CLABBY ANALYTICS

Advisory

Number 50,000 + 1: The Making of a Mainframe Manager

Introduction

Gartner, the pre-eminent information technology (IT) research firm, is right. There is a "generational gap" when it comes to mainframe computing. I see this gap when I attend SHARE conferences (an IBM mainframe user's group). I see it when I visit IBM customers. And I constantly hear about it from mainframe competitors (particularly Hewlett-Packard).

> ***The gap that Gartner refers to is this: many mainframe computing managers and administrators are in their late 50s —the next generation of mainframe managers starts in their mid-30s and descends from there. Mainframe managers in their late 30s to mid-50s are few and far between.***

On the other hand, Gartner is wrong. In a research note published in March of 2007, the company suggested that, due to the aging of the current generation of IBM System z (mainframe) managers, mainframe customers might someday find themselves short of the skilled labor that they need to manage their System z solutions over the long term. Gartner then went on to suggest that organizations that use mainframes might want to consider moving to other, "more modern" platforms. I consider this advice pure "balderdash." Gartner's opinion does not seem to take into account that this generational gap is being aggressively closed.

> ***Since 2005, IBM has worked with educators to almost triple the number of educational institutions, including universities and state colleges, offering mainframe skills training (from 213 to 640) — and has increased the mainframe student count five-fold from around 10,000 in 2005 to 50,000 (+1) today.***

Gartner also seems to have missed the news that mainframes are getting easier to use thanks to the arrival of graphical user interface-based tools (that appeal to the younger generation) and to rapidly improving mainframe service management software (this leads to a requirement for fewer mainframe managers as software takes over functions once performed manually).

In short, the alleged mainframe skills gap that Gartner alludes to is being filled. And, for our part, *Clabby Analytics* is helping to fill this gap by contributing our only son (Billy) to the cause. Billy Clabby, a 17 year-old high school student (see "Image 1", next page), has shown an interest in managing mainframe computing environments as a possible career — and we're doing our utmost to encourage that interest.

Image 1: Billy Clabby — Future Mainframe Manager (Number 50,001)

A Whirlwind Week

To explore a mainframe career path, I arranged for Billy to visit:

- Two mainframe customers where Billy could see systems in action and talk to mainframe managers about what they do for a living (one of these customers has invited Billy back for a "career day," where Billy can sit and observe the day-to-day work of a mainframe manager and database administrator).
- Syracuse University, where Billy was able to meet with professors who teach the
- school's mainframe curriculum — as well as with three students involved in the university's information systems program; and,

- Two mainframe programmers — in order for Billy to understand what some students do after they graduate with computer skills.

We also visited Syracuse's Green Data Center (described later in this article).

Mainframe Customers

At these sites, Billy was given a tour of the customers' data centers — and was able to talk with mainframe managers.

- When touring the data centers, both customers talked about how a mainframe works and how a data center is organized. One produced a block diagram that showed how his mainframe was "partitioned" (logically structured) to run two environments — a traditional z/OS operating environment and a newer z/VM Linux on the mainframe environment. By graphically showing Billy how this mainframe environment operated, Billy learned he could study traditional mainframe operations and/or study Java and Linux on the mainframe. Both customers spent time discussing their storage, networking, and multi-platform server environments — showing Billy how mainframes worked in each environment.
- Both customers suggested that if Billy were to work on their mainframes, he would initially start by downloading software, unpacking it, and then loading it and testing it on a "test partition" on their mainframes. He would be given responsibility for software revision updates and patches. "What I learned from these visits was how mainframes operate — and what mainframe managers do," said Billy after the conclusion of the second visit. They are mostly responsible for monitoring and controlling the mainframe — and for keeping its software up-to-date." He also observed that mainframe managers spend time tuning their systems to optimize performance — and to make way for new application workloads.

The Syracuse University Trip

At Syracuse University, Billy and I:

- Visited Sidearm Sports — an actual Web-hosting business operating within the Syracuse iSchool (the School for Information Studies).
- Took a tour of the campus and of the "iSchool."
- Met with Dave Dischiave, director, Master of Science in Information Management, and assistant professor in the iSchool.
- Had lunch with three current iSchool students; and
- Visited the school's "green data center."

The iSchool fascinated Billy. SidearmSports is operated by Professor of Practice Jeffrey Rubin on the same premises as the iSchool. This lets students apply what they are learning to a real world use case — running a Web-hosting business that not only serves users who need Web presence but also focuses heavily on social and streaming media. Students also explore other, non-technical aspects of the business, such as sales and marketing. Billy immediately recognized that he may be able to work at Sidearm Sports while studying at

Syracuse — giving him a source of revenue to help defray his educational and recreational costs.

The iSchool tour took us to the classroom environments (lecture halls, labs, break-out facilities) where we met with a social networking professor and then a graduate student who was teaching a database fundamentals course. This particular student was preparing to leave at the end of the semester — on his way to join Microsoft in a pre-sales role.

The meeting with Assistant Professor Dave Dischiave was one of the highlights of the trip. Dischiave was directly responsible for obtaining an IBM z10 as a gift from IBM — and is in the process of populating that mainframe with applications and learning tools. Dischiave teaches a balanced approach to computing — where all platforms have roles suited to their specific hardware and systems design — but he is also directly in charge of Syracuse's mainframe deployment. Billy and Dischiave discussed how much access he could have to the school's mainframe — and Billy was very encouraged to learn that he can have all the time he needs to master the administration and management of both z/OS and z/VM Linux environments.

Arranging a lunch with three iSchool students was brilliant on behalf of Syracuse because it allowed Billy to have "what-is-it-really-like-here" conversations. Billy explored both campus life and iSchool related topics, and he found out that each of these highly motivated students were involved in truly impressive internships. "Dad," said Billy, "if I go here, I can get business experience off-campus during the summer. And these guys are also taking business management courses — so they can move into management positions, too." Billy was very impressed with the candidness, maturity and quality of the Syracuse students he met.

The green data center visit was more for my benefit. I have written in the past about how data centers can be better managed — especially from an energy consumption point of view (see: http://www.clabbyanalytics.com/uploads/The_Green_CEO_Advisory_--_final.pdf for an example). I must say that Syracuse's green data center is one of the most impressive data center operations I have ever seen. The first thing I look for in a data center is water-cooling — and Syracuse's center was based almost completely on using water to dissipate heat created by systems. The second thing I look for is heat re-use — and Syracuse (a veeerrry cold place during the winter) reuses the heat it generates to help warm a nearby administrative building. The third thing I look at is the source of energy (and Syracuse uses natural gas — the least polluting fossil fuel — to power its plant).
I would like to see Syracuse make more use of solar and wind-generated power — and build a "cold battery" (such as the one I wrote about in nearby Bromont, Canada (Google: Clabby + IBM's Cold Battery) — but overall I would give Syracuse an "A" grade for what it has accomplished in driving down energy costs in a data center (following Syracuse's green recommendations — a conventional data center could cut its energy use by 50%!). Incidentally, Syracuse provides a consulting service for those interested in lowering data center energy costs.

A Visit with CA Mainframe Programmers

The final leg of this trip took us near CA's Islandia, Long Island, New York headquarters where we met with two members of CA's development organization, Will Gomez and Gaurav Singhal, who shared their perspectives with us on what it was like to move from college into the real-world of mainframe programming. Will, a graduate of Lemoyne College in Syracuse (ironically) gained mainframe experience while working on an internship — and then parlayed that experience into mainframe programming at CA. Gaurav, a graduate of SUNY Stonybrook had no mainframe training in college — but studies computer science and clearly understood how all the pieces fit together in the mainframe world. Most noteworthy in this interview is that CA hired Gomez and Singhal and sent them to a two-month "boot camp" in Texas, where they learned all about mainframe terminology and operations — becoming not only conversant but also capable.

As a result of this training, the pair hit the ground running and are actively involved in writing programs that simplify mainframe management, such as the MSM program that *Clabby Analytics* describes in this report: http://www.clabbyanalytics.com/uploads/IrishLifeCaseStudyFinalFinalFinal.pdf.

Summary Observations

The visits described above all show just how the mainframe generational-gap problem is being addressed. Syracuse University is one of 639 other educational institutions helping to drive mainframe training. And many companies, such as CA, offer training programs to quickly grow their employees' mainframe skills base.

> ***Given the major influx in mainframe students, the growth of mainframe skilled professionals, and the growth in internal mainframe skills, we believe Gartner should issue a corrective advisory telling people that the widening generational gap they identified is actually being closed.***

As for Billy, he is more charged than ever to get into mainframe management. Personalitywise, Billy is a competitor and a problem solver. He loves contact sports — and loves winning both on the field and online. When he enters computer-game-mode, either individually, with a pack of his friends, or with people he meets around the world on the Internet, he scopes out the game, finds the weaknesses, and works tirelessly and unrelentingly to solve the problems that game presents — ultimately achieving victory. From our perspective, mainframe management will be like gaming for Billy: something he will enjoy, be good at, and ultimately master.

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