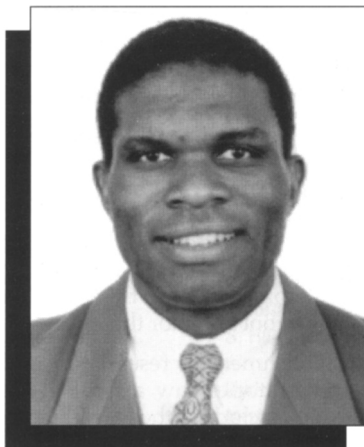


Materials Scientist Utilizes High-Tech Knowledge for Business Projects

Darius Sankey



At McKinsey & Company, Darius Sankey works on client consulting projects which involve devising new strategies for high-tech business units of large corporations.

Electronic commerce, the latest business paradigm, is enabled by technologies such as fiber optics, microelectronics, and object-oriented programming. The result of this paradigm is that technology is now considered a major driving force behind the changes in the competitive landscape of most businesses. This is exemplified by the prestigious strategic management consulting firm McKinsey & Company's initiation of a major recruiting effort to hire the best of the brightest PhD science and engineering graduates as new associates. The company realizes that if it is going to continue to provide value-added consulting services to the Fortune 500, it needs to have consultants with a strong foundation in new technologies. Most companies are starting to develop new strategies under extremely uncertain conditions. Much of this uncertainty involves technological roadmaps and the impact of new technologies on their markets. For example, in the case of the wireless business several new standards have emerged for digital cellular systems. Which one of these systems will become a worldwide dominant standard is unclear. Consultants with a background in electronics or communications systems will be better prepared to ask the right questions in order to inform a client what options need to be considered for the future.

A position for a newly minted PhD science and engineering graduate could initially be an advisor or an analyst in several private and public sectors of society. Within the private sector investment banks hire PhD graduates as either industry specialists or quantitative analysts. Public policy think tanks hire these graduates to address technology issues that impact the military or investment decisions by various government agencies. These types of positions include many that I have had in the last three years since receiving my PhD degree, which include a strategic planner at a corporate research laboratory, a policy analyst in a nonprofit think tank, and a new business development manager in a small software company.

At AT&T Bell Labs I worked with the senior management team on building processes to better evaluate how to measure the return on AT&T's investment in research and development. At the RAND, a nonprofit think tank, I conducted studies for the Air Force on information war-

fare scenarios in the 21st century and I began a human capital study on the production of PhD scientists and engineers in the United States. This study was extremely interesting since it outlined who is getting PhD degrees in the States and where they end up on an international scale. At McKinsey I am working on client consulting projects which involve devising new strategies for high tech business units of large corporations.

To embark on a career path of uncertainty and fortuitous circumstances, new PhD graduates must prepare for proactive, self-career management. This requires, along with strong analytic and quantitative skills, excellent communication skills including writing, lecturing, and the ability to simplify and explain complicated technical issues. In many cases one could be asked to do an analysis of a high-tech industry. This will require structuring or modeling the industry in such a way that critical technical issues are explained in the context of the economics of the industry. This may include what kind of relationships are required between

a supplier and a manufacturer and what are the design and process skills needed for the supplier and the manufacturer to work together in order to maximize their competitive positions in their respective markets. In addition, understanding a few of the basics in business administration would be useful such as finance, marketing, and general strategy. General business knowledge can be acquired through two or three courses in the business school or by reading a few books on microeconomics or corporate reengineering. A summer internship at a company such as McKinsey, BCG, Baine, Monitor, IBM, Oracle, or Lucent Technologies can also be a useful way to obtain experience and gain some contacts outside of the research world.

In less than one year from the completion of my PhD program I obtained a corporate strategic planning position which ultimately led to several other positions relating to technology planning and consulting. One might say I was lucky. Most of the jobs I acquired seem to be because I was in the right place at the right time. In reflecting on my career path, though, the most important skill I acquired while I was a graduate student, and have refined since, is to learn something new from any extended encounter with new people. In a recent situation I met a famous photographer on a flight from Los Angeles to Washington, DC and I told him about my work at AT&T. He realized that my work was directly related to the Internet business that his friend had started a year before. He told me that the CEO of Portland Software, and Internet start-up company, was building a management team and encouraged me to apply. The following week I traveled to Portland, Oregon, and one month later I had a new position as director of future strategies.

Developing the ability to sell oneself cannot be underestimated. A PhD graduate has to work twice as hard to convince employers outside of science or engineering that they have the skills to do almost any job in business. However, convincing a senior executive or manager to hire them requires a strong will and belief that they can do the job. This fundamental belief is what ultimately propelled me rapidly through several key management positions. □

Career Clips explores the range of career possibilities in, or related to, materials science.