

December 2023

F. Warren McFarlan's Pioneering Role in Impacting IT Management Through Academic Research

Blake Ives

Mary Lacity

Jeanne Ross

Follow this and additional works at: <https://aisel.aisnet.org/misqe>

Recommended Citation

Ives, Blake; Lacity, Mary; and Ross, Jeanne (2023) "F. Warren McFarlan's Pioneering Role in Impacting IT Management Through Academic Research," *MIS Quarterly Executive*: Vol. 22: Iss. 4, Article 8. Available at: <https://aisel.aisnet.org/misqe/vol22/iss4/8>

This material is brought to you by the AIS Journals at AIS Electronic Library (AISeL). It has been accepted for inclusion in *MIS Quarterly Executive* by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

F. Warren McFarlan's Pioneering Role in Impacting IT Management Through Academic Research

Based on interviews with F. Warren McFarlan and with others who have worked with him, as well as Harvard Business School archive material, we chronicle his long career, highlighting the immense contribution he has made to bridging academic research and IT management practice. McFarlan is now retired, but his legacy will continue to inspire future generations of IT practitioners and academic IT researchers for many years to come.

Blake Ives

College of Charleston (U.S.)

Mary Lacity

University of Arkansas (U.S.)

Jeanne Ross

Center for Information Systems Research (CISR), MIT Sloan School of Management
(retired) (U.S.)

Introductory Comments

MIS Quarterly Executive's mission of publishing practice-based research has the potential to generate huge benefits for both academics and business managers. But these two constituencies have different, seemingly conflicting, goals: business leaders value research focused on practice and prescription; academics value theory and description. How can academics produce research that impacts both practice and theory? In this article we describe the career of F. Warren McFarlan, a founder of the field of IT management research.

Warren's career began in the 1960s, when he faced the same challenges that confront IT management academics today. He met those challenges by surveying the needs of industry and his institution, identifying what he might bring to the table to meet those needs and working relentlessly to deliver benefits to both sides. His legacy includes his significant body of research—an archive of more than 300 cases and teaching notes, a set of seminal frameworks published in *Harvard Business Review* and 14 books, most of which offer lessons in managing the commercial application of information technology. An equally important part of his legacy, we believe, is that he has inspired researchers to be creative in applying their talents to make contributions to the field.

McFarlan's circumstances were unique, and we do not presuppose that many academics can replicate them. We believe the lesson here is that success in practice-based research is not



a matter of following a well-formulated path. Rather, it is about finding the needs that exist in the field and applying a researcher's unique talents and circumstances to address those needs.

Observing the Inception and Rapid Evolution of Computers

Sixty-five years ago, a senior executive at Raytheon and future president of the Institute of Radio Engineers (predecessor to the IEEE) offered advice to his son, a 20-year-old college senior: "Computers will be the wave of the future; get as much insight as possible on their potential applications."¹ To this day, F. Warren McFarlan, emeritus professor at the Harvard Business School (HBS), fondly recalls that prescient advice from his father, Dr. Ronald L. McFarlan, who himself had once been on the Harvard faculty: "My father gave me extremely good advice in 1958. I would give the same to my grandsons today."

In 1951, the Lyons Electronic Office (LEO) was running the world's first commercial application on a stored-program computer (the generation of paychecks). In July 1955, two months before McFarlan entered Harvard College, IBM installed the first IBM 702, its first computer targeting the commercial market. For the next 60 years, McFarlan would have a ringside seat as vacuum tubes gave way to semiconductors and, in the lab at least, to quantum computers and qubits. He watched as room-sized mainframe computers shrank to mini, to desktop, to luggable, to laptop, to pocket, to tiny sensors. He watched with keen interest as advances in computer processing speed, peripheral storage, network bandwidth, input/output devices and methods of instructing computers emerged and evolved, often at dizzying speeds.

McFarlan observed how each new tidal wave of IT reshuffled the economic playing cards of computing and the businesses that IT supported. Transaction processing systems were upstaged, first by decision support systems, then by executive information systems, knowledge management systems, expert systems, neural networks, collaboration tools, strategic systems, embedded systems, and eventually by search

engines, phone apps, smart devices, data-driven organizations, and digital products and businesses.

He watched as American Airlines and American Hospital Supply introduced outward-facing systems that provided the foundation for a sustainable competitive advantage. He observed how IT-enabled and disruptive startups, such as Charles Schwab, Alibaba and Li & Fung, decimated incumbents while enriching their founders. He saw proprietary networks and standards give way to open systems and strategic partnerships. He witnessed how systems development projects and consequent risk evolved from in-house development, to outsourced systems, to off-the-shelf packages, to agile methodologies, and to the assembly of composable internet-based services. McFarlan watched too, often with alarm, as society became ever-more reliant on these systems and as threats to security and privacy increased.

McFarlan not only observed and learned about the business impacts of computers; he taught, wrote and consulted about the promise of technology in business and the challenges associated with making that promise a reality. He played a leadership role in establishing the field of IT management—shaping both how IT is used and managed in businesses and how IT academics define their field. From the first LEO-generated paychecks until today, IT has changed the art of the possible in business. For his part, Warren McFarlan has guided joint business and academic efforts to recognize and perform that art.

"I once asked Warren who were his most difficult clients. He instantly answered 'companies making money.' I replied that clients who know they need help even when making money seem enlightened. He observed that no one seems enlightened when you tell them they have to change what they did that made them rich." John L. King, William Warner Bishop, Professor Emeritus, School of Information, University of Michigan.

¹ Unless otherwise attributed, all quotes in this article are from Warren McFarlan.

Revolutionizing IT Management Practice

"As information technology swept across the business landscape in the 1950s and 1960s, managers had to bring in experts who didn't exist in the marketplace. Managers turned to a source they knew—business schools." John L. King

In the fall of 1961, McFarlan had both an undergraduate and MBA degree from Harvard, but was unsure how to follow through on his father's advice. Then, as an MBA student, he had a fateful encounter:

"I had taken a computer programming course as an undergraduate at Harvard College. Professor Dearden joined us for beers after class one day, at which time I communicated to him my vast knowledge of computing. Clearly, the barriers to get into the field were much lower at that time."

John Dearden had worked for 10 years at Ford Motor Company, eventually as a manager of the financial systems department. At HBS, Dearden proved to be an early and enthusiastic promoter of IT within the school. Some time after their discussion of computing over beers, Dearden encouraged McFarlan to enter HBS's Doctor of Business Administration (DBA) program, and so, in January, 1962, following a stint in the military, Warren McFarlan began his DBA coursework. Consistent with his commitment to study business computing, he was assigned as a research assistant to Dearden and soon found himself supporting the creation of a new MBA elective in management information systems. First taught in 1962, McFarlan 60 years later remembered that it was "surprisingly well received."

Not all his endeavors during his doctoral program were so fruitful. For example, he describes his dissertation work as follows:

"My doctoral thesis was the largest, most expensive and most useless simulation model ever built. It took half an hour on an IBM 7094, the fastest machine of its kind, to simulate six months of a garment factory.

The 7094 took up a room ten times the size of this. It looked like a \$10 million machine, with hundreds of lights winking, tape stands whirling, disk drive arms going in and out. You could just see and feel the value."

However, McFarlan soon abandoned any aspirations to program computers, instead focusing his attention on understanding their management.

Educating Managers About IT

During the 1960s and 1970s, efforts to define what business leaders and researchers needed to know about business computing were hit and miss. At most universities, individual faculty members with an interest in commercial computing might be embedded in a variety of established disciplines—accounting, electrical engineering, operations research, management science, business strategy and computer science, to name the most common. This lack of focus only intensified the demand for management education on the emerging role of IT in business.

As faculty and university administrators recognized the growing need for IT-savvy business leaders, some universities created multidisciplinary departments or departmental subunits. Faculty in these new units developed curricula, authored texts and launched new educational programs and degrees. Some universities, such as Minnesota (1968) and MIT (1974), established information systems research centers with an objective to bridge scholarship and practice.

Harvard Business School did not establish a new academic unit or an IT management research center, but faculty and administrators were anxious to provide management education in the field. When McFarlan joined the HBS faculty in 1964, he taught a required first-year MBA course called "Managerial Economics Reporting and Control." HBS did not include a required IT management core course until 1987 when McFarlan assumed responsibility for the first-year MBA core curriculum.

Though HBS was slow to include IT management in its MBA course, the importance to senior-level managers made IT management an important topic in executive education. (The Appendix describes how IT did eventually

become part of HBS's MBA program.) In 1969, HBS introduced a two-week summer program, initially called "Managing the Data Processing Resource," which targeted senior IT leaders and their superiors. The course ran for 30 years, drawing 130 students each year.

In 1968, McFarlan began teaching IT classes in HBS's Advanced Management Program (AMP). Founded at the end of the World War II, the 13-week program drew 160 students in each of two sections each year. The attendees' average age was about 45, and they held positions such as division president, senior vice president and executive vice president. For McFarlan, educating such an experienced group was daunting:

"It was an enormous stretch for me in the first year as I learned what senior managers' interests were in the field of IT and how to relate to them. Several of my colleagues had already failed in this endeavor. A combination of understanding the group's needs and developing specific cases did the trick for me. For more than 30 years, I was involved in the AMP. To survive I had to be utterly familiar with not just the technology but practice."

In 1973, the year McFarlan was appointed full professor at HBS, the PC was still roughly five years away. In each subsequent half decade, a new breakthrough technology emerged: the commercial internet, the World Wide Web, smartphones, home WiFi, the cloud. These, and many other IT innovations, were disruptive, often changing the underlying economics of IT and even the structure of industries. As McFarlan described it, "the art of the possible just keeps changing and changing." For corporate leaders and the IT executives who supported them, the consequent chaos could be jolting and, for some, career ending.

Teaching Executives How to Manage the Chaos of Technology Change

"Warren is without peer in dynamically engaging MBAs, CEOs, senior executives and boards of directors on the explosive development and strategic importance of IT."
Richard L. Nolan, William Barely Harding

Professor of Business Administration,
Emeritus, Harvard Business School

In the AMP classroom, McFarlan's special skill was first to explain to his audience the chaos resulting from faster and faster digital innovation. Most of the innovations were derived from the ever-denser and cheaper arrays of transistors printed on thumbnail-size chips.

Once his AMP audience was suitably awed by the potential of the technology, McFarlan next demonstrated how woefully unprepared they were to manage the chaos of the rapidly changing technology environment. He did not hesitate to point out, albeit lightheartedly, his perception of general managers' inadequacy in dealing with the pace of change. He described the situation to a 2003 AMP class in this way:

"Twenty years ago, our users, including those attending the AMP, were illiterate in IT and they knew it. Today, you're still illiterate, but you don't know it! Fresh from combat experience with desktop PCs, shopping on the internet, your word processing and email, you are veritable practitioners of the information age. But you don't know squat one about what it takes to design a robust system that will run 24 hours a day, seven days a week, 52 weeks a year, handling all the oddball requests. Because you use them doesn't mean you understand, intuitively, what it costs; what it takes to build something that runs reliably in a bullet-proof, error-proof fashion, every step along the way."

Then, using conceptual frameworks and illustrative cases, he spent the remainder of the class or program rebuilding the attendees' self-confidence, arming them with nontechnical language and frameworks to manage the IT management puzzle pieces that were either not changing or changing more slowly.

In addition to assessing and managing project risk, McFarlan warned AMP participants that technological illiteracy, user resistance and cultural overload were other dangerous pieces of the puzzle that were unlikely to ever go away. "Implementation," he felt, "had always been the Achilles heel of the field, and the implementation failures today are exactly the same as in the

past.” Similarly, the threats from technology dependence, cybersecurity and privacy would likely only increase.

Through each era of IT chaos, McFarlan guided executives in deciding how to manage the phases of an emerging technology, where to invest in technology, which applications should be developed or purchased, whether development should be sourced in-house or externally, how incumbents should respond to disruptive technology, and so forth.

The wisdom he imparted was derived from his ever-growing inventory of business case studies, which gave students in his classes concrete examples of how other companies were addressing the issues they were facing.

Building an Academic Research Portfolio

Although McFarlan had quickly mastered teaching and case development, he had misgivings about his long-run prospects at HBS—misgivings captured in a memorable conversation with colleagues:

“I was sitting over coffee with five other assistant professors—one from production operations management, one from marketing, one from finance and so on. Their conversation, directed at me, was along the lines of: ‘Warren, unlike the rest of us, you do not have a discipline and, therefore, there can be no career for you here. What do you intend to do?’”

McFarlan’s career uncertainty mirrored the challenges that faced the founders of IT programs at other universities: “There was no established path to tenure.”

The functional areas within business schools were almost all labeled by a single word—finance, marketing, management, accounting, economics. Whereas all of these had scientific legitimacy—well-established scholarly journals, generally accepted curricula and professional societies—IT management did not. In addition, IT management was also lacking the most cherished symbol of social science respectability: theories. In 1975, it didn’t matter if an academic called the area of research “data processing,” “information systems,” “information technology management and

strategy” or “computer information systems.” The field lacked a succinct, commonly accepted rubric, either in academia or business. Researchers were drawing on theories from other disciplines, rather than developing theories unique to IT management:

“This was a completely unknown domain. In those days, we were just trying to understand what the general phenomenon was, and what information technology was doing for companies. We went out and tried to write a series of cases about people who were using technology, and then tried to see what, if any, patterns or themes, ran through them.”

As a starting point for making IT management a recognized academic discipline, McFarlan set out to understand and report on what was going on in business.

Learning Based on Case Studies

Promotion and tenure decisions at HBS differed from most other business schools. Tenure came with the second promotion, not the first, and quality teaching and curriculum development, which were barely acknowledged at many research universities, were highly prized in decisions for promotion to associate professor. For promotion to full professor with tenure, “impact” was essential. In particular, HBS was concerned with impact on practice, especially the practices of general managers. McFarlan explained using an analogy from baseball:

“What [HBS] looks for is, ‘What is the power of the idea? Is there a kernel that can change the paradigm of the field?’ That’s always the question that [HBS] focuses on. Journal citations or number of articles all are pretty suspect kinds of metrics. What [it] looks for is somebody who can conceptualize the paradigm. [If] you [hit a home run] with a couple of those ... that’s a whole lot better than lots of singles and doubles.”

Like John Dearden before him, McFarlan’s research was based on field research and case study writing. He had developed a keen eye for observing what organizations were doing with IT and identifying what practices contributed to

management success. To be awarded tenure, he had to demonstrate to the tenure committee that the findings from his many case studies would have an impact on how IT was managed:

"I was up for promotion, and in about five weeks I was either to be cut from the squad or be around to inflict myself on you for the next 30 years. I got a phone call from our senior associate dean, and he said, 'The committee is studying you, Warren, and wonders what you have been doing in your research for the past nine months. Would you, over the weekend, whip up a nice report with your current research findings?'"

This request represented an unanticipated bump in the road to McFarlan's career success. He described his reaction to an audience of executives in 2003:

"I was bitter! I came home and I told my wife over dinner, 'I spent ten years at this place, and it all comes down to one lousy weekend!' My wife, however, is a warm, friendly practical person. She listened to me Friday night, [and] on Saturday morning she said: 'Warren, I'm going to take the kids out to see a movie; here are a couple of pads of paper; why don't you see what you can make of it?'"

The requirement to write up his findings motivated McFarlan to synthesize his learnings from his many case studies:

"Fear having concentrated the mind, at about 1 p.m. I conceived the notion of company-relative technology, structuredness and size—a language system for looking at the risk profile and the contingency management of a portfolio that 30 years later is still important."

Later published in *Harvard Business Review*,² the resulting 2×2×2 framework prescribed a method for assessing project risk based on those three criteria of structure, size and technology. McFarlan paired each of the eight cells with the project management levers he had found to be important in his field research and useful for

reducing project risk. For instance, a very large project, employing familiar technology, but with low structure, might best be managed by someone from the user organization rather than an IT project manager. However, given the lack of structure, this would still be a high-risk project if formal project control tools could not be heavily relied upon.

A framework for managing a single project's risk, given its value to project managers, might have earned McFarlan a single or a double on his HBS promotability scorecard. But, in the 1970s and 1980s, there was an increasing number of risky IT projects that demanded CEO oversight, where failure to manage the risk could mean bankruptcy. McFarlan's framework elevated responsibility for IT risk management to the C-suite, thus perhaps earning McFarlan a home run in the school's promotion and tenure committee deliberations. To accompany the framework, McFarlan provided powerful case studies, such as his Providian Trust case,³ that helped both business and academic readers understand the significance of his findings.

"There were people at the school who, almost everywhere else in the world, would have gotten tenure easily but who got rejected at Harvard because people felt it didn't all come together into an important set of ideas." Rob Austin, Professor, Ivey Business School, Western University

Developing Frameworks to Summarize Findings

Over the course of his career, McFarlan continued to develop frameworks that helped practitioners apply the insights he accumulated through his case study research. He described the origins of one of his most enduring contributions to management thinking, a framework for aligning IT with business strategy:

"In 1980, flying back from the west coast and over Denver at 35,000 feet ... I had a glass of stimulant in hand and was wondering why it is that IT seemed to be of more concern to some management teams than to others. I

² McFarlan, F. W. "Portfolio Approach to Information Systems," *Harvard Business Review* (59:5), September 1981, pp. 142-150.

³ McFarlan, F. W. and Dailey, M. *Providian Trust: Tradition and Technology (A)*, Harvard Business School Case 398-008, August 1997. (Revised June 1999.)

drew out on a napkin a version of the grid, that somehow sort of summarized what I was thinking."

Drawn with two dimensions and four boxes, the grid helped executives recognize how important IT was, or soon would be, in their firms or divisions. He labeled the y-axis with the "strategic impact of existing operating systems" and the x-axis with the "strategic impact of the application development portfolio." The scales for each ranged from "low" to "high." The resulting four boxes were labeled: "Factory" in the bottom left, "Support" in the top left, "Turnaround" in the top right and "Strategic" in the bottom right. The "Strategic" box denotes that a company's IT is critical today and would be even more so very soon. Different management approaches, which he detailed, were required for each box.

This framework,⁴ like that for assessing project risk, as well as many others produced by McFarlan and HBS IT colleagues, such as Richard Nolan, Jim McKenney, James Cash, Lynda Applegate and John Sviokla, was simple to grasp and apply. These frameworks required no understanding of bits and bytes. Instead, they provided a language and a set of high-level, but essential, questions that a senior IT executive could use with the C-suite, or a senior manager could debate with their CIO.

Written with general managers in mind, McFarlan's case studies and management frameworks were designed to impact practice. He also recognized that other IT faculty members could benefit from the research and teaching materials he produced. In 1966, John Dearden published a textbook entitled *Management Information Systems: Text and Cases*,⁵ one of the first textbooks in the field. Three hundred of its 425 pages featured 26 cases, many of them written by, or with, McFarlan. To McFarlan's surprise, Dearden had listed him as a coauthor. McFarlan continued that tradition, publishing 11 similar MIS textbooks coauthored with numerous HBS colleagues.

4 McFarlan, F. W. "Information Technology Changes the Way You Compete." *Harvard Business Review* (62:3), May 1984, p. 98-103.

5 Dearden, J. and McFarlan F. W. *Management Information Systems: Text and Cases*, Irwin, 1966.

Bridging Academic Research and IT Management Practice

Academic IT management researchers have long bemoaned the seeming trade-offs between "rigor and relevance,"⁶ believing that research intended to impact practice would be less respected in academic circles—and thus less valuable for career advancement. Although McFarlan did not face that conflict at HBS, he was committed to building bridges between academia and practice.

Developing Expertise in IT Management Practices

McFarlan's executive teaching responsibilities motivated a desire to develop a deep understanding of how IT was used in successful companies. As a result, he was drawn to the process of documenting, in case studies, how businesses managed and used computers. Harvard's Executive Education Program both fed and leveraged his passion:

"I have had an enormous assist from Harvard's Executive Education Program from the 1950s until today. The demands of this teaching environment, coupled with the access it provided me to interesting field sites, was unparalleled in the academic IT community."

In fact, when Harvard expanded the AMP into Europe in 1973, McFarlan applied his proven process of writing case studies both to better understand what managers were doing and to enrich his teaching:

"When we moved the program to Europe in 1973 to internationalize it, my research assistant and I wrote 24 new cases for the European program, half of which were on the companies of my former AMP students."

From 1978 on, McFarlan traveled to Asia at least once a year. In 1998, he began a nine-year period as senior associate dean of HBS's Asia Pacific initiative. In the same year, he began helping Tsinghua University, in Beijing, China, to

6 Robey, D. and Markus, M. L., "Beyond Rigor and Relevance: Producing Consumable Research about Information Systems," *Information Resources Management Journal* (11:1), December 1998, pp. 7-15.

develop its executive education program and case development program. He had to adapt his case writing approach to the needs of a country that was rapidly advancing its adoption of technology in business:

"Faculty at Tsinghua asked us to write a case on a new very small company. [Its] annual sales were less than \$1 million—not very exciting. I swallowed hard because the [leadership] wanted me to write up the case and then spend an hour and 20 minutes in class talking about it, after which the CEO was to come in for the next hour. As far I could see, there was an excellent chance the company would be bankrupt by the time the class day arrived. Trust me, it is really hard to teach a case on a bankrupt company. The company was Alibaba.⁷ Jack Ma, the founder and CEO, came in for the second hour, and the rest is history."

Post-retirement from HBS, McFarlan spent five years at Tsinghua University, where he oversaw the development of close to 100 pieces of teaching materials, distributed in Chinese by the university and in English by HBS Publishing.

In addition to the opportunities provided by executive education, McFarlan's scholarship and teaching benefitted from his service on corporate boards:

"From the early 1970s, I was continuously on boards of directors of both small technology companies and two large IT-intensive organizations. Over the decades, this allowed me to see firsthand how technology issues played out at the most senior levels of the organizations and led to a series of cases. These cases included CSC, Li & Fung, Pioneer-Hibred, Capital Holdings and the Index Group."

McFarlan also felt that his personal experience of managing IT had increased his ability to research and teach managerial topics:

"I was [the] de facto HBS CIO and responsible for big pieces of [the] school's IT expenditures as we went from timesharing

to PCs and finally onto the internet. I not only taught managers, but an important part of my life was actually being a manager."

Because his work targeted senior executives and general managers, McFarlan published much of his research in *Harvard Business Review*. He knew, though, that the much-needed research in the IT management field would not be targeted at general managers, and he also knew that, as a general management journal, *Harvard Business Review* could not be the premier journal for a single discipline. In addition, many IT management researchers were working in institutions that did not value research targeted at the impact on practice. Once established as an influential researcher in the field, he worked to establish the credibility of practice-oriented research in other corners of academia.

Championing an Academic Journal Relevant for IT Practitioners

In 1977, the MIS Research Center (MISRC) at the University of Minnesota and the Society for Information Management (SIM) jointly addressed the need for an academic journal dedicated to IT management by introducing *Management Information Systems Quarterly (MISQ)*, which is still one of the most highly regarded journals in the information systems field today.

The MISRC provided the editorial leadership, publication office and the content, while SIM paid the printing and mailing costs. Writing in the inaugural issue, Gary Dickson, *MISQ*'s first editor-in-chief, described the vision of the new publication as "a journal which is useful for the practitioners and at the same time appeals to those interested in theory and research." The requirement for usefulness to practitioners was essential because every member of SIM, mostly information system leaders, would receive a copy. The need to appeal to researchers was essential because the journal wanted to provide an outlet for IT management research that would encourage high-quality research.

By 1985, nascent doctoral programs had begun to turn out graduates with Ph.D.s in information systems. Those programs and the pipeline of new Ph.D.s were essential to growing the IT management research field and its impact, and to increasing the number of IT-literate

⁷ McFarlan, F. W., Lane, D. and Knoop, C. I. *Alibaba.com*, Harvard Business School Case 301-047, November 2000. (Revised December 2001.)

undergraduate- and masters-level students coming out of universities. In supporting research and teaching, *MISQ* had, by then, achieved a modest degree of academic credibility.

Some academic leaders, however, felt that the articles intended to appeal to practitioners were limiting the journal's acceptance by college promotion and tenure committees. Eph McLean, another founder of the information systems academic field, recalled that in the early days of the journal, an article in the applications section of *MISQ* "was the kiss of death for a young scholar." To counter what he believed to be the journal's still struggling reputation, Bill King, when he took over as *MISQ*'s second editor-in-chief, wrote personal letters to business school deans describing the journal's rigorous review process.

Concerns about academic credibility within business schools led the journal to lean heavily on theory and hypothesis testing in accepting content. Understandably, the SIM management council then began to question the journal's usefulness for its members. Balancing practice and scholarship in the pages of *MISQ* was becoming a difficult challenge.

In 1985, Jim Wetherbe, executive publisher of *MISQ* at the University of Minnesota, was alerted that, at the next management council meeting, SIM officers would consider, and likely approve, a motion to defund *MISQ*. While *MISQ* generated modest revenues from library and academic subscriptions, Wetherbe convinced McFarlan that *MISQ* could not survive without SIM funding. Knowing that most SIM members—indeed, most IT leaders—had a great deal of respect for McFarlan, Wetherbe asked him to serve as *MISQ*'s editor-in-chief: "Warren, if you don't do this, MIS Quarterly will cease to exist; it's that important! I'm going to go to the SIM management council meeting, and if I can tell them you're willing to be the next editor, I think we can save it."

In 1985, the continuance of *MISQ* was essential to sustaining nascent IT management research. *The Journal of Management Information Systems* was only in its second year; Bill King would not publish the first issue of Information Systems Research for another five years; and the Journal of the Association of Information Systems would not arrive on the scene until 15 years later. McFarlan explained to members of SIM's council

why *MISQ*—and more generally, academic research—was critical to the future of the field:

"I was able to convince them that you need to grow the seed corn for the field. I told them how important the [articles] on the research side of MISQ were to the academic programs. I also promised to write summaries of each article to help SIM members understand why these things are being done at this time, and why this is important to the kind of work they are doing."

But McFarlan also felt he had to reassure the field's academic leaders:

"Some were very suspicious that I was coming from Harvard and would be corrupting the journal. My intention was to make sure they were happy at each step along the way. We retained the existing reviewing and editing processes and made sure that those were squeaky clean. Then we relied on my article summaries to interpret and bring value to the practitioner audience. I also invited Izak Benbasat to serve in a new role as Senior Editor for Theory and Research."

With financial disaster temporarily averted at *MISQ*, Benbasat and future editors-in-chief and senior editors of the journal continued to focus on the research side of the journal and on strengthening its scholarly reputation. Meanwhile, Jim Wetherbe and the MISRC worked to increase subscribers and develop other revenue sources. McFarlan had stepped in at a critical moment. A decade after Wetherbe's meeting with the management council, SIM relinquished its co-ownership to the University of Minnesota and ceased funding the journal. By then, *MISQ* was financially self-sustainable and its scholarly reputation was on a firm footing.

Championing Practice-Based IT Research

As part of his 1985 agreement with SIM to serve as *MISQ*'s editor-in-chief, one of McFarlan's conditions was that he be granted a seat on the SIM management council:

"I wasn't going to have people throw grenades at me from thousands of miles away."

He used that seat to identify opportunities to link research and practice. In the late 1980s, he proposed a program that he called the Advanced Practice Council (APC). He described it as "establishing a bridge between academia and practitioners." It would present the best of academia to practitioners and promote a dialogue with scholars that might help APC members apply this new knowledge while also helping to shape academic research. The CIO members of the council agreed to join the APC if McFarlan accepted the position of APC Director.

The fees paid by APC members were, and still are, used to fund commissioned presentations and research projects. Each year, members identify topics of interest and selected researchers are invited to propose ideas. Presentations are carefully vetted in advance to ensure they effectively communicate to the executive audience. Once the program was well established, McFarlan handed the reins to a new program director, Madeline Weiss, and brought in a research director, Bob Zmud, who, like McFarlan, had previously served as MISQ's editor-in-chief. The APC continues to this day, meeting three times a year for two days with up to 12 researchers. It has distributed several million dollars to academic IT researchers over the years.

McFarlan never lost his enthusiasm for finding ways to impact management practice through academic research, but he was well aware of the challenges. In addition to academia's devotion to theory, academic research moved at a slower pace than business change. Recently, in 2023, McFarlan questioned the ability of *MIS Quarterly* or, by extension, any scholarly journal, to keep up with the pace of IT-driven change:

"MIS Quarterly doesn't fit the pieces of this very well, for [business technology innovation] is wave after wave of change. It's very hard to build rigorous knowledge, step by step, and building block by building block."

McFarlan's Legacy

"In 1976, I went to a Society for Information Management conference in Chicago. Warren McFarlan from Harvard was speaking. Seeing him completely changed my career trajectory. I was in awe at how much he knew, how much he shared, and how captivated the audience was. He became my role model." Jim Wetherbe, Richard Schulze Distinguished Professor, Rawls College of Business, Texas Tech University

This reaction to a McFarlan presentation was not unusual. Richard Nolan, who taught at Harvard for 20 years before leaving to form the Nolan and Norton consulting firm, recalled a fellow faculty member's reaction when watching McFarlan's perform:

"Dave Norton, one of our first IT management DBA graduates, exclaimed to me while we attended the first sessions of Warren's and my jointly developed HBS second-year advanced IT strategy and management course: 'Look around! Everyone is like hypnotized! Warren is a force of nature!!!"

Quality teaching and near constant curriculum redevelopment were, and remain, essential skills at HBS. McFarlan was among the school's most impactful in the classroom. Rob Austin, a longtime leader of the HBS Information Management Executive Program, described the key role McFarlan played:

"Warren was our clean-up hitter. We tried to get junior faculty in front of the executives. But you had to mix them in with faculty who were going to get [close to perfect teaching evaluations]. That was Warren. I always tried to start and end the program with him. He always hit a home run!"

Though almost all faculty members employed the case method, they used it in quite different ways. John Sviokla, a member of the HBS faculty from 1986 to 1998, described McFarlan's teaching style:

"There was a continuum of teaching [styles] at the school. At one end were [those] who were good listeners and weavers. At the other end were [those who] performed and declared. Warren was at the extreme end of that latter group. I knew that trying to copy what he did was never going to work for me."

McFarlan's remarkable presentation skills were legendary among both academic and practitioner audiences. He shunned the lectern, instead stalking about the room or stage, staying physically and mentally close to the audience, making eye-contact, signaling out students by name. He drew the audience in with on-topic humor, self-deprecation, undeniable enthusiasm and personal connections with the data, organizations and people he described. His voice was an instrument that he played like a first violinist—varying the volume, pitch and the length of delay between words. Arms flailing, hands gesturing, fingers pointing, he swung his head from one side of the classroom to the other, from one set of attentive eyes to the next. Every movement accentuated his message and further captivated his audience.

"I asked Warren why he had developed his particular way of speaking. He told me, 'Well, if you started teaching information technology in the 1960s to 45-year-old executives you had to find a way to keep the students awake.'" Gabriele Piccoli, 2023, Edward G. Schlieder Endowed Chair of Information Sciences, E.J. Ourso College of Business, Louisiana State University

Valuing Team Members and Networking

"For much of my career, I was part of a team of extraordinary colleagues. My senior colleague Jim McKenney, in an adjacent office for nearly a decade, was a critical early collaborator. Coauthors Dick Nolan, Jim Cash and Linda Applegate each brought both a passion for practice and new insights in how to improve it. Our two-week summer DP Manager course always included a new junior faculty member. I would try to

accompany the individual on his or her first field case trip to help jumpstart their link to practice and build a working relationship. Finally, each Harvard dean for three decades gave me the necessary financial resources (whether I would succeed or hang myself was left to me)."

Sirkka Jarvenpaa, who spent a year at HBS as a Marvin Bower Fellow in 1994, noted that McFarlan's years of case writing and executive education had created a gold mine for field researchers:

"He has this incredible network. Warren took the time to learn what we were doing and helped get us access to research sites. He could get us in almost anywhere." Sirkka Jarvenpaa, Bayless/Rausher Professor of Information Systems, University of Texas at Austin

Lynda Applegate, who had joined HBS in 1986 with a Ph.D. from the University of Arizona, was one of a small number of women on the HBS faculty. She felt McFarlan had helped her, and many others, make a challenging transition:

"Warren had the ability to relate to people and to connect with them. He invested the time to get to know everyone as individuals, particularly new faculty. He appreciated their individual talents, and it didn't matter if their degrees weren't from Stanford or Harvard. He accepted people as people, not just someone to put in a slot. That was rare back then at the school." Lynda M. Applegate, Baker Foundation Professor, Emeritus, Harvard Business School

Lasting Impact on IT Management

Dick Nolan, a longtime collaborator with McFarlan, reflected on the reach of McFarlan's contributions:

"During my 20 years at Harvard Business School as well as my 14 years after as CEO of Norton IT Consulting Company, I continued to witness the pioneering and lasting impact that Warren's teaching and research has had on the explosion of IT strategy and management." Richard L.

Nolan, William Barclay Harding Professor of Business Administration, Emeritus, Harvard Business School

Another of McFarlan's longtime colleagues, Jim Cash, valued his support and praised his contributions to the field:

"I am one of many people that benefitted from Warren's leadership, innovation and inspiration. He consistently sought to translate high-quality research into accessible concepts for technology executives and general managers. I can think of no one else that contributed to the field for as long a period of time at such a high level of quality and effectiveness."

James I. Cash, James E. Robison Professor of Business Administration, Emeritus, Harvard Business School

Benn Konsynski, McFarlan's colleague at HBS from 1986 to 1993, described the breadth of his contribution to the field:

"I doubt there is a senior technology executive that has not been touched by Warren McFarlan's presentations and writing." Benn Konsynski, George S. Craft Distinguished University Professor, Emory University

The impacts of McFarlan's career have not abated with his retirement. Lynda Applegate noted that McFarlan's legacy extends beyond his own work to the work of those he mentored:

"Warren was very good at mentoring young faculty [members]. He helped them develop the skill to learn the practical side of a business and then to put a theoretical framing around their observations. That is a tremendous gift he has given the MIS and information technology field."

Prominent academic leaders outside of HBS have praised his contributions to the field. Bob Zmud, a former *MISQ* editor-in-chief and former director of research at the APC, described McFarlan's "immense [role] in building credibility for IS academics among respected industry executives/practitioners." Izak Benbasat, former editor-in-chief of *Information Systems Research*,

placed McFarlan and Jim McKenney "at the highest level, as founders of this area, especially when we talk about strategic management." John King, another former editor-in-chief of *Information Systems Research*, characterized McFarlan as "a thought leader who didn't bother with the false dichotomy between theory and practice." Another founder of IT management research, Eph McLean, lauded McFarlan as a "giant in the field."

In summary, McFarlan's extraordinary career has been like no other in helping business leaders develop strategies and management practices to take advantage of information technology, while simultaneously establishing IT management as an academic discipline.

McFarlan's impact is perhaps best captured by praise from another former colleague, John Sviokla, a graduate of the Harvard MBA and DBA programs and founder of Gen AI Insights, who recalled: "[I had] the good fortune to have Warren as a teacher, mentor and colleague. Every institution he's touched, as far as I can tell, is better off for him."

Appendix: How IT Became Part of HBS's MBA Program

In the 1960s, senior business managers were taking notice of the potential impacts of IT on business. In response, McFarlan and his IT colleagues at HBS introduced an Executive Education Program for IT leaders and added IT management as a topic to the school's Advanced Management Program. The MBA program was a more difficult nut to crack. Since John Dearden's first MIS course in 1962, there had been a second year IT elective, but getting IT into the core first-year curriculum remained out of reach. Four factors led to its eventual inclusion in 1987.

First was a new HBS dean, John McArthur, who sought to reenergize the faculty. McArthur had asked McFarlan to step down as head of the Executive Education Program and spend a year without teaching or administrative responsibilities. He had also asked McFarlan to organize the "Information Systems Research Challenge," a three-day workshop and published compendium, edited by McFarlan, of what he described as 12 "mission aiding" research articles, authored by leading scholars in the field. Over the

next several years, several IT faculty members from other institutions would spend a year each at HBS as Marvin Bower Fellows. Together, these initiatives were intended to bolster the intellectual underpinnings of HBS's IT faculty group. The group was further strengthened by the dean's decision to allow McFarlan to hire two new IT faculty members and to begin to admit four IT doctoral students per year.

Second, freed up from both teaching and administration for a year, McFarlan's own research productivity blossomed. The three-paper "Information Archipelago" series,^{8,9,10} starting in January 1982 and coauthored by HBS colleague and new office neighbor, James McKenney, demonstrated the growing importance of IT in corporate C-suites. McFarlan also identified several cases, including Frontier Airlines, Otis Elevator and American Hospital Supply, that he believed convincingly demonstrated the strategic value of information systems: "I screened those and strung them together in a little obscure paper I published in Harvard Business Review in 1984 called 'Information Technology Changes the Way You Compete.'"¹¹

A year later, another *Harvard Business Review* paper¹² by the already renowned HBS strategy professor Michael Porter and co-author Victor Millar, managing partner at Arthur Andersen & Co., further burnished IT's perceived value in the C-suite. McFarlan believed that, together, these five papers had finally demonstrated information technology was "an important part of the value chain, a notion that was a big step along the way."

The third factor elevating the importance of IT was Dean McArthur's appointment of McFarlan to head up the first-year MBA core curriculum starting in 1982. As McFarlan described it: "It had been 15 years since I taught management control

in the core, so I knew it wasn't exactly why he had put me there."

Fourth was the arrival of personal computers into HBS classrooms. McArthur asked McFarlan to consider how students might use IT to transform their education and to "think big about it." McFarlan "swallowed hard, forgot about price and proposed that every student should [have] a \$3,000 piece of equipment."

While some faculty members' PCs sat unopened in the box for the first year, others took to them with enthusiasm. So did the MBA students. But when informed that they would be able to use their PCs for the final exam in their first-year core finance course, McFarlan recalled that they complained this gave an unfair advantage to students who were already computer literate.

"The professor who was heading up the course confronted the students—'Give me a break. You're telling me you're ignorant on computers on May 31st when you take your finance exam, but will be expected to have full computer skills and spreadsheet capability when you go to your internship on June 1st at Goldman Sachs?' That blew the complaints away. The spreadsheet program, at the time VisiCalc, absolutely transformed our curriculum."

Colleagues who had previously been skeptical of the value of IT to general managers began to see the light. One, as McFarlan described, was Ted Levitt, a legendary professor of marketing.

"Ted had been one of my great detractors. He came to me in 1986, or '87, telling me: 'Warren, you must just feel tremendously excited. Everything you said was going to happen, has happened. Marketing was fundamentally transformed by IT, operations was fundamentally transformed, and data, at every step along the way, became the weapon and mechanism as to how you would go about doing things. IT-driven transformation changed things in a really big way.'"

However, McFarlan's celebration would be short lived:

8 McKenney, J. L. and McFarlan, F. W. "The Information Archipelago—Maps and Bridges," *Harvard Business Review* (60:5), September 1982, pp. 109-119.

9 McFarlan, F. W., McKenney, J. L. and Pyburn, P. "The Information Archipelago—Plotting a Course," *Harvard Business Review* (61:1), January 1983, pp. 145-156.

10 McFarlan, F. W. and McKenney, J. L. "The Information Archipelago—Governing the New World," *Harvard Business Review* (61:4), July 1983, pp. 91-99.

11 McFarlan, F. W., op. cit., May 1984.

12 Porter, M. E. and Millar, V. E. "How Information Gives You Competitive Advantage," *Harvard Business Review* (63:4), July 1985, pp. 149-160.

"I won it so big that I actually destroyed myself. Several of our marketing faculty wrote really strong books on the subject at this point. So did operations management people. Something that nobody cared about for 30 years, something they were happy to delegate to another group, they suddenly discovered was so core to their operations that they wanted to grab hold of it within their area."

The first-year required IT course ran for three years, from 1987 to 1989. McFarlan described the course as intended to "carry us forward while we modernized the operations, management and the marketing forces with the new technology." Elements of the IT curriculum were absorbed into other areas, particularly operations management.

Over the next few decades, IT and McFarlan would stay near center stage in executive education programs. In 2005, McFarlan and Nolan's *Harvard Business Review* paper "Information Technology and the Board of Directors"¹³ targeted a more elevated audience. Information technology's 40-year journey from back-office data processing to the boardroom and from "just number crunching" to "strategic necessity and vulnerability" was finally complete.

About the Authors

Blake Ives

Blake Ives (bives@mac.com) is Distinguished Scholar in Residence in the Supply Chain and Information Management Department in the School of Business at the College of Charleston, and C.T. Bauer Chair in Business Leadership (emeritus) at the Bauer College of Business, University of Houston. Blake is a senior editor and frequent author for *MIS Quarterly Executive*. His past appointments have included editor-in-chief of *MIS Quarterly*, research director of the Society for Information Management's Advanced Practice Council, and president of the Association for Information Systems.

13 Nolan, R. and McFarlan, F. W. "Information Technology and the Board of Directors," *Harvard Business Review* (83:10), July 2005, pp. 96-106.

Mary C. Lacity

Mary Lacity (MLacity@walton.uark.edu) is the David D. Glass Chair and Distinguished Professor of Information Systems in the Sam M. Walton College of Business at the University of Arkansas. She has published over 100 journal articles and over 30 books. She is a senior editor and frequent author for *MIS Quarterly Executive*. Her 2018 article for that journal¹⁴ won an Association of Information Systems Best Information Systems Publications Award at ICIS.

Jeanne W. Ross

Jeanne Ross is a retired principal research scientist at MIT Sloan's Center for Information Systems Research. She is also a co-founder and former editor-in-chief of *MIS Quarterly Executive*. Her preferred publication outlets, in addition to *MIS Quarterly Executive*, were books, *Sloan Management Review* and *Harvard Business Review*. Jeanne dedicated her career to practice-based research on IT strategy and management.

14 Lacity, M. C. "Addressing Key Challenges to Making Enterprise Blockchain Applications a Reality," *MIS Quarterly Executive* (17:3), September 2018, pp. 201-220.