude oil (Shell, 1990).

IS researchers who investigate, for example, software engineering principles or new modeling approaches to develop software applications could miss important and relevant points if their research failed to include the possible legal perspectives related to negligence. In addition, research that examines risk and cost/benefit analyses related to IS initiatives in organizations would lack relevance and rigor if it did not address the potential impact on, say, software developers who “cut corners” to minimize costs.

In general, a professional malpractice action is similar to negligence, except that the standard of care imposed on one, e.g., a physician, is that of a professional person who provides advice or performs a service (Savage, 1998). When one hears the term professional malpractice, one usually thinks of physicians, dentists, architects, and the like. One doesn't think of computer and software professionals. For the most part, courts have been reluctant to allow claims for professional malpractice for computing professionals because there is not an accepted standard of practice that can be applied to these professionals. One notable exception occurred in 1989 when the court did find that the provider of data who failed to meet the degree of skill and care required, i.e., professional malpractice, was a question for the jury to

decide, thus opening the door for computer malpractice (Diversified, 1989). Further, even computer professionals have suggested that the licensing of software engineers should be investigated more fully (Frailey, 1999).

## *Intellectual Property*

In general, intellectual property embodies four areas of the law: trademarks, trade secrets, copyrights, and patents. Trademarks protection is available for computer programs, but it contains no protection for the functional aspects of computer software, thereby limiting its usefulness in the software industry (Cantzler, 2000). Trade secret law affords protection to valuable information, including computer software. Unfortunately, the value of a computer program often increases with widespread distribution, and this conflicts with the requirements of trade secret law (Cantzler, 2000). Szepesi (1996) notes that trade secret was the protection of choice in the 1970s, copyright in the 1980s, and patents in the 1990s and that all three are being used to protect IS today. Today, the two areas of intellectual property law that receive the most attention are copyright and patent.

Copyrights give protection to the expression of an idea, not to the idea itself. In the case of software, the actual source or object code is protected since it is the expression of how to tell a computer to perform some task. Since there are a number of different ways to instruct a computer to perform a given task, and since the wording in code can be changed without loss of functionality, the changes effectively copy the original program without fear of infringement, thus limiting the effect of copyright protection (Cantzler, 2000).

By far today, the most discussed approach to protecting computer software as intellectual property is through patent protection. A patent is a grant by the US government for a useful, novel, and nonobvious invention and confers on the patent holder the right to exclude others from making, using, offering for sale, selling the invention in the United States (US) for twenty years from the time an application for a patent is filed. Szepesi (1996) states that since copyright or trade secrets cannot offer protection against independent development – trade secret protection can be lost if a second party develops and publicizes the same invention – patent protection may be preferred if the competitors are very close together in technological development.

Software was first deemed patentable in 1981 through a Supreme Court ruling (Diamond, 1981). Between then and the mid 1990s thousands of software patents were issued. In 1998, in what has been referred to as a landmark case, software in general and, more specifically, software implementing business methods was deemed patentable (State Street, 1998). The impact on organizations is dramatic. Businesses such as finance, insurance, and marketing, many of which had not previously considered patents as viable to protect

intellectual property, must do so now. The reality is that businesses must either acquire patents or watch the competition acquire them first (Cantzler, 2000). Firms say that patents will change the way in which they compete, with many of them expecting that in a decade's time they will be tied to their competitors and suppliers by a web of cross-licensing agreements. In that way they will avoid violating others' intellectual property; at the same time they will earn the royalties from their own (Anonymous, 1996).

The impact on IS researchers should be considered just as dramatic. Research, such as that investigating IT adoption and diffusion, innovation, entry barriers, reengineering, and sustained competitive advantage, continues today. Furthermore, such research would be lacking in rigor and relevance without basing it on intellectual property law.

## Discussion

Lee (1991) suggested that architecture, as a profession and an art, should be considered as an IS reference discipline, and he presented how the form of architecture would pertain to IS. During the intervening nine years since Lee's work was published, IT and its relationship to business and commerce has changed significantly. Where once IT was relegated to the basement, today it is often key and integral to the success an organization achieves in the competitive marketplace. If IS researchers are to continue on the one hand, to add to the body of knowledge of IS through rigorous scholarly research, and, on the other hand, to conduct research that has relevance to the business community, researchers must look beyond the traditional reference disciplines for support.

We have shown in this paper that the field of the law, as a profession and an art, is more than appropriate to be an IS reference discipline. Indeed, it is a field that can provide both rigor and relevance to the research that is conducted. Failure to consider the law in many research endeavors can lead to incorrect results by researchers, which in turn can lead other researchers to faulty conclusions as well.

The body of contract law has been applicable to IS for decades, so, in and of itself, it is not new to IS. However, the many changes that have occurred and which continue to this day, e.g., the impact of UCITA on software licensing and the evolving nature of outsourcing are but two examples, suggest that to not examine and use contract law and its impact on rigorous and relevant research is remiss. Similarly, tort liabilities, such as negligence, can have far reaching consequences on organizations, especially where the impact on third parties, such as consumers, is possible. From the perspective of IS research that has been conducted previously and that would be impacted by this particular tort, there have been a number of court cases that have found IS-related defendants guilty of negligence. Again,

IS researchers who have ignored this area of the law are not conducting rigorous and relevant research.

Perhaps the area of the law that is so relevant and timely today is that dealing with intellectual property. And the IP area of intellectual property that is most important is that dealing with software patents. The applicability since 1998 of patenting software-based business methods is far reaching in its impact of how IS researchers should examine issues such as sustained competitive advantage, IT adoption decisions, and the like. Furthermore, one of the hottest research areas today encompasses electronic commerce. One need look no further than the recent lawsuit filed by Amazon.Com against Barnesandnoble.com (B&N) wherein Amazon.com claimed that B&N infringed on its 1-Click ordering system should serve notice to researchers who are investigating e-commerce that these issues cannot be ignored.

International law, which has not been discussed thus far, surrounding privacy and security, and transborder dataflow would have a profound impact on the way IS researchers investigate e-commerce. For instance, one of the most controversial aspects of the Data Protection Directive (Zinger, 1998) deals with the treatment of transfers of personal data across national borders outside the European Union (EU). European countries currently insist that US e-commerce companies adhere to the directive on data protection, which has strict privacy requirements. If these directives are not dealt with, Europe threatens to block US e-commerce (Anonymous, 2000). The US and the EU are currently negotiating these Directive issues.

IS researchers continue to base much research on existing theories and reference disciplines in order to explain and predict numerous IT-related topics, including IT development, use, impact, adoption, diffusion, and the like. To ignore the law as an appropriate reference discipline can lead not only to incomplete research, it can produce research that is wrong.

## References

Advent Sys. Ltd. V. Unisys Corp., 925 F.2d 670 (3<sup>rd</sup> Cir. 1991).

Anonymous, "U.S.-EU Joint Press Briefing: Data Protection Discussions," [www.ita.doc.gov/media/aaron\\_mogg222.htm](http://www.ita.doc.gov/media/aaron_mogg222.htm), (Current May 30, 2000).

Anonymous, "A Dose of Patent Medicine," *Economist Newspaper, Ltd.* (338:7952), February 10, 1996, pp. 71-72.

- Barney, J.B. "Organizational Culture: Can It Be a Source of Sustained Competitive Advantage," *Academy of Management Review* (11:3), July 1986, pp. 656-665.
- Benbasat, I. and Zmud, R.W. "Empirical Research in Information Systems: The Practice of Relevance," *MIS Quarterly* (23:1), March 1999, pp. 3-16.
- Bordoloi, B., Mykytyn, K., and Mykytyn, P., "A Framework to Limit Systems Developers' Legal Liabilities," *Journal of Management Information Systems* (12:4), Spring 1996, pp. 161-185.
- Cantzler, C.S., "Comment: State Street Leading the Way to Consistency for Patentability of Computer Software," *University of Colorado Law Review* (71:2), Spring 2000, pp. 423-462.
- Colonial Life Ins. v. Electronic Data Sys., 817 F.Supp. 235 (D.N.H. 1993)
- Culnan, M.J. "The Intellectual Development of Management Information Systems, 1972-1982: A Co-Citation Analysis," *Management Science* (32:2), February 1986, pp. 156-172.
- Davenport, T.H. and Markus, M.L. "Rigor vs. Relevance Revisited: Response to Benbasat and Zmud," *MIS Quarterly* (23:1), March 1999, pp. 19-23.
- Diamond v. Diehr, 450 US 175 (1981).
- Diversified Graphics v. Groves, 868 F.2d 293 (8<sup>th</sup> Cir. 1989).
- Frailey, D.J. "Licensing Software Engineers," *Communications of the ACM* (42:12), December 1999, pp. 29-30.
- Johnston, M. & Betts, M. "State Passes User-Opposed Software Law," *Computerworld*, February 21, 2000, p. 12.
- Keen, P.W. "MIS Research: Reference Disciplines and a Cumulative Tradition," *Proceedings of the First International Conference on Information Systems*, E. McLean (ed.), Philadelphia, PA, 1980, pp. 9-18.
- Lee, A.S. "Rigor and Relevance in MIS Research: Beyond the Approach of Positivism Alone," *MIS Quarterly* (23:1), March 1999, pp. 29-33.
- Lee, A.S. "Architecture as a Reference Discipline," in *Information Systems Research: Contemporary Approaches and Emergent Traditions*, H.-E. Nissen, H.K. Klein, and R. Hirschheim (eds.), Elsevier Science Publications (North-Holland), New York, NY, 1991, pp. 573-592.
- Levy, L.B. and Bell, S.Y. "Software Product Liability: Understanding and Minimizing the Risks," *High Technology Law Journal* (5:1), 1990, pp. 1-27.
- Lewin, K. *Field Theory in Social Science*, Harper & Row, New York, NY, 1951.
- Porter, M.E. *Competitive Strategy: Techniques for Analyzing Industries and Competitors*, Free Press, New York, NY, 1980.
- Rosencrance, L. "Proposed Software Law Passes First State Test," *Computerworld*, February 15, 2000.
- Savage, D. "Avoiding Tort Claims for Defective Hardware & Software," *Computer Law Strategist* (15:6), 1998, p. 1.
- Shell Pipeline Corporation v. Coastal States Trading, Inc. 788 S.W.2d 837 (Tex.App.—Houston 1<sup>st</sup> Dist. 1990).
- State Street Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368, 1373 (Fed. Cir 1998), cert denied, 119 S. Ct 851 (1999).
- Szepesi, J.A., "Maximizing Protection for Computer Software," *Santa Clara Computer & High Technology Law Journal* (12:1), February 1996, pp. 173-205.
- Zinger, S.G., "From Europe with Love?," *IP Magazine*, <http://www.ipmag.com/98-dec/zinger.html>, December 1998, (Current May 30, 2000).
- Zmud, R.W. "Editor's Comments," *MIS Quarterly* (20:2), June 1996, pp. xxi – xxiv.