The IT Skills Shortage: Where will We Find Mainframe Talent?

By Joe Clabby, President of Clabby Analytics

As an information technology (IT) research analyst, I receive regular invites to industry events (because the event sponsors hope that I will share their stories with a broader audience). But my motivation for attending these events is to conduct information technology research. I have no qualms about approaching IT professionals whom I don't know (including teachers, students, IT practitioners, IT executives and vendors) and asking their opinions of various technologies, products and industry trends. And a high percentage of these individuals are usually willing to share their opinions (as long as I don't mention their organizations in my research).

One of my favorite events to attend is the SHARE user group meeting held twice a year at various locations in the United States. And the reason I enjoy this meeting so much is that a large number of seasoned IT professionals attend and speak at this event. These people are easy to approach, very knowledgeable and very candid.

Recently, the SHARE executive community asked me if I would be willing to do a little digging into what is "top-of-mind" amongst regular SHARE attendees when it comes to IT professional skills development. I responded enthusiastically that I would love to do this — primarily because I've written several reports on the IT skills situation (where business leaders worldwide constantly lament that there are too few skilled IT individuals to meet demand). A good summary of the issue can be found here in a report by Emily Stewart of the Australian Broadcast System broadcast on 9/26/2011: http://linkd.in/mWHxjS.

The following is my assessment of IT skills in 2011 — based on talking to business and government IT managers, teachers, students and vendors in the United States.

IT in 2011: Analyzing the Skills Shortage and Collaborating to Solve It

The argument goes something like this….with the aging of the US population, so goes the aging of the IT workforce. As seasoned IT professionals reach retirement age and leave the workforce, they are being replaced by recent graduates who want to focus on new "slick" technologies rather than learn about traditional IT architectures – "old" technologies like the mainframe. So, as these youngsters look for work that will build their resume and impress their friends, finding mainframe talent is becoming increasingly difficult for IT hiring managers. True? Yes and no. It is true that young IT professionals gravitate toward these new products and architectures. But at the same time, we have a population of college graduates who are facing one of the worst economic climates in recent memory – an economic climate that isn't expected to improve for quite some time. So the reality is that they NEED JOBS! And anticipating the skills shortage in mainframe technologies, IT professors, IT business executives and IT vendors have been working together to mitigate the problem. They are collaborating to ensure that there will be

skilled talent to fill mainframe jobs – that the education and training provided in colleges and universities will match up with hiring requirements. Let's look at a couple examples:

SHARE

According to the SHARE Web site, "SHARE Inc. is an independent association providing enterprise technology professionals with continuous education and training, valuable professional networking and effective industry influence." The members include many Fortune 500 companies, universities and colleges, government organizations and consultants. In partnership with IBM and IBM partners, one of SHARE's primary goals is to nurture a new generation of IT professionals on the mainframe and supporting technologies, especially knowing that these technologies are not typically as widely taught in today's schools. The zNextGen Project sponsored by SHARE, is a global user community specifically designed for prospective System z professionals with a wealth of available resources to support the development of system z IT skills. More information is available at http://bit.ly/boKFrt.

In August 2011, SHARE sponsored its bi-annual event in Orlando, Florida which was attended by more than 1,100 IT professionals. In a recent article, "Mainframe Technology in 2011 and Beyond; Who is Going to Run These Mainframes?", Dr. Cameron Seay, Assistant Professor at North Carolina A&T State University, had this comment about the event, "… I attended SHARE in Orlando along with two of my students. They each came away with a stack of cards about four inches thick from companies wanting to hire them. (As crazy as it sounds; if I had three times as many students I could place each and every one of them, and that's just the fact of the matter.)" Additional insights can be found in the complete article: http://bit.ly/q7WfqR.

IBM Academic Initiative System z program

The IBM Academic Initiative System z program "seeks to ensure that the next generation of mainframe experts will be available to help more companies and organizations leverage the superior security, availability, scalability, and efficiency of the mainframe." IBM partners with educators, students and customers by providing:

1) Access to mainframes, courseware and training to colleges and universities

2) Scholarships, academic contests and a jobs/internship database for students

3) A forum for businesses to establish relationships with colleges and universities that offer mainframe-based curriculums and a résumé database of students with mainframe skills

Details available at
http://www.ibm.com/developerworks/university/academicinitiative/index.html

IT in 2011: Feedback from IT Managers, Students and Educators

Enterprise IT

Enterprise IT managers are telling me is that they're doing a lot of "growing from the inside" rather than hiring from the outside. They constantly point to the need to "do more with less" (the new mantra of the 2010s in business) — and say that they are finding ways to live up to this mantra. These IT managers are consolidating and virtualizing their environments (which makes management a little bit easier because few distributed systems and associated software needs to be managed). And they also claim to be using many of the advanced, automated management tools that are available on the market (these tools simplify and automated systems and software management — helping to reduce the cost for human labor). And when IT managers are hiring, they are looking for younger talent— "gray-haired" IT professionals are perceived as being too expensive, and the goal is to replace these retirees with recent college graduates.

A February 2011 study conducted by SHARE entitled, "CLOSING THE IT SKILLS GAP: 2011 SHARE Survey for Guiding University & College IT Agendas", found that half of the companies surveyed hire new IT employees straight out of school, with relatively little actual work experience. The study also indicates a strong demand for mainframe skills with the finding, "In terms of platform-specific skills, companies seek applicants skilled in running two types of environments — database administration and mainframe administration. Specific mainframe administration skill areas also are in demand by a majority, or close to a majority, of companies in the survey — 55% seek mainframe administrative skills, and half are in need of skills involving JCL, or Job Control Language."

Students

Students (or more precisely recent graduates who now work in the field of IT) have pointed out how they have constantly built their skills in order to command greater salaries and ensure employment. Some of these students manage more advanced computing environments such as scale-up Unix servers and/or mainframes — while others continue to work on x86 servers (which is what they were trained to use in college.) Unix/mainframe-skilled individuals seem to have not only improved their scale-up systems experience, but they've also grown from a business acumen perspective by working on advanced run-the-enterprise projects that involve custom application design and business process flows. Demand for mainframe talent in combination with a tough job market will cause students to rethink their course choices, taking advantage of programs and courses offered through the IBM Academic Initiative (my 18 year-old son is one such example — he is pursuing a mainframe program at Marist College — more information is available at http://www.clabbyanalytics.com/uploads/Billy_Mainframe_Report.pdf).

Educators

Some of the professors that I've talked to (I regularly attend the annual Enterprise Computing Conference at Marist College) tell me that they now are working more closely than ever with local business leaders to build the kind of skills that those leaders require. This is a bit of a change in that university professors usually have taken an approach that builds computer generalists — and then those generalists build specialist skills once they are hired by a business. Based on the success of specific programs taught at the college level, businesses and universities

are launching programs to encourage more high schools to offer computer science courses as part of the curriculum — so that specialization can begin at the college level. IBM's Academic Initiative extends resources to high schools including courses and roadmaps for teachers, as well as contests and games for students. IBM's Web site has additional details: http://www.ibm.com/developerworks/university/highschool/

This is in an effort to reverse a trend that suggests that fewer students are taking courses at a high school level (in 2009 the Advanced Placement board canceled one of their Computer Science offerings due to low numbers).

By the same token, business leaders are looking for IT professionals that possess not only IT skills but business acumen as well, so many schools and universities are offering IT major programs that require classes in economics, accounting and marketing. In fact, the findings of the February 2011 SHARE study mentioned above indicate that, "about one-third of companies are seeking professionals and managers that can bridge the divides between IT departments and business leaders. Project management, analytics/business intelligence, and enterprise architecture skills are in demand by more than half of the companies surveyed."

Summary Observations

Much has been written about the IT skills shortage (particularly with respect to mainframe talent) and most of it has a tone of "gloom and doom". In my opinion, collaborative efforts between businesses, universities, vendors (like IBM and its Academic Initiative) and independent industry organizations (like SHARE) will forestall any crisis based on a talent shortfall. Continued feedback from businesses will ensure that Universities are teaching the right courses and that students are learning the skills necessary to compete for available jobs. By extending programs to the high school level, skills will be developed sooner and our college graduates will be more specialized. And in the end — in a tough economy — college students will pursue the skills that will get the jobs.