

2017

The Future of Academic MIS: Redux

Joey F. George

Iowa State University, jfgeorge@iastate.edu

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

Recommended Citation

George, Joey F. (2017) "The Future of Academic MIS: Redux," *Journal of the Midwest Association for Information Systems (JMWAIS)*: Vol. 2017 : Iss. 1 , Article 2.

Available at: <http://aisel.aisnet.org/jmwais/vol2017/iss1/2>

This material is brought to you by the Journals at AIS Electronic Library (AISeL). It has been accepted for inclusion in Journal of the Midwest Association for Information Systems (JMWAIS) by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

Date: 01-31-2017

The Future of Academic MIS: Redux

Joey F. George

Iowa State University, jfgeorge@iastate.edu

Invited Paper

This invited article is based on a keynote speech delivered at the 2016 annual meeting of the Midwest chapter of the Association for Information Systems (MWAIS) held on the campus of the University of Wisconsin at Milwaukee. My keynote revisited a topic I had spoken about twice before, the “Future of Academic MIS.” The first time I took on this topic was in a keynote address, called appropriately enough “The Future of Academic MIS,” delivered July 10, 2010, at the 2010 Pacific Asia Conference on Information Systems (PACIS), in Taipei, Taiwan. One year later, I was asked to give a keynote talk at the doctoral consortium of the 2011 PACIS, held in Brisbane, Australia. The talk, creatively called “The Future of Academic MIS: An Update,” was delivered on July 7, 2011. This article is an effort to capture the MWAIS presentation in a written format.

Copyright © 2017 by Joey F. George

- Thomas Watson (1943): “I think there is a world market for maybe five computers.”
- Ken Olson (1977): “There is no reason anyone would want a computer in their home.”
- Gartner (2005): “By 2015, 40% of today's IT job roles will be lost to automation.”
- Yogi Berra (1925): “It's tough to make predictions, especially about the future.”

1. Introduction

As the quotes that preface this article indicate, predicting the future is tough. This article is about the future of the academic discipline called Management Information Systems, often referred to simply by the acronym MIS. Since the late 2000s, faculty who teach MIS and conduct research in this academic discipline have been concerned about issues like fluctuating enrollments, changing technologies, and concerns about the relevance of research in the discipline.

This article begins by describing and examining the field of MIS in 2010, and then the analysis turns to a description of what the future looks like from the perspective of 2016. The next topic is the intellectual underpinnings of our field, with a focus on the broad research categories that have characterized MIS research in the past. This leads to a discussion of a series of research topics that are important today, to both academics and practitioners, and that will still be of great importance to both groups three to five to even 10 years in the future. The next section explores what is being published in top MIS journals currently, compared to which topics have been popular over the past few decades, and compared to the research topics identified as important now and in the future. The article ends with a few closing thoughts.

2. How the Future of Academic MIS Looked in 2010

In 2010, demand for people to fill MIS jobs had slowed, especially compared to the days of the Internet boom, so MIS student enrollments were much smaller than in 2000, but they were steady. The demand for MIS faculty was relatively flat, or even declining in some cases, and there was a surplus of people with doctorates in MIS who wanted faculty jobs. Demand had been falling steadily since the Internet bubble burst in 2001, although it seemed to have hit bottom in 2008. However, just as things seemed poised to grow, the global economy was buffeted by the Great Recession, beginning in December 2007. In academia, job growth stopped, and in fact, many universities began to cut jobs. In the US, there were several highly publicized reports about MIS faculty who had lost their jobs. For example, at the University of Kansas, untenured faculty were terminated. At the University of Central Florida, the MIS department was eliminated, and all of the faculty, tenured or not, were fired. In general, the future did not look too bright.

To get a sense of what leaders in the field thought was happening in 2010, and what the future might look like for academic MIS, I surveyed past Presidents of the Association for Information Systems (AIS). (There were 15 former presidents at the time). I got responses from eight. I asked what they thought about the future of academic AIS. Responses varied across the spectrum, from optimistic to pessimistic. The following three responses were typical:

- “I think we will still exist for a few reasons:
 - New information technologies continue to be developed...
 - Organizations will continue to struggle to figure out how to make the best use of these new technologies... We figure out what works and what doesn't.
 - In a few years' time, there will be a new set of problems. Hence the process starts all over again.” – **Michael Myers**
- “I think we are at a crossroad ... if we can provide value to the three stakeholders: students, industry, politicians/society, we for sure will prevail and flourish.” – **Niels Bjørn Andersen**
- “I am rather pessimistic about our future as I see little change on the horizon and lack of mechanisms for innovation. I foresee:
 - We will not have developed a conceptual foundation for the field

- We will still be arguing about relevance versus rigor
- We will still be applying social science theory to an IS context
- We will be followers rather than leaders in the academic field
- Will still be complaining about the quality of reviewing
- We will still be talking about A journals, when the notion is an ecological fallacy, rather than identifying A articles
- I will have found another 4-5 items to complain about our lack of progress and innovation.” – **Rick Watson**

3. How the Future of Academic MIS Looked in 2011

In 2011, things had begun to change. The (at the time) new tech boom in Silicon Valley was beginning. The boom was driven in part by a demand for people with mobile computing skills (Dice, 2011). Hiring was poised to grow dramatically, not just in the US (Reed, 2011) but overseas as well (Thibodeau, 2011). Students were starting to return to MIS, so the demand for faculty had stabilized or was slightly increasing. The long term outlook was good: According to the US Bureau of Labor Statistics, jobs in computer systems design and related services were projected to grow by 645,000 between 2008 and 2018 (US BLS, 2009).

4. How the Future of Academic MIS Looks in 2016

Since that hopeful assessment in 2011, things have continued to improve for academic MIS. The number of computer occupation jobs is projected to grow by 22% through 2020 (Thibodeau, 2012). Students have heard these projections, and the number of MIS majors have grown accordingly. For example, at Iowa State University, the number of MIS majors has increased from 180 in 2012 to 291 in 2017, a 62% increase over five years. And ISU is not an outlier. Anecdotally, the market for MIS faculty has flourished and seems to grow stronger every year.

From the perspective of 2016, the future looks good.

As the projections about academic MIS turned from cautious or even pessimistic in 2010, to hopeful in 2011, to very optimistic today, it is important to remember how growth occurs in academic MIS. As industry prospers, companies seek more employees in MIS. Students in business schools choose majors they believe will lead to jobs. More students means demand for more classes, which results in demand for more faculty. Demand for more faculty leads PhD programs to expand and enroll new doctoral students. With economic downturns, such as those the field suffered through in 1991, 2001, and 2007-08, industry cuts back and the number of available jobs falls. Students switch majors. Demand for faculty falls and vacant faculty lines are not filled. As doctoral programs take years to complete, their production is often out of sync with economic conditions, so students who enter their programs in times of economic expansion may graduate into a world of economic contraction. They are ready to work, but the opportunities for good academic jobs have shrunk.

5. The Intellectual Underpinnings of Academic MIS

Academic MIS has always been a dynamic field, populated by people with a wide range of research interests and skills, chasing a host of fascinating leading-edge topics. Although many topics emerge with great hype and then disappear quickly, other topics endure and become part of the intellectual basis for the field. A study by Sidarova and colleagues (2008) shows how the focus on various research areas within the field has shifted over time (Figure 1). As an applied discipline, the topics we research should be of interest to MIS practitioners. That has not always been the case. Over the years, there have been several calls to make our research more relevant to the practitioner community.

The reason for these recurring calls for relevance, at least in part, is that it takes years for us to conduct our studies and then publish the results in leading MIS journals. It is not at all unusual for an article in a top journal to have followed a trajectory that looks like this: one year to design and conduct the study, three years in the review process, and after acceptance, one additional year in the journal's queue, waiting for publication. By the time the article is in print, the research it is based on is five years old. In a dynamic field like information systems, five-year-old research

is often not of much interest or value to practitioners.

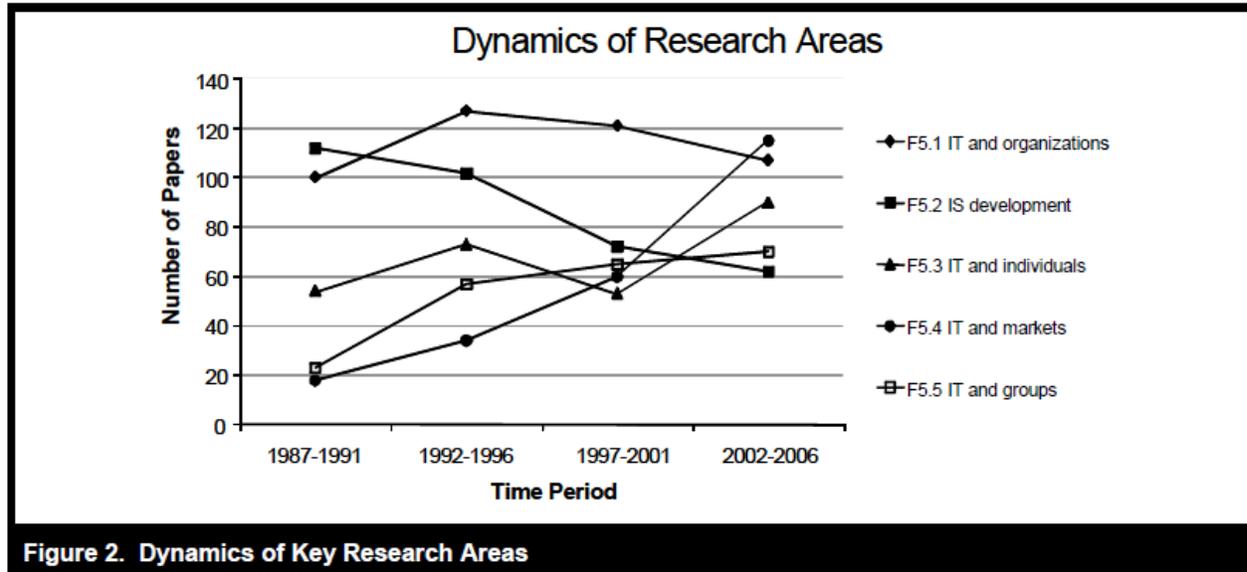


Figure 2. Dynamics of Key Research Areas

Figure 1: The intellectual underpinnings of academic MIS (from Sidarova, et al, 2008). Copyright MIS Quarterly, used by permission.

Planning a study and the journal review process take so long in part due to the importance of conducting rigorous research. Rigor is vital if our research is to have scientific validity. We need to find a balance between research and rigor. In a famous article on this subject, Benbasat and Zmud (1999) suggest that one way to achieve this balance is to research topics that will be of interest to future stakeholders – journals, colleagues, and practitioners. This is not an easy admonition to follow, but in 2016, we are fortunate, as it is reasonably straightforward to identify topics that are important now and will continue to be for the foreseeable future.

6. Topics Important to Academic and Professional MIS, Now and in the Future

There are several topics, of interest to both academics and practitioners, that have been building in importance over the last few years and which will continue to be important for years to come. Some of these topics were identified as a group of important topics as early as 2013 (Murphy, 2013): cloud computing, big data analytics, and mobility. Today, given the run of big data breaches, from Target in 2013 to Yahoo's massive breach in 2014, confirmed in 2016, security should be added to the list. Finally, both health information systems and neuro-information systems should be included as topics, given the keen interest in them in both academia and practice.

Cloud computing: Cloud computing, where systems and data are stored on remote servers rather than locally, has been increasing in popularity over the past decade. While estimates of just how much corporate and personal computing takes place in the cloud are difficult to come by, there are some industry studies that have looked at trends. For example, in a study of 23 million cloud users around the world, Skyhigh Networks (2016) found that these users generate over 2 billion unique transactions in the cloud each day. They also found that 15.8% of files in the cloud contain sensitive data, and that the average organization experiences 20 cloud-related security threats each month. Many articles have been written on the challenges that managers face in moving their systems and data to the cloud (e.g., Bednarz, 2014), and the challenges are far from having been conquered. Given security and management issues related to the cloud, and given its growing popularity, cloud computing will remain an issue important for MIS academics and practitioners for years to come.

Big data analytics: Business intelligence, business analytics, and big data have been the focus of incredible excitement for many years now (for example, *MISQ* published a special issue on analytics in 2012). While the excitement has been fed by hype, it has also been fed by the realization that data volumes continue to grow at

staggering rates. In 2010, IDC (Gantz & Reinsel, 2010) predicted that by 2020 the amount of digital information available in the world would grow to 35 trillion gigabytes! Clearly, the challenges of collecting, storing, mining and visualizing all of that information will continue to grow as the volume of data grows. Despite the hype, big data is a genuine phenomenon and will continue to interest academics and practitioners for a long time.

Mobility: Few people could have predicted the impact that mobile phones, especially smartphones, would have on business and society. Although mobile phone penetration has hit 97% worldwide, with 7 billion subscriptions (ICT, 2015), mobile traffic growth continues at a rapid pace (predicted to grow by 59% in 2015 (Gartner, 2015)), driven largely by video. The mobile transformation is not over.

Security: Although research on information systems security has a long history in academic MIS, interest in security grows with each announcement of a large data breach: 40 million customer records stolen at Target in 2013 (Perloth, 2013); 500 million Yahoo records stolen in 2014 (Oremus, 2016). In 2016, many were charging Russian state actors with hacking into the accounts of people associated with the Democratic National Committee. Obviously, security will remain important to academics and practitioners for the foreseeable future.

Health IT: The adoption rates for basic electronic health records systems for hospitals has grown dramatically in the US, from 9.4% in 2008 to 75.5% in 2014 (Charles, Gabriel & Searcy, 2015). While these adoption rates are impressive, they by no means solve all of the issues related to information technology in healthcare.

NeuroIS: NeuroIS, or neuro-information systems, is the study of social science issues related to information systems through a new lens: neuroscience technology, such as electroencephalograms and functional magnetic resonance imaging equipment. Important initial work has already been done in neuroIS, and the two top MIS journals have published research manifestos on the subject (Dimoka et al., 2010; Dimoka, Pavlou & Davis, 2010).

7. Recent Trends in Publishing in MIS Journals

How have recent publication trends compared to the five general areas of intellectual content in MIS identified by Sidarova and colleagues (2008)? Although they represent a small sample, the contents of the last two issues published in 2015 for both *MIS Quarterly* and *Information Systems Research* (September & December issues, volume 39 for *MISQ* and volume 26 for *ISR*) were reviewed for a comparison. The results appear in Table 1. *MISQ* published 19 research articles in these two issues; *ISR* published 20.

Category	ISR	MISQ	Total	Percent
IT & individuals	9	9	18	64.15
IT & organizations	2	10	12	30.77
IT & markets	9	0	9	23.08
IT & groups	0	0	0	0.00
IT & development	0	0	0	0.00
Total	20	19	39	100.00

Table 1: Classifying papers published in the second half of 2015 in *MISQ* and *ISR* by the Sidarova et al., (2008) categories.

In some ways, the results are what one might expect. Most of the published work could be classified as investigating topic areas that would fall under the “IT and individuals” category. Each journal published nine articles in this category. The next largest category across both journals was “IT and organizations,” with 12 articles. Given *MISQ*’s tendency to focus on organizational and managerial issues, it is not surprising that 10 of these 12 articles were

published there. The third category was “IT and markets” – nine papers, all of which appeared in *ISR*. No papers were published that fit the other two categories, “IT and groups” and “IS development.” If you compare the popularity of research categories from the second half of 2015 to the last time period in the Sidarova et al., (2008) paper, you’ll see that the popularity of topics is similar, although the ranking is slightly different. In the 2002-2006 time period, “IT and markets” was the most popular, followed by “IT and organizations” and “IT and individuals.” In general, you could argue that the relative positioning of the field’s intellectual underpinnings has become stable.

The last issues of 2015 in *MISQ* and *ISR* can also be examined to determine how many of the six previously discussed topics were showing up in published work. It is instructive to take a look at what leading MIS journals have published lately, in order to see which of the previously discussed topics are popular now. Knowing what is popular now will also give us some ideas about what we should start to see in our journals over the next few years.

As Table 2 shows, health IT, mobility, and security are well-represented. All three of these topics have been featured in MIS research for many years, but in the past, they were peripheral. It would appear that all three topics have now become mainstream, implying continued growth in the number of published papers that report studies based on these topics. Cloud computing and data analytics are represented by one paper each, but there will no doubt be more and more published articles devoted to these topics. Even though there were no published articles on neuroIS in these four issues, recall that two manifestos calling for work in this area were published in 2010, laying out a program of research. NeuroIS work requires access to expensive equipment and much time to run participants, so there are no doubt many related papers now in the review process. We should soon see papers published in the neuroIS area.

	MISQ volume 39 (41 articles)	ISR volume 26 (33 articles)
Health IT	5	2
NeuroIS	0	0
Cloud	0	1
Analytics	0	1
Mobility	2	2
Security	3	3
Social Media & Online Communities	3	5
Design Science	3	0
IT Impacts on Firm Performance	3	0
IT Employees/HR	3	1

Table 2: Counts of papers on select topics published in the last half of 2015 in *MISQ* and *ISR*.

8. Conclusions

When I first considered the future of academic MIS in 2010, it was not so promising. The field had been through hard times during the Internet bust, in 2001 and 2002, and as we were recovering, the Great Recession hit at the end of 2007. By 2010, it seemed that the field would probably survive but not necessarily thrive. But by the next year, in 2011, there were already signs of growth and expansion. By 2016, the situation had improved considerably, and from today’s perspective, it looks as if the field will both grow and thrive. I believe we are in a unique era, where several research topics of interest to both academics and practitioners can be easily identified today, and where these topics will remain important for the foreseeable future. This gives us a unique opportunity to work on interesting things now, things which will still be interesting to us and our various constituencies when our journal papers are published. As they say, only time will tell how all of this will work out. I believe we have reason to be optimistic.

References

- Bednarz, A. (2014). CIOs face cloud computing challenges, pitfalls. *CIO*. <http://www.cio.com/article/2825257/cloud-computing/cio-face-cloud-computing-challenges-pitfalls.html>
- Benbasat, I. & Zmud, R.W. (1999). Empirical research in information systems: The practice of relevance, *MIS Quarterly*, 23(1), 3-16.
- Charles, D., Gabriel, M., & Searcy, T. (2015). Adoption of electronic health record systems among U.S. non-federal acute care hospitals: 2008-2014. *ONC Data Brief* 23, April 2015. <https://www.healthit.gov/sites/default/files/data-brief/2014HospitalAdoptionDataBrief.pdf>
- Dice. (2011). America's Tech Talent Crunch. http://marketing.dice.com/pdf/Dice_TechTalentCrunch.pdf
- Dimoka, A., Banker, R.D., Benbasat, I., Davis, F.D., Dennis, A.R., Gefen, D., Gupta, A., Ischebeck, A., Kenning, P., Pavlou, P.A., Müller-Putz, G., Riedl, R., vom Brocke, J. & Weber, B. (2010). On the use of neurophysiological tools in is research: developing a research agenda for neuroIS, *MIS Quarterly* 36(3), 679-702.
- Dimoka, A., Pavlou, P.A. & Davis, F.D. (2010). "NeuroIS: The potential of cognitive neuroscience for information systems research," *Information Systems Research* 22(4), 687-702.
- Gantz, J. & Reinsel, D. (2010). The digital universe decade – are you ready? IDC-IVIEW. <http://www.emc.com/collateral/analyst-reports/idc-digital-universe-are-you-ready.pdf>
- Gartner. (2015). What's driving mobile data grown? Newsroom. <http://www.gartner.com/newsroom/id/2977917>
- ICT. (2015). ICT facts & figures. <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2015.pdf>
- Murphy, C. (2013). Innovation that gets results. *InformationWeek*, issue 1374, 9/9/13.
- Oremus. W. (2016). More than half a billion yahoo accounts have been hacked, Yahoo confirms. *Slate*. http://www.slate.com/blogs/future_tense/2016/09/22/yahoo_hack_in_2014_exposed_500_million_user_credentials_company_confirms.html
- Perlroth, N. (2013). Target struck in the cat-and-mouse game of credit theft. *New York Times*. http://www.nytimes.com/2013/12/20/technology/target-stolen-shopper-data.html?nl=todaysheadlines&emc=edit_th_20131220&pagewanted=print&r=0
- Reed, J. (2011). Mid-year IT hiring update Outlook brightens. *Datamation*. www.datamation.com/careers/mid-year-it-hiring-update-outlook-brightens.html
- Sidorova, A., Evangelopoulos, N., Valacich, J.S., & Ramakrishnan, T. (2008). Uncovering the intellectual core of the information systems discipline. *MIS Quarterly*, 32(3), 467-482.
- Skyhigh Networks. (2016). Cloud computing trends 2016. <https://www.skyhighnetworks.com/cloud-computing-adoption-trends/>
- Thibodeau, P. (2011). China's outsourcers poised for growth. www.computerworld.com/s/article/9215967/China_s_outsourcers_poised_for_growth
- Thibodeau, P. (2012). IT jobs will grow 22% through 2020, says U.S. <http://www.computerworld.com/article/2502348/it-management/it-jobs-will-grow-22--through-2020--says-u-s-.html>

US Bureau of Labor Statistics, (2009). Employment projections: 2008-18 news release, 12/10/2009, http://www.bls.gov/news.release/archives/ecopro_12102009.htm

Author Biography



Joey F. George is Professor of Information Systems and the John D. DeVries Endowed Chair in Business in the College of Business at Iowa State University. He previously held endowed chairs at Florida State University and Louisiana State University. His bachelor's degree in English is from Stanford University (1979), and he earned his doctorate in management from the University of California Irvine in 1986. Dr. George's research interests focus on the use of information systems in the workplace, including deceptive computer-mediated communication, computer-based monitoring, and group support systems. He was the Editor-in-Chief of *Communications of the Association for Information Systems* from 2006-2009, Senior Editor for *MIS Quarterly* in 2005, and Senior Editor for *Information Systems Research* from 2009-2013.

Page intentionally left blank