

Office of Technology Services Proposal: Mainframe University

INTRODUCTION:

OTech's Mainframe data center is one of the most sophisticated and complex in the state and is essentially the IT backbone of many critical departments. Without talented staff to ensure the stability and reliability of the Mainframe environment and the proper resolution of outages, the implications to both the department and the State are significant. As of September 2010, 38% of rank and file staff within Engineering's nine Mainframe units are age 55 or older; 67% of rank and file staff within Engineering's nine Mainframe units are age 50 or older. Many of these staff already have 20 years or more of state service or are quickly approaching this milestone. Of the first line supervisors overseeing Mainframe functions, 56% are age 50 or older with 20 years of state service.

These are alarming statistics for several reasons. First, supervisors have reported that, on average, it takes at least five years for staff to become an expert in OTech's Mainframe platform (for some of the more complex units such as Operating Systems Support, the timeframe is reported to be closer to ten years). Second, the Mainframe legacy technologies used within OTech's data center are no longer taught at most schools, sending a clear message to the next generation of workers that the technology is considered outdated if not obsolete. In addition, specialized Mainframe training offered by vendors can cost up to \$50,000 per employee and is not tailored to address issues related to OTech's Mainframe.

At the request of executive management, OTech's Workforce Planning Consultant and Training Officer recently conducted interviews with the Engineering Division's nine Mainframe supervisors, four Section Managers, and two Branch Managers. The goal was to obtain their feedback regarding the division's specific issues related to workforce and succession planning and to determine how best to implement a program that would create valuable resources. Supervisors and managers identified various struggles with recruitment, training, and at times the retention of valued staff. Below are some specific concerns reported by first line supervisors:

- All managers expressed serious concern regarding the recent retirements of key staff or the impending retirements of some of their most critical staff within the next 1-5 years;
- Most have experienced significant challenges with recruitment, noting that even staff transferring from the Franchise Tax Board, Employment Development Department, and Department of Motor Vehicles are not always prepared for the numerous challenges inherent to our multiple platforms;
- Many acknowledged there is some form of knowledge siloing within their units; reasons for this included their staffs' reluctance to document processes and procedures, the desire to be the unit's "hero" when complicated problems arise, or difficulties in simply finding the time to correct the problem because of the workload; and
- All managers supported the idea of some form of Mainframe University and stated that they could find a way to make a resource available within their unit to provide mentoring and training.

Below are some highlights of interest from interviews with Section and Branch Managers:

- All managers agreed that the recruitment of qualified staff had been a significant challenge for the division;

- All supported the concept of some kind of training program to retain and grow talented staff;
- Many openly agreed that the issue of good knowledge transfer and management is at times lacking within the division; and
- All managers indicated that while some technology leaders have suggested that the Mainframe platform is in the process of being phased out entirely, this is not a realistic assessment nor a viable option for our customers.

With a wave of upcoming retirements and critical knowledge loss on the horizon, it is clear that OTech must address the departmental impact if significant knowledge transfer, mentoring, and training does not take place with new and lower level staff within the Mainframe units. The following proposal outlines a concept which has attempted to incorporate the best and most viable ideas presented by the supervisors and managers interviewed.

PROPOSED CONCEPT AND SCOPE:

The Mainframe University concept, as proposed, would be an in-house developed and supported recruitment and training program for OTech. Its function would be to establish a future workforce for Mainframe programming, applications, and support areas within the data center. The development and support of this program would help address OTech's specific workforce succession issues through the use of focused course curriculum, a clear Mentoring/Training Plan to ensure accountability, and significant knowledge transfer provided by Retired Annuitants and senior staff.

BUSINESS PLAN:

Position Funding:

Current vacancies identified by executive management as being non-critical within the Engineering Division or OTech would ideally be used to fund the program. The Workforce Planning Consultant strongly recommends using a small cohort of 5-6 positions for the initial pilot to better gauge the program's effectiveness, to more easily make adjustments if needed, to provide students with more one-on-one attention and support, and to minimize the impact on current vacancies.

Recruitment and Selection Processes:

Mainframe Units would collectively run an open recruitment for candidates at the Associate SSS or SSS I (technical) levels with a Training and Development (T&D) option to widen the candidate pool and bring in an infusion of "new blood." The JOB would specify that, if selected, candidates would first take part in classroom instruction and would then be provided with on-the-job training. Supervisors identified as having the most critical recruitment and/or retention issues would be selected to participate in the program. Through a rigorous panel interview process involving the receiving supervisors, participants would be selected based on technical skill and aptitude as well as desired core competencies. Once a cohort is selected, each receiving supervisor would identify which participant(s) they wish to retain at the conclusion of the classroom instruction. Receiving supervisors would collaborate with the Workforce Planning Consultant to create customized Mentoring or Training & Development Plans based on how their specific unit operates. This will ensure participants receive the most effective knowledge transfer and training.

Course Delivery and Assessment:

Classroom instruction would be approximately 8 weeks in duration, five days per week, and would consist of modules focused on basic Mainframe concepts determined by subject matter experts (SMEs). However, if experts later determined that delivery would be more effective if provided in a different manner, such as three days per week, the program could be modified. The delivery method would be a combination of computer-based training (CBT) and lecture from both Retired Annuitants and interested staff.

For modules requiring CBT, the primary training location would be Room 2253 at the Gold Camp Campus. Tentatively named The Learning Resource Center (LRC), this room is scheduled to be vacated March 4, 2011, and would function as a resource facility for any OTech initiative. Once converted, the room will comfortably accommodate approximately five computer workstations, a white board for lecture purposes, a projection system, and any additional hard copy resources that staff might find helpful. Utilizing this room would allow the Mainframe University students to have a consistent and convenient work environment that would not incur the additional cost of reserving space within the department's Training Center. However, if there is a need for additional space, the Training Center could be scheduled to accommodate.

Acquiring course materials is not problematic as OTech has an existing agreement with IBM to use their curriculum. Instructors would be required to complete formal assessments on each student regarding their aptitude and progress and would frequently update the receiving supervisors and the Workforce Planning Consultant. Classroom instruction need not be limited to candidates selected to take part in Mainframe University. Courses could be open to any staff within OTech who perform Mainframe functions and want to update their skills or cross-train in another area. Course curriculum could be taught to a new cohort of participants on a quarterly basis or as positions become available, and an additional roster of IBM courses could be implemented based on manager request and instructor availability.

Unit Assignment and On-the-Job Training:

Once the classroom instruction is completed (assuming participants are successful), they would be placed with their receiving supervisors for on-the-job training. The interviews conducted with supervisors and managers within the Engineering Division identified two predominant approaches regarding how on-the-job training should be conducted. Some supervisors indicated that work can and should be rotated within their units since exposure to various Mainframe functions would be extremely beneficial to the overall development of their participant. Other supervisors spoke to how the work within their units is more vertical in nature out of necessity. In these units, there are resident "experts" for different functions due to the extremely complex nature of the work. Therefore, rotating their participant through other units would not serve to address their specific workforce planning issues as successfully.

In order to help meet the unit's individual needs, the receiving supervisor would work with the Workforce Planning Consultant to create a customized plan for their participant. If beneficial, their Plan could include rotations through some different Mainframe units identified as being necessary to their participant's overall development for a specified period of time. (This would of course depend on other supervisors' willingness and ability to accommodate this request.) In other cases where rotations would not be deemed as beneficial, the receiving supervisor would create a plan with the Workforce Planning Consultant to address how their participant would receive the appropriate training and development from Retired Annuitants and other senior staff within their unit alone.

Participant Oversight and Assessment:

As it is anticipated that most of the candidates will be on probation, supervisors would need to complete timely probationary reports, provide feedback on their progress or lack thereof, and keep the Workforce Planning Consultant apprised of any problems with performance or behavior. If the candidate is completing a T&D assignment, s/he would remain in the assignment for up to two years or until s/he has successfully met the minimum qualifications to take the exam(s) for the class. Once reachable, the candidate could be permanently appointed into the class. If the candidate is not able to become reachable, s/he would return to his/her former unit or department at the conclusion of the assignment.

It is important to note that the on-the-job training component is not designed to be rigid in nature. If a receiving supervisor indicates that s/he would like to modify how his/her participant is trained, s/he could easily work with the Workforce Planning Consultant to do so.

In order to measure return on investment, the Workforce Planning Consultant will periodically conduct focus group sessions with the students. The intent will be to gather specific feedback regarding the effectiveness of the Program at different stages. This data will be compiled by the Consultant and shared with the division's Deputy Director, subject matter experts, instructors, and receiving supervisors for their consideration and possible modification to the Program.

BENEFITS/ADVANTAGES OF PROPOSED PROGRAM:

- The very nature of the Program requires that first line supervisors take ownership of and actively participate in assessing and solving their individual workforce and succession planning issues;
- It is a cost effective solution to a growing problem—it utilizes our own staff who are experts in our platform rather than rely on costly outside vendors and encourages a culture of knowledge transfer, sharing, and de-siloing;
- It provides resources to the units designated as having the most critical need and provides a structured training/mentoring program that requires accountability;
- It requires supervisors to assess risks and gaps within their units so they can customize their mentoring/T&D plans—the on-the-job training component is not designed to have a “one size fits all” approach;
- As designed, it will provide the best mix of training to meet learner needs to produce more well-rounded staff (formal classroom instruction and interaction, CBT, and on-the-job training); and
- It provides the opportunity for other OTech staff to receive valuable cross training in other aspects of the Mainframe platform, fostering continued career development and growth.

PROGRAM DEPENDENCIES:

- Funding must be secured, and OTech must be willing to redirect existing vacancies for the program;
- The program's success is contingent upon the successful recruitment and retention of a strong candidate base. Interview responses from Section and Branch Managers in particular spoke to an underlying message being sent by some members of senior management that Mainframe is

being phased out and will no longer be a viable, long-term career choice. This could prove problematic in securing high quality candidates for the Program;

- Effective screening criteria and interview questions are essential and more creative methods of recruitment may need to be used to attract qualified candidates;
- The course curriculum will be delivered by Retired Annuitants and current staff who are considered subject matter experts and are comfortable with providing instruction to a group;
- The receiving supervisors must be committed to providing the candidate assigned to their unit with the time and resources needed to be successful. Retired Annuitants and senior staff must be encouraged to provide the appropriate knowledge transfer, mentoring, and training. The receiving supervisor must also be committed to providing the candidate and the Workforce Planning Consultant with feedback regarding progress on a regular basis so the Program's effectiveness can be gauged and modified as needed; and
- Strong executive buy-in, sponsorship, cooperation, and continued support will be critical to the success of the program. Without this, receiving supervisors will not be as inclined to work with the Workforce Planning Consultant or adhere to the structured nature of the program.

CONCLUSION:

For this initiative to succeed, it must be fully embraced by Mainframe management. If supervisors are not committed to fostering the growth and development of the participants and if executive management does not believe in the value of doing so, the program will struggle to achieve its goals. While it is certainly understandable that furloughs, hiring freezes, retirements, and the heavy nature of the workload have all presented challenges for the division in terms of finding the time to provide more extensive mentoring and knowledge transfer, there will simply never be a "right" or convenient time to begin addressing these issues. By all accounts, the nature of the work within Mainframe units is extremely complex, unique, and critical to the survival of the department. If the division does not aggressively pursue a solution to the inevitable loss of its key staff, the repercussions will be costly. These include relying on the services of outside contractors, paying heavy fines if upgrades are not completed within allotted timeframes, experiencing extended outages with high visibility, and inevitably losing customers due to poor and inefficient customer service. Therefore, incorporating a structured, "homegrown" solution which is in the true spirit of workforce and succession planning would be a critical step towards providing long term, valuable resources for both the division and the department.