

Editorial Preface

Finding Opportunities and Optimism: A Nuanced Look at the Growth of the IS Field in a Global Outsourcing Context

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Recent debates in the Information Systems field center on issues of stemming the tide of dwindling enrollments, and redesigning curriculum in light of the growing export of IS jobs. While dwindling enrollments might be fact, I would argue the export of jobs might be a convenient scapegoat. The problem is that media-hype coupled with poor student advisement creates a vicious cycle, attributing strong causality between the two that oversimplifies the phenomena and constrains positive pursuit of growth opportunities.

With the next US Presidential elections looming, the issue of outsourcing of American jobs is going to be echoed within the shrill confines of sound bites. Just like the previous election, where conflicting positions were exaggerated for impact, Republicans with their pro-trade, pro-business, and anti tax position will argue that it makes sense to buy cheaper goods and labor from abroad. Democrats on the other hand reflect their pro-jobs orientation will argue that outsourcing is exporting more jobs overseas. There is no doubt that this is another decisive issue for the forthcoming election. However, before we get into the heat of the election campaign where issues get polarized, it is useful to develop the middle ground or the gray area that lies between the dichotomizing of the issue. It is my contention this ground is vast, and needs to be reengaged before the rhetoric trumps substance.

A colleague of mine, Bill Ward, at Clemson recently did an analysis of labor markets and the purported shift of manufacturing jobs to China. In his analysis, he concludes that "100% of the US manufacturing job losses from the base point of 2000 were due to productivity growth...and that 100% of the (1.8 million) jobs that should have been added back by GDP growth in the US after 2000 were shifted to other sectors of the US economy than manufacturing....Correspondingly, China's manufacturing productivity growth, estimated at 60% between 1995 and 2002, should have cost China 37 million manufacturing jobs over that period, while China's even more rapid GDP growth should have added back 42 million jobs, for a net addition of 5 million manufacturing jobs. Yet China actually lost 17 million manufacturing jobs between 1995 and 2002. This suggests that competitive and structural factors were having a profound impact on China's economy between 1995 and 2002, much as competitive and structural factors were affecting manufacturing and overall employment in the

US¹." At the minimum, such analysis gives less credence to the hype that implies a 1-1 correspondence between US job losses and job gains in low labor sectors of the global economy.

Similar arguments are promulgated regarding IS jobs. Again, I believe that the simple conclusion that IS jobs are leaving Western economies for lower costs in China and India is far too naïve. For the IS employee that has lost her job, it is certainly real. But, to take these anecdotes and use them to build arguments to discourage students from going into the computing disciplines and to conclude that the computing fields are all going to thrive in low-labor economies requires a tremendous leap of faith. In fact, the US Department of Labor projections, place computer and mathematical sciences based occupations as the fastest growing occupation through 2014. Three of the 10 fastest growing occupations through 2014 are in networking, systems analysis and software, while systems analysis are prominent among the 20 high growth, high paying occupations that require a Bachelors degree². So, what gives? The answers are not in polar positions, but in the nuanced area between these positions that needs to be revitalized and engaged in order to arrive at positive avenues for growth of the field.

Global competition for software is fierce. In the 2007 ACM International Collegiate Programming Contest, the only U.S. University to finish in the top 10 was the Massachusetts Institute of Technology, which placed fourth. The top five winners were Warsaw University (Poland); Tsinghua University (China); St. Petersburg University of IT, Mechanics and Optics (Russia); MIT (United States); and Novosibirsk State University (Russia). The international competition, which is in its 31st year, took place during the week of March 12 in Tokyo, with 88 teams competing in the final round. Earlier rounds of the competition featured more than 6,000 teams representing 1,765 universities from 82 countries³.

Now, from here, we can build the following logic. If programming capabilities are at least comparable across countries and the costs are lower in low wage countries, then companies with a profit motive in higher wage countries will lower costs (hence increase profit) by sending work to these countries. This will lower employment here in programming (and consequently information intensive jobs) here. This logic, of course, represents the polar position. If we start chipping into the gray area, we can

¹ Ward, W.A., "Manufacturing Productivity and the Shifting US, China, and Global Job Scenes—1990 to 2005," Clemson University Center for International Trade Working Paper 052507, (August 4, 2005)

² Occupational Outlook Quarterly Online, <http://www.bls.gov/opub/ooq/2005/winter/art02.pdf>

³ Taft, D.K., "U.S. Developers, Students Face Ever-Increasing Global Competition, Baseline," March 16, 2007.
<http://www.baselinemag.com/article2/0,1540,2104819,00.asp?kc=CMCIOEMNL031907EP21>

discover the importance of nuanced thinking in reengaging the debate at a different level – leading to potential virtuous (growth) rather than vicious (declining) cycles for the field.

Zero Sum Game Assumption

Can we assume that jobs lost here due to low labor costs are equal to jobs gained in these low wage countries? The manufacturing analysis discussed above indicates that in that sector this is clearly not the case. Are there structural changes taking place in the US (say) that will shift IS-related jobs to different sectors of the economy that will have a profound implications for employment. For instance, some have argued that corporate computing is dying, and in the next few years we will see migration of IS workers to the utility sector that will maintain infrastructure. What will utility computing mean for employment? Will small companies that are under using computing technologies increase demand for infrastructural services from utility companies? Will consulting and higher value added computing services see significant increase in demand as piecing together technologies becomes an important skill? Will trend toward self-service for consumers increase demand for creating new types of applications and help structures? While we are already seeing the embryonic stages of a service oriented architecture, structural changes make the zero sum argument unlikely. Perhaps the pie is expanding? The grey areas raised by the questions above provide fertile ground for research, and at least exploring avenues for rejuvenation of the IS field.

Ease of Disaggregation Assumption

The polar position assumes that jobs can easily be detached and exported. While in an information intensive economy, there is greater ability to disaggregate and reaggregate value chains, it is not as seamless as purported. The grey area would look closely into the nature of jobs. IS jobs run the gamut from standardized and modular, to highly embedded, non standardized, and non-modular. If knowledge can be codified and packaged – then low labor can apply the knowledge cheaper. However, in an environment that rewards dynamic capabilities, flexibility, agility, it is not clear that knowledge can be easily codified. Context, embeddedness and tacit knowledge become more important. So, while turnkey programming might become commoditized, systems analysis might expand (as reflected by the US Dept. of Labor projections). So, the grey area questions, should focus on the growth of IS jobs that are sticky, embedded, and require systems thinking, integration of IT and business, problem solving and solution skills.

The IT and Information Assumption

The polar question often centers on hardware and software systems, with the implicit assumption that information is not distinct. And yet, in today's economy, it seems that management of information itself is a critical skill – grossly underemphasized in

our programs. The information coordination roles of graduates is a grey area opportunity for growth of the field – both in terms of novel research and in terms of training students to better manage disparate sources of information, analyze them and provide constructive solutions. By developing students with information filtering, integration, and analysis skills, we can fill a growing need in today's information intensive economy.

One Way Flow Assumption

The polar position assumes that jobs are always flowing one way – from high cost labor economies to low cost labor ones. I would argue that the global market is not as simple. There seems to be an emerging tiered system, where outsourcing to India (say) will lead to further sub-contracting to other economies. This is a reflection of the increasing prosperity of low labor markets. The natural offshoot of this is an increase in standard of living and real wages in low wage economies. These consumers (300 million strong in India alone) provide tremendous buying power that can move money back to enterprising and innovative global companies. Such a win-win scenario is rarely part of the debate during political season. Furthermore, if indeed there is reduction in cost due to outsourcing, then can increased resources be used to spawn new industries? The large cash balance in many US corporations could be used as a prelude to innovations, many of which will have IS parts, leading to increase in IS jobs.

Static Industry Assumption

An assumption often made is that the trend of outsourcing will inevitably continue until the standard of living in developed countries declines. However, the reality with respect to IS jobs is that the numbers remained very small in the early years as companies figured out that this was not a panacea to lowering IS costs. Now, companies are far more circumspect with regard to sourcing, as uncertainty is diminishing. Strategic sourcing requires more thought than purely offshoring for cost considerations only. In fact, there are some reports that outsourcing is not a money saver and both insourcing and outsourcing are on the rise⁴. Many companies are setting up “partnership” or “co-sourcing” arrangements that involve a program of mutual benefit, innovation and learning. These trends indicate again that the static picture is changing, and fostering partnerships that involve both high touch and commodity parts, requires *managerial skills* that are only going to increase in demand. Herein lies another growth opportunity for the field. It might need integration of IS skills with other skills (e.g., risk assessment, portfolio management), but if we don't ask the right questions – we're not even in the game to seek answers.

⁴ Alter, A., I.T. Outsourcing: Expect the Unexpected, March 7, 2007. <http://www.cioinsight.com/article2/0,1540,2104842,00.asp>

In conclusion, the message of the essay is simple. Let's not get polarized...even though the oncoming political season forces us to think in terms of sound bites and political rhetoric. There is a large grey area between these polar extremes. I, for one, am very optimistic that if we focus on the fertile questions within this grey area, we will be far more productive in coming up with solutions that spawn positive virtuous growth cycles that offer solutions to problems in the IS field, than if we coagulate around the polar extremes.

Varun Grover is the William S. Lee (Duke Energy) Distinguished Professor of IS at Clemson University. Prior to this, he was Business Partnership Foundation Fellow, Distinguished Researcher and Professor of IS at the University of South Carolina. Dr. Grover has published extensively in the information systems field, with over 150 publications in refereed journals. Five recent articles have ranked him 1st, 2nd, or 3rd in research productivity (among over 4000) researchers in the world in the top six Information Systems journals in the past decade. His current areas of interest are creating IS value in organizations and business process change. His work has appeared in journals such as *ISR*, *MISQ*, *JMIS*, *CACM*, *Decision Sciences*, *IEEE Transactions*, *California Management Review*, among others. Dr. Grover has co-edited three books on Business Process Change; the last one (with Lynne Markus) is forthcoming. He has received numerous awards for his research and teaching from USC, Clemson, the Decision Sciences Institute, the Association for Information Systems, Anbar, and PriceWaterhouse Coopers. Currently, Varun is the Senior Editor of the *MIS Quarterly*, *Journal of the Association of Information Systems*, and *Database: Advances in IS*; Associate or Advisory Editor of 9 other journals including the *JMIS*, *International Journal of Electronic Commerce*, *Journal of Business Process Management*.

Correction in Volume 10, Number 2:

In the article "E-Commerce in Serbia: Where Roads Cross Electrons Will Flow", the order of authors and their affiliations were partially incorrect. The correct order should be:

Bob Travica, University of Manitoba, Canada
Ejub Kajan, Higher Technical College of Vranje, Serbia
Borislav Josanov, Novi Sad Business School, Serbia
Marijana Vidas-Bubanja, Belgrade Business School, Serbia
Emilija Vuksanovic, University of Kragujevac, Serbia

We regret the error.

Editor in Chief

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