

The Last Mile: Collaborative Research Opportunities In Data Management

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As a DAMA International Advisor and an associate professor of information systems at a Carnegie Research-I University, I am often asked about my approach to data management research. I have tried to implement a research agenda that complements the DAMA International mission:

to promote the understanding, development and practice of managing information and data as a key enterprise asset.¹

Both DAMA and the research community can benefit from negative unemployment rates associated with information technology (IT) careers.

Demand for educators with experience in data management has skyrocketed. As a result of market conditions, typical teaching loads are two classes each semester. This reduced teaching load gives us time we never had previously to focus on solving specific organizational data challenges.

This demand has driven IT salaries up. Professionals with substantive work experience are increasingly choosing to invest in formal IT education at all levels. At the VCU School of Business - where I am tenured - for the 1999-2000 academic year, IS majors comprised >50% of the undergraduates, and returning stu-

¹ <http://www.dama.org/damamore.htm>

dents outnumbered first-time IS students by 3/2. The average age of my students has increased markedly in the recent years. Students often arrive in my classrooms possessing several years of job experience. At both graduate and undergraduate levels, these students are able to contribute to lectures and discussions from a wealth of varied experiences - bringing a more mature understanding of organizational functionality requirements to our classrooms. Increased experience and motivation levels permit me to teach increasingly challenging topics in class (for example, integrated process and systems engineering).

Returning (and new) students observe the increased value placed by organizations on graduates with experience, often inquiring about opportunities to complement their education with "real life" experiences valued by prospective employers. My university has responded by offering students the opportunity to spend from one to three classes working directly with outside organizations during the course of their education. Students may work on projects ranging from individualized study in areas outside the standard curriculum to master's theses and doctoral dissertations where students focus on specific topics for up to two years. Other universities offer similar opportunities.

Organizations have been quick to take advantage of these dedicated students, typically bidding up the price of qualified students to the \$15-30/hour range (but in some cases to \$50+/hour). Over the past decade, I have personally worked with more than 25 public and private organizations that have sponsored student research focused on understanding, developing and practicing information and data management as a key enterprise asset.

Key to the success of these collaborations has been our collective abilities to focus on what I will call the "last mile" in information and data management. In the telecommunication industry, the "last mile" is a phrase used to describe technology used to deliver signals from the broadband telecommunications backbone installed throughout the world to individual homes and businesses. Applied to data management research, I use the phrase to refer to getting others to use data management products—the end result of data management efforts. After all, a

data model isn't much good unless someone uses it. The "last mile" appears to be a good place to measure the value added by data management practices.

It has been difficult to demonstrate many data management practices as providing direct support for organizations and, subsequently, that data management investments yield good returns. However, inexpensive student research projects can easily contribute quantifiable time and money savings.

For one ERP project¹ a student team developed a parser that enabled the association of individual batch programs with specific data structures. The resulting metadata was made accessible to a \$200/hour consultant whose task was to determine which batch programs required modification. The consultant was quite pleased to replace the manual, error-prone inspection process with a portal-based browsing tool that delivered exact, batch-program-to-data-structure-mappings. Savings of the consultant's manual search time more than paid for the student time required to reverse engineer the ERP metadata. Well-articulated savings satisfied the State auditors who closely watched the implementation.

Eventually, the "last" mile be replaced as a topic of interest to telecommunications researchers and, similarly, data management professionals will likely find other research topics fruitful. However for the near term, focusing research efforts on data management's "last mile" can be easily cost justified. By concentrating our collective efforts on well-crafted and articulated student research projects, we can help data managers better articulate the potential return-on-investment available from modern data management practices. This will increase the perceived value of data management practices and the attractiveness of utilizing more well-educated, experienced students to perform research projects.

¹ *Reverse Engineering New Systems for Smooth Implementation*, IEEE Software, March/April 1999 16(2):36-43

<http://www.isy.vcu.edu/~pai ken/publications/papers/reverse.pdf>