

Practitioner and Academic Solutions to IT Issues:  
Work from Both Worlds

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### **Abstract**

Information Technology supports both practitioners and academic researchers in a number of ways. For the professional, it is the day by day operational activities that meet the needs of an organization. IT systems must be operational; the needs of the organization's IT consumers need to be met. There is no place for *downtime* just because something is not working – operationally, all systems must be working regularly, kind of like electricity available at every outlet, systems need to be providing regular use for the consumer without a hitch. They are similar to other daily utilities we take for granted, and when they are *not available* for any reason, the organization can suffer greatly with the loss of thousands of dollars and thousands man hours of work.

For the academic, the what, how, and why of IT happenings in the larger sense is the concern. Many times, practitioner support from vendors and the IT community are the first points of contact. However, the academic world also can provide specific solutions and support based on many academic activities. The important thing to everyone is, whatever it takes, things must be corrected and work as smoothly as possible. In order to do this, practitioners need not only be entrenched in the IT community, they need to also have solid footing in the world of IT academia.

## **Research Related to Emerging Topics in Information Technology**

### **As Aligned with Textbook Readings**

One of the first items that literature review research helps with is to discover if other authors have already addressed the areas of your concern. If not or if yes, it can also give you some new ideas or perspectives. It helps you gain a list of contacts who have done this type of work by providing reference lists at the end of their publications (Leedy & Ormrod, 2014).

Along with this, it can alert you to gaps and issues and show you how others have designed studies in the same areas that may be your interest. Also, other than just resources, it can provide new data and give you an understanding of others' measurement tools (Leedy & Ormrod, 2014).

As part of building your research competencies, you need to become an excellent computer user. Learning the ins and outs of your library and use of databases, various academic search tools within the library, use of common databases and wikis, such as *Wikipedia* and search tools such as *Scholar.google.com* (Roberts, 2010).

As a way to become an excellent researcher and improve your overall skills, building lists of keywords and phrases to help with your searches is a great place to start. Your keywords, of course, will evolve with use. By testing them, rearranging words, adding or subtracting, using quotes and + sign, several of these tactics will improve your results (Leedy & Ormrod, 2014). Some places to first examine are:

- Library Catalog
- Online Databases
- Consulting with Reference Librarians
- Surfing the Internet

- Using Other Researcher's Citation Lists

All of these are great places to start and learn the ropes of doing your research (Leedy & Ormrod, 2014).

### **Three Ways Theories and Information Technology Research**

Three ways in which theories I am exploring in this course play a role in information technology research are:

Project Management – Project Planning Success vs. Failures

Project Management – Human Interactions on Project Teams

Project Management – Measuring Risks based on Staff Perceptions

While I am still at the level of floating and examining multiple topics and research methods, at this point in time I am most aligned with examining the greater project success through in depth planning, probably with the use of multiple case studies of multiple project manager's and the correlation of success to the quality of the planning documents and execution of those plans, using a grounded theory approach.

There are numerous theories and approaches to Information Technology. One approach, grounded theory, provides a means to look at the data and build a theory based on what it reveals and not from an *a priori* hypothesis, which original grounded theory creators, Glaser and Strauss, saw as a means of biasing the research by looking to fit it into (or not) a specific hypothesis. A Glaser states, "grounded theory method offers a rigorous, orderly guide to theory development" (Glaser, 1978); it is a means to create theory from the data, not a quantitative result of making the data fit (or not) into a hypothesis.

Yet, grounded theory attempts to look only at the data, which presents a problem of doing the literature review. Normally, done in advance, the literature review for many is quite

a controversy – do review before, during, or after the research (Dunne, 2011). While grounded theory is attempting to only look at the data, bias can be formed from first doing a review of the literature. However, if a researcher is looking to research a specific area, from a practitioner perspective, would he not already have some bias? In other words, an individual researcher cannot be entirely devoid of some preconceived ideas about the topic (Dunne, 2011).

IT reinvention and adaptation has been reviewed and studied by Nevo et.al (Nevo & Nevo et.al, 2016). Their findings show IT users are frequently reactive actors to IT external triggers, adapting much like adaptation in a biological situation (Nevo & Nevo et.al, 2016). Adaptation implies that the users are not the originators, but reactors to an external event(s). There is a huge social reorganization with the adoption and reinvention of IT which leads to change future workplace relationships. This study has more clearly defined how IT theories and social processes occur within the reinvention of IT in organizations (Nevo & Nevo et.al, 2016).

Web science is another IT theory of research. It is more than simply modeling and design. It is also about societal use of the Web. How individuals create new beneficial systems and how users benefit and consume Web pages. It addresses the Web at both the micro and macro levels. We need to move away from just the IT aspect of the web and add in the sociological and economical use of the Web to our study and research (Oinas-Kukkonen, 2015).

A great example of how IT blends into other areas of research.

### **Academic Solutions of Work Place Problems**

#### **Workplace Problems**

With close to 40 years of working within and around IT systems, first-hand knowledge of IT workplace problems is a given. IT systems, in several cases, either have multiple issues or just flat-out don't work. Issues impact the total IT spending, which was \$3.7 trillion in 2013

(Lovelock, 2013), with only One in eight of IT projects considered truly successful (Rivera-Ruiz & Ferrer-Moreno 2015). Academic solutions to real-world problems are definitely needed, with only a 13% project success rate, that means there was a non-success rate of over \$3.2 trillion for 2013.

In my specific workplace, specific problems from running system updates and patches without adequate testing has been a major issue, causing multiple system failures and 1,000s of lost worker hours and \$1,000s in costs to the government (yeah, that's our taxpayer dollars down the toilet!). With little academic rigor on these basic functions, the costs have been high. Investing a few hundred man hours of investigation and testing prior to taking action could have saved huge amounts and eliminated problems before they occurred.

Reviewing both academic and industry best practices in preventive maintenance could have prevented many problems and also freed up staff for time to perform other more important IT functions. The logic of cost savings used by this government agency is extremely short-sighted. Short term cost savings always trump long term solutions and the next technology *shiny object* always takes precedence over common sense system maintenance. The thinking is: *If it is not sexy, let's not buy it!* Use of some basic, academic research on problems and then *action* on the study's results would make an enormous difference on the outcomes of daily IT service needs.

### **Links Between Workplace Problems and Academic Solutions**

In order to improve a firm's performance, there is a need to develop a strong IT capability (Santhanam & Hartono, 2003). There is a need for a conceptual framework to look at the strategic leadership, the IT infrastructure, project success and overall performance of the organization. Depending on complexity and organization size, there is a need to build-out this

framework with a variety of IT and other complimentary professionals. Academic study of the organizational structure can produce *real world* solutions to extremely costly IT issues – failure rates of up to 87% (Rivera-Ruiz & Ferrer-Moreno 2015).

### **Different Methodological Approaches and Research Designs**

There are three areas of research that categorize most all research. They are: 1) qualitative 2) quantitative and 3) mixed methods. While at first, these methods may appear as three different, distinct methodologies, they should not be viewed as so. There can be a lot of nuance in their applications and an ultimate study should be determined as *primarily* a certain method, whereas from the onset, mixed methods claims to be both a qualitative and quantitative approach, simultaneously (Creswell, 2014). Even mixed methods could fall into a more predominantly one methodology.

There are several different qualitative methodological approaches and research designs available to the IT researcher. To name a few, there are narratives, phenomenology's, ethnographies, grounded theory, and case studies available on the qualitative side (Garcia & Gluesing, 2013). A more complete list of potential methodologies and study designs, based on searches of organizational change journals, would be:

#### Search terms in abstracts

Qualitative  
Narrative  
Interview  
Ethnography  
Case study  
International  
Cross cultural  
Multinational  
International and qualitative  
Cross border

(Garcia & Gluesing, 2013).

In short, there is hardly a limit on qualitative approaches that could be taken to meet the needs of a specific study (Garcia & Gluesing, 2013). Add in quantitative and mixed methods, and the potential research methods become exponential (Creswell, 2014)

### Scholar.Google and Capella Library vs. Trade Journals

From *Computerworld*, *Microsoft pledges two Windows 10 upgrades in 2017*, (<http://www.computerworld.com/article/3105500/microsoft-windows/microsoft-pledges-two-windows-10-upgrades-in-2017.html>) article by [Gregg Keizer](#), Aug 9, 2016 10:29 AM PT, a typical online IT trade journal is a story about the frequency of Windows 10 updates. Overall, the story carries no evidence of references from Microsoft (other than links to Microsoft blogs) or any individuals working or researching at Microsoft. The story just appears to be a series of statements, unsubstantiated, from Mr. Keizer with several links to other pages he had previously written for *Computerworld*.

Using Scholar.Google.com, results of a query “Windows 10’ updates” produces a list, again, more relevant to trade journals and eBooks than any true *scholarly* research:

**Google** "Windows 10" updates

**Scholar** About 682 results (0.05 sec)

**Articles** **Software Updates May Be Compromising Your IG**  
CRM John Phillips, FAI CDIA - Information Management, 2016 - search.proquest.com  
Abstract. The first **update** adds features that enable remote monitoring of operating system activities, and the second **update** enables older versions of operating systems to receive **updates** that are intended for **Windows 10** systems. ...  
Cite Save

**Windows 10 has just updated-Here's what new!**  
A Wee - Screen, 2016 - en.zinggadget.com  
... From the initial launch of **Windows 10** to date, Microsoft has been rushing with their development in optimization and improving the general stability of the operating system, while continue to push out **updates** to all **Windows 10** users. Although this act of **update** from Microsoft ...  
Cite Save More

**Sort by relevance**  
Sort by date

include patents  
Cite Save

Using Capella's library Summon, the following list of journal articles on the same topic appears:

Capella University

"Windows 10" update Search

DISCIPLINE

Any ✓

business (23)

engineering (13)

economics (12)

computer science (11)

sciences (6)

More...

PUBLICATION DATE

1/1/15 to

Clear

SUBJECT TERMS

LANGUAGE

Back to top

Journal Article: [Full Text Online](#)

3. **Microsoft Needs a "Splash" with Windows 10**

by [Greg Watry](#)  
R & D, 07/2015

Global rollouts of Microsoft's new operating system (OS) **Windows 10** begin at midnight and, with the release, the company is "opting for significance over...

Journal Article: [Full Text Online](#)

4. **With launch of Windows 10, Microsoft battles security, privacy concerns**

by [JESSICA STEPHEN](#)  
Wisconsin Law Journal, 10/2015

... **Window 10** users' concerns about confidentiality are overblown, according to experts. Not that anyone would know that from the Internet, where the response...

Journal Article: [Full Text Online](#)

5. **Banks Content to Wait to Upgrade to Windows 10**

by [Crosman, Penny](#)  
American Banker, 08/2015, Volume 1, Issue 118

...Byline: Penny Crosman Microsoft began rolling out its latest operating system, **Windows 10**, on Wednesday. Many banks skipped the last version of Microsoft's...

Journal Article: [Full Text Online](#)

6. **Microsoft's free Windows 10 giveaway: What that means**

New Orleans CityBusiness, 07/2015

... Microsoft's new **Windows 10** operating system debuts Wednesday, as the longtime leader in PC software hopes that giving the upgrade away for free will help...

Journal Article: [Full Text Online](#)

So differences between the trade journal, use of Scholar.Google.com, and Capella library in this specific query, “Windows 10” updates are as follows:

Area	Trade Journal	Scholar.Google	Capella library
Internal Citations	None Provided	Somewhat better	Yes, for all journals
Peer Review	None	Some	Yes, for peer reviewed
Online Links	Yes	Some	Some
Bibliographic Export	Not usually	Some	Usually - Refworks
Timeliness of Work	Very Current	Somewhat	Usually dated
Author Credentials	Self-stated	Somewhat	Usually institutionally credentialed
List of Referenced Materials	Rare	Some case	Most always
Use for Dissertation	Limited	May have some validity	Yes
Overall Credibility of Text	Personal Opinion	Somewhat reliable	Very if peer reviewed
Co-Authorship	Some	Some	Frequently multiple investigators
Journal Article	No	Some	As filtered
eBook	Maybe linked	In search results	As filtered
Trade Article	Yes	Frequent	As filtered
Advertising	Yes, frequently	Somewhat	No, unless filtered for

The three varieties of information go from Trade = Good; Scholar.Google = Better; Capella library = Best as far as suitability for capturing dissertation reference material. While the library of peer reviewed journal articles supplies the most credible data, it also represents the most dated material. Trade journals simply can provide much more recent writing since it is not bogged down by the time of publication acceptance and peer review. If one wants

*fresh kill data* turn to the trades. If one is looking for the most credibly reviewed data, turn to the Capella (or other university) library.

### **Difference in Writing Style**

The Trade Journal comes across as much more conversational and similar to the way one would expect from a magazine or newspaper. While it may contain useful academic information, it is not *academic* in nature. A sample would be something like a trade journal saying “Windows 10 is here to stay!” whereas the peer reviewed journal would express “Longevity of Windows 10 is supported by research of user acceptance of past Windows products (Wilson & Smith, 2016) as approximately 4 years.” Both expressing similar meanings, but the journal adds the credibility of others’ research and aren’t just stating it outright.

### **Level of Analysis**

While the Trade Journal presents the author’s opinion, along with reference links to his own earlier works with some links top Microsoft TechNet articles, still, it is not much more than opinion and hearsay. A journal review of the topic would bring in multiple references from other researchers to support the statements. One person stating something (even if they are correct) does not compare to several educated researchers making the same observation after several hours of in-depth study.

### **Differences in Trade versus Academic Publications**

Trade Journals and Academic Publications are extremely different animals from a list of disparate sources and with completely different levels of intent. While academic publications purport there are those who claim that the top peer reviewed publications can and do contain very bad articles (Starbuck, 2005). So one cannot be dependent only on the ranking or past quality of a journal, but at the same time, one shouldn’t just completely dismiss the data

from a trade or another magazine. One has to be open to all sources and then comprise supporting material from other sources. Colorado State University publishes a useful table that demonstrates some of the major differences:

Colorado State University > Libraries > Help > How To Do Library Research > Popular vs Trade vs Scholarly

## Popular Magazines vs. Trade Magazines vs. Scholarly Journals

The following is a list of **General Criteria** that can be used to distinguish between popular magazines, trade magazines, and scholarly journals. Some journals do not meet *all* the criteria in one category. For example, *Scientific American*, which has glossy pages and color pictures, contains both scholarly articles as well as those geared to a more general audience. **Accountability** and **content of the specific article** are the key criteria used to determine if an article is scholarly. See [Evaluation Clues for Articles Taken from the Web](#) for cases when you do not have an entire issue to examine.

CRITERIA	POPULAR MAGAZINES	TRADE MAGAZINES	SCHOLARLY JOURNALS
<b>Appearance</b> 	eye-catching cover glossy paper  pictures and illustrations in color  each issue starts with page 1	cover depicts industrial setting  glossy paper  pictures and illustrations in color  each issue starts with page 1	plain cover plain paper  black/white graphics and illustrations  pages consecutive throughout each volume
<b>Audience</b> see <a href="#">Ulrich's</a>	nonprofessionals	members of a specific business, industry or organization	researchers and professionals
<b>Content</b>	personalities, news, and general interest articles articles written by staff, may be unsigned	industry trends, new products or techniques, and organizational news articles written by staff or contributing authors	research projects, methodology, and theory articles written by contributing authors
<b>Accountability</b>	editorial review no bibliographies	editorial review may have short bibliographies	peer review/refereed* has bibliographies
<b>Advertisements</b>	heavy	moderate all or most are trade related	few or none
<b>Examples</b>	<i>Gourmet</i> <i>New York</i> <i>Psychology Today</i> <a href="#">Time</a> 	<i>Chilton's Food Engineering</i> <i>Public Management</i> <i>APA Monitor</i> <a href="#">Advertising Age</a> 	<i>Journal of Food Science</i> <i>Urban Studies</i> <i>Journal of Applied Psychology</i> <a href="#">Journal of Extension</a> 

(Colorado State University, 2016)

### **Articles Impact Practitioner Knowledge in Information Technology**

Trade Journals, mostly because their leadership in timeliness, can provide the practitioner with IT knowledge possibly not available elsewhere yet. If one thinks about it, suppose a major flaw in a system environment is found by a customer and reported to XYZ Data Company. XYZ put its internal support people on the job and they immediately start searching the problem. They will reach out to other customers with similar systems and environments and start evaluating. Once they understand the problem and implement a fix, or patch, the customers all update their systems and work goes on. The XYZ company will either internally or externally publish the case study and industry trades will be the first to learn XYZ had the problem. Academia will not yet even be aware.

A trade journal or other web publication picks up on the news and publishes about it. By this time, academia is just starting to recognize the issue and possibly a researcher has a huge interest in this area of concern. He/she begins researching and looking through the literature to find other similar situations over the years. When a few similar items come up, the researcher begins to really evaluate and starts doing a study. Meanwhile, customers have been working with the updates and patch and life goes on. After some months, the researcher completes his/her study and determines some really strong data that needs to be shared. Working with several journals the work is submitted and a journal agrees to publish. Best case, maybe three months have passed from the initial discovery (maybe two months since trade journal reported) and the research is reported. In terms of IT production systems, this is horribly slow and information from the company and trade journals has proven to be much more timely and relevant. However, the researcher's study, stands for an ongoing explanation for similar issues

in the industry. If a similar problem occurs, the academic world may best serve the needs of the customer.

### **Three Uses of Academic Work to Support Practitioners Areas of Expertise**

- 1) **Longitudinally** – Many trade journals and other vendor supported publications have neither the resources or focus to study specific IT events over a period of time. This is best done from a researcher perspective writing for a journal. Trades tend to deal with commercial and profit issues where researchers are generally in pursuit of the knowledge for their profit.
- 2) **Social situations** – Many IT issues are result of the social setup of those working or maintaining specific IT systems. Academic researchers are experts in discovering, monitoring, and reporting on social behaviors and actions. If there are any social related issues with an IT system, turning to academia is probably a great solution.
- 3) **Case Histories** – Some practitioner IT issues are not new. Other organizations have and are having experiences similar to the one being examined. Trade journals, by being so current and future oriented are frequently blinded to recent history which may be the bread and butter for the academic researcher. Sometimes, even technology, slow and steady will still win the race.

There is a long history of conflict between practitioners and academia in several fields. Information Technology is no different except since it moves at breakneck speed it may sometimes even be more susceptible. It is no surprise that most universities and

even technical schools run several months or years behind technology. While the world is enjoying the fruits of the latest data communications protocols, academicians are just now starting to study them. Technology will *always* be ahead of academia – universities, colleges, technical schools, *all* are just way too big to respond to the speed of technology. There are just too many people who have to change too many things for a new technology.

Yet there are those who work to understand the practitioner / academic tensions in their relationships and look more to partner than to find the differences (Bartunek & Rynes, 2014). By using and exploiting these differences – acknowledging and working together progress can be made. Huge numbers of practitioners in various fields have cited the worthwhileness of this thinking (Bartunek & Rynes, 2014). This is done through a foundation of research that builds on the issues without just trying to resolve.

### **Ways a Practitioner can stay Grounded in Theory and Current in Practice**

Through the use of Social Networking Sites(SNS), literature review of specific topics can be gathered. This is being done on a regular basis (Yin & Yau, et. al, 2015). By collaborating through these sites, there is a wealth of academic knowledge to be obtained. Using the same framework, specific areas like a router protocol can be regularly discussed and commented on. External and internal resources alike can share in a social network setting information to support specific efforts. Many IT workers and academics share these sites and hook up regularly for discussions. The point is, one can be more current than being in regular, active social discussions with individuals utilizing same technologies.

With the Web today, there is a process of learning called LBS, “Learning by Searching.” Through these individuals can acquire a large amount of data and information on a

particular area (Yin & Yau, et. al, 2015). By searching your specific area of expertise you have an opportunity to learn from like-minded individuals and contribute to the knowledge, all of which will keep you current in your field.

Use of Scholar.Google.Com can lead you to more professional journal information. If one possesses a university library account, even more scholarly and peer reviewed information can be obtained. If member of a social network on a specific area of interest, again even more information will be obtained. It is important to keep an open mind and utilize whatever resources you need to capture the data you need.

### **Currency in Emerging Trends in IT while Maintaining Academic Perspectives**

While for researchers, scholarly and peer reviewed materials are the gold standard for credible information (Starbuck, 2005) as stated earlier this same gold standard in IT areas quickly becomes dated. Technology just moves too quickly. So in order to maintain and keep current with technology, along with researching scholarly materials regularly, the academic must also keep current on a variety of other more *soft* publications: *Wall Street Journal*, *Washington Post*, *Computerworld*, *Infoworld*, *Wikipedia*, and a variety of vendor sites information like Microsoft's TechNet, Cisco Security Connections, HP Solve Quarterly E-Newsletter, and so on. Lastly, also be sure to include those SNS areas of interest (Yin & Yau, et. al, 2015).

### **Delays in Scholarly Publication Process**

Only books are slower to publish than many scholarly papers. In Information Technology this slowness can be a real killer. For instance, if a researcher in forestry finds a new lichen, maybe it has been around for millions of years, a several month or even years delays do not matter much – the information will be valuable today or years from now. However, in the

field of information technology, use of a particular interface may old school before it even hits a publication. Yin and Yau have a table which shows some of the comparative speeds:

Table 1: Comparison of published literature

	Latest progress	Detailed Data	Publish speed
<b>Books</b>	×	×	Slow
<b>Journals</b>	Δ	○	Fast
<b>Proceedings</b>	○	×	Very fast
<b>Sci-Tech Report</b>	○	○	Very fast

(2015).

As can be seen, books are by far the slowest. With all the approvals, reviews, acceptance and finally publishing other platforms of publication are considered much faster. In today's world of electronic media, books are on the way out as a media. Yes, some folks still like to hold the pages in their hands but with the improvements of readers, hard bound books will soon become the exceptions. Text books even more – especially technology textbooks. In our readings for this unit, Roberts talked of many dated technologies: “Several types are available, such as Windows Powered Pocket PC and Palm OS” (Roberts, 2010). Even though the publication is only six years' old, the writing is probably at least seven or eight since it has been quite some time since those devices were on the market. (Roberts, 08/2010, p. 80)

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