Career Opportunities in Information Science and Technology

The field of information technology is undergoing a core-deep transformation. It is evolving and ever-changing. Today’s information technology professionals are expected to be sharp, talented problem solvers. They are expected to be up-to-date with the very latest methods and technologies in the field and should maintain this behavior throughout their careers. While the field is transforming, it is also expanding. The Bureau of Labor Statistics is projecting an additional 1.1 million job openings in the fields of computer science and math between 2010 and 2020. (Torpey, 2013) But what does that mean for computer and information science degree majors? Typically-mentioned career possibilities include software engineer, computer programmer, et cetera. In this paper I will discuss some alternate career paths that are becoming increasingly plausible options for computer and information science professionals.

LOGISTICS

A recent informal poll was cast to inquire where current logistics professionals and firm managers believe the field of logistics is heading. Researchers found that in the years to come, employers will be looking for a “new breed” of logistics practitioners who will be better prepared to analyze data and become integral members of problem-solving teams. They see these logisticians taking on more managerial responsibilities within the firm and working their way to the top. (Career Opportunities, 1996) Doug Doust is the General Manager of Logistics for T. Eaton Co. Ltd. out of Toronto. He remarks that "We are now much more involved in all aspects of the company. I have given talks at our last couple of national conferences, which is a gathering of several hundred marketing, merchandising and sales people within the company. I am sure that 10 years ago, no one from logistics would have even been invited." This is proof positive that this career field is transforming into one that carters much more to the logistician’s business and managerial senses and
gives him more opportunities to grow whilst still utilizing a strong information science background.

As an overview, the researchers have determined this “new breed” of logistics professionals to:
analyze available data to maximize efficacy of transportation, distribution, and the supply chain
management system; develop advantages and competitiveness of the firm; increase the roll of
technology; and eliminate non-value added activities from processes.

LIBRARY SCIENCE AND KNOWLEDGE MANAGEMENT

A recent study of graduates found that 80% of library information science degree-holders
were working within libraries and that 21% of information science degree-holders were in the same
occupation. In what appears to be a growing career opportunity for information science majors, the
overall job satisfaction rates for those working in library information science are growing as well. Of
those polled, 45% strongly agreed that they were satisfied with their career. (Marshall, et al., 2009)

Developing out of library science is another form of information science called knowledge
management. It has been loosely defined as “referring to the capture, codification, and interpretation
of knowledge.” (Harper, 2013) The similarities and differences between KM and LIS were analyzed
in a study of 165 UK-based job advertisements. Researchers found that the advertisements seemed
to be looking for potential employees that were well-versed in Web 2.0 tools and design, database
management and creation, information architecture, and programming as well as team-oriented
management skills, leadership experience, and extroversion or the ability to communicate well with a
variety of professionals. Knowledge management is a growing field but in its early stages is
somewhat vague in description and standardization of tasks. Career titles range from the more
progressive, Chief Knowledge Officer, to the more roundabout variations of knowledge manager or
analyst. Advertised pay ranged from about $27,000 to $50,000 annually. Frequently referenced
themes in the advertisements were involving database creation and maintenance, web site design,
and social networking skills and distributive materials for both “knowledge creation and transfer.”
COMPUTER SECURITY

Recent outbreaks of computer system hacking that has affected both small- and large-sized firms has spurred the rapid growth of the computer security industry. To protect valuable and sensitive data from being infected or stolen, firms have begun hiring Internet Security Specialists at ever-increasing rates. These specialists are becoming responsible for monitoring and investigating suspicious activity. He must have enough experience in computer science and programming in order to “think like” a hacker in any form that may take as well as to respond appropriately. The necessary skill set includes but is not limited to: pattern-recognition, attentive and diligent nature, investigative attitude, and ability to confront possible threats. Data shows that Internet Security Specialists earn, on average, 20% more than their other information technology counterparts. Those working as highly experienced consultants can make within the range of $150 an hour or more. (Information Security Specialist, 2006) While this is clearly a very enticing path for computer science majors to look into, it is unlikely that this type of position would be available for an entry-level candidate – most individuals must gain 5 to 15 years of experience in relevant fields before entering into this profession. However, computer science majors can use this information to plan a career path that may lead them to an internet security specialist by entering relevant fields and/or industries that would find it necessary to have an internet security specialist in their employ.

OTHER HIRING FIELDS

Computer and information science professionals are no longer destined to funnel into programming or engineering careers. Multitudes of fields are beginning to take advantage of the knowledge and skills that these professionals can bring to their businesses and increasingly more so as information technology education delves deeper into its possibilities. For instance, one group of academia professionals is projecting that there will be a large spike in demand for IT professionals in the medical field in the coming years. As more and more institutions begin to transfer their
documents over to digital format, they predict that there will be an increase in the need for someone to organize and protect this data. They also propose that programmer and game designers could be of value to the medical industry in designing accurate and life-like training programs that could be used for teaching or testing certain medical practices and methods. (Lau, Katona, Rosen, & Koop, 2012)

Big Data is another expanding opportunity that is being utilized in various industries. The role of big data is to create, manage, analyze, visualize or conceptualize, and utilize large data sets. Peter Lee, Corporate Vice President of Microsoft Research Redmond, remarks that advancements in this field “…will improve scientific research and facilitate real-time decision-making. Increasing the ability to generate and interpret big data is already having an impact in diverse sectors, from retailing to healthcare.” (Lee, 2012) Computer and information science professionals, especially those that are math-orientated, are ideal for filling positions which require the use of Big Data and these fields are expected to increase exponentially in the future.

Journalism is another, somewhat surprising, field that is now taking advantage of the skill sets that computer science graduates possess. In order to better prepare students for the “digital media-oriented” direction that journalism is taking, the first dual major in journalism and computer science was introduced by Columbia University in 2010.

The Bureau of Labor Statistics has compiled a list of the fastest-growing occupations in the US. Among them are: computer software applications engineers, computer support specialists, network systems and data communications analysts, database administrators, computer systems analysts, and many more related fields. Forecasters are projecting increases in both the demand and pay for information technology professionals across the board as the economy begins to turn upward. (GoingGlobal, 2006)
Works Cited


