

IT and the MMIS

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My Start at Maryland

I took classes at the University of Maryland years before I ever imagined I'd be working there. While stationed in the Army at Campbell Barracks in Heidelberg in the 1970s, I took several computer classes at City Colleges of Chicago (CCC) and seven German classes at Maryland. Little did I know at that time that some of my German instructors, and some of my fellow students, would become future colleagues of mine. Rosemary Hoffmann (then Scholl) and Wally Knoche were two of my German instructors and Linda Traenkle and Al Pepper were in four or five German classes with me. A fellow student at CCC gave me a tip that led me to being hired at Maryland. At that time, Maryland to me was simply that office at the Education Center on Patton Barracks where I signed up for my classes. I wasn't even aware of where the Maryland administrative offices were. Only when I had to take a makeup exam for Wally's German Literature class in his office did I discover that the Maryland offices in Europe were on Campbell Barracks in Heidelberg.

In 1980, Kins Collins, a History lecturer at Maryland with a Master's degree in History from the University of Chicago, and whom I had met in programming classes at CCC, told me about an opening for a computer programmer at Maryland. Someone had already been hired for the position but then dropped out because she decided in the meantime that the pay was not enough for her. I had recently been discharged from the Army and had just finished my first two semesters studying computer science at the University of Karlsruhe. I was the first student ever to study there under the G.I. Veterans' Bill, so I had to get their computer science program authorized before I could start receiving money from the V.A. Compared to my monthly V.A. allowance, Maryland's offer was a sizable improvement and was in a field--computer programming--in which I had always had an interest. I had an interview with Vida Bandis, was hired, dropped out of the University of Karlsruhe, and started working in October 1980 in the Heidelberg offices, which in the meantime had moved a few hundred meters off base behind Campbell Barracks to the location at Im Bosseldorn 30.

Thirty-three and a half years later, in 2014, I retired, still as a computer programmer. Over my career, I progressed from Programmer in 1980 to Lead Programmer in 1983 and then to Co-Director of IT Programming in 2004, with Scott Culton being the other Co-Director. I consider these positions really the same job; the responsibility was greater each time, but my main job was programming, something that I loved. I was lucky that these two promotions basically just dropped into my lap. After the interview with Vida Bandis, I never applied for another position and never had another interview. Both Scott Culton and Sam Lawrence, colleagues of mine during my entire career in IT, also essentially had the same jobs during their even longer careers in IT in the European Division. I was often amused that in the other offices, staff members seemed to be having interviews frequently and seemingly changing their positions on a whim.

Original Computer System

When I started in 1980, the computer system then used by Maryland in Heidelberg, the C3, had reached the end of its useful life. Its data storage was limited, and only one person could use it at a time, similar to a personal computer today. Scott Culton and Sam Lawrence and three other colleagues from the IT staff worked directly with the C3 to enter data and produce reports. The data storage was so limited that only a maximum of 40 classes (120 credit hours) for any one student could be stored on the computer, which was inconvenient, to say the least. The system had been designed by an outside consulting company, and they just assumed that no single student would ever take more than 40 classes. For those students who did take more than 40 classes, the solution was to store the overflow records on paper in one of the desk drawers of Claire Snell, the Registrar at the time. After the C3 was retired Ralph Atkins from the Print Shop was allowed to take it home, and he put it in his basement.

First Pre-MMIS Project

My first project was working with Bill Collins--the head of IT--Kins Collins, and Mark, a COBOL programmer from England whose last name I unfortunately no longer remember, to develop a student record system for the newly purchased HP/3000 Hewlett-Packard multi-user minicomputer to replace the C3. Although Kins was a History lecturer in the European Division, he had discovered computers and was eager to change careers. He was the fellow student from CCC who had suggested that I apply for the Maryland programming job. The Statewide Divisions of UMUC had already purchased an HP/3000 for themselves as well as one for the Asian Division and one for the European Division. It arrived shortly after my arrival. Thank goodness a systems person and a programmer came soon thereafter from the Statewide offices for a two-week visit to get us started. They gave us standards, solid advice, and many tips so that we could start developing a student records system in Europe. This was the first of many visits to and from the IT departments in the other two divisions.

I shared my first office with Jack Kelso, who wasn't even in IT but instead worked in Student Services and was responsible for verifying the accuracy of transcripts before they were sent to students. After the HP/3000 system made his job superfluous, he became the document management specialist. Jack was a smoker, but I wasn't. He went on a week's vacation once, and I put up a no smoking sign in the room while he was gone. When he returned, he obeyed the sign and no longer smoked in our office.

We also worked closely with Gina Schmidt-Phillips, who worked in Student Records, on design and writing reports. Over my entire time in Heidelberg, I worked with Gina so often and so closely that I consider her to be an honorary member of IT.

The name for IT at that time was ISAC (Information Systems and Academic Computing), but I will continue to use only IT to refer to it. I was initially quite overwhelmed with how a university functions. Since there was no Help Desk then, each of us in IT did "house calls" when our colleagues needed computer help. This gave me the opportunity to get around and get to know almost everyone in the Heidelberg offices and become familiar with their jobs. I missed this later, after we had an official help desk. With this new system, the users in the various offices were able to maintain the data themselves. In-house computing and academic computing later separated into two separate entities, but in my early years, I also worked with Rinaldo Vachino

on some smaller academic computer projects. I once flew to Athens, Greece to give a one-hour presentation to the Air Force on the European Division's academic computer program. One of the Computer Science adjunct lecturers, David Fisher, normally did these presentations, but as he was unavailable for the one in Greece, I was asked to do it. I very much appreciated that he gave me his presentation notes to work with. Because I flew by military aircraft, I had to wait three days for an available space to fly back, and that gave me ample opportunity to do some sightseeing before returning to Heidelberg.

The Design of the MMIS

Joe Arden and his advisors realized that what we had developed was not enough to carry Maryland into the future. The European Division needed a comprehensive system that would do more than just handle student records. David Fisher, who had started a computer consulting company with his wife in Wiesbaden called PersonaTEC, was hired to design this system. Because he was an adjunct instructor in Computer Studies, he was already familiar with the European Division. David and his top designer and programmer, Jörg Happel, came to Heidelberg once a week to meet with representatives from all of the Heidelberg offices on the Computer Advisory Committee (CAC) to determine what the requirements for each office



Figure 1: HP/3000 computer room in Building 1 in 1982

were. The end result was the Maryland Management Information System (MMIS). This was my first experience with professional computer system design people, and I was very impressed with their work. Up to then, I had learned by doing or by studying computer science books, but I now had experienced professionals to learn from. During this time, I also finished my Master's degree in Management Information Systems at Boston University and Bill Collins also retired. John Hurdle, a PhD in Computer Science as well as an MD, became the Director of IT. He held this position for four years and was able to learn a lot from him.

It took a whole year of CAC meetings to develop specifications from the users and complete the design of the MMIS. The MMIS was designed to not only handle the student records but also instructor records, scheduling, textbook sales, payroll records, and financial records, really almost everything that the European Division did. One particular incident still sticks in my mind: we needed to decide how to store dates in the new system. Unlike modern computer systems, the HP/3000 did not have a built-in date type but used only numbers and character strings for course names, student names, university names for transfer credits, etc. We decided on the format of eight digits, such as 19851230, which would represent the date of December 30, 1985. A week later, when David and Jörg came to Heidelberg again, I noticed there were only six digits in the database design (851230 instead of 19851230). I pointed out that we had decided on eight digits, and that we could only go up to year 99, which would represent 1999, and we would have a major problem starting in the year 2000. The memory and the size of a database on the HP/3000 were limited, and David said we needed to conserve space. His argument was that we needed to save space wherever we could; after all, almost all the database records had a date attached to them. His final response was, "The MMIS will be replaced with something else by then anyway."

The Y2K Problem

That seemed to make sense at the time; however, as the Millennium approached, there was no replacement in sight. I ended up spending most of 1998 converting the MMIS database from using six-digit dates to eight-digit dates and modifying the applications to use the bigger date size. If this had not been done, we really would have had a Y2K disaster in 2000.

The whole world had been worrying that computers all over the world would crash on New Year's Day in 2000. Then nothing happened, and a lot of people were wondering, what in the world was all the excitement about? The answer is simple. Nothing happened because programmers like me spent a lot of time fixing the problem ahead of time.

The Development of the MMIS

After the design of the MMIS was completed, PersonaTEC won the bid for a consulting firm to do half of the programming and implementation. To celebrate winning the contract, David invited the CAC committee members to an evening meal at an Indian restaurant in Rohrbach in Heidelberg. Jörg came in his own car and, unfortunately, despite the short distance from Maryland to the restaurant, he lost his way. Not having a mobile phone in the mid-1980s and not having the restaurant's address, he was forced to return home and miss the celebration.

The European Division installed a smaller HP/3000 computer in Wiesbaden so that Jörg and his programmers could work on their half of the programming locally in their offices. (This HP/3000 was later transferred to the Munich residential campus of the University of Maryland for their use.) The other half of the programming was to be done by programmers at the European Division. Besides programming, one of my jobs was to verify that the applications, whether developed in-house or by PersonaTEC, met the established programming standards and functioned correctly.

David and Jörg continued visiting us in Heidelberg once a week and would bring several completed applications with them each time on a large computer tape reel, which meant that I had one week's time to check the new code and test the applications. If an application did not function correctly or the code did not meet the standards, it was sent back for corrections. Once it was accepted, the European Division was responsible for any bugs or problems, so we knew it was important to test the applications from PersonaTEC meticulously. One problem was one of the PersonaTEC programmers who had trouble conforming to the standards. I had to check his code extra carefully and frequently had to send his work back to PersonaTEC for corrections.

Jörg was an excellent programmer and worked very fast, so I had to work fast to keep up. He developed programming standards and reusable routines that were so good that we used them until the end of the MMIS. I was very proud of the fact that although countless programmers worked on MMIS applications over the years, the code looked the same in all of the applications, which made fixing bugs, making modifications, and orienting new programmers much easier. The standardized user interface and the look and feel was the same for all applications, making it

easier for the users to orientate themselves. In my opinion, these standards were the main factor in securing the MMIS a success long life.

It took a year to finish the development, and in the fall of 1987 the MMIS was put into operation. In the meantime, IT had moved to the basement of Building 2. Before the users could begin to use the system, we needed to convert and transfer all the data from the system that Kins, Mark, and I had previously developed into the MMIS database. It was complicated because not all of the data transfer could be automated. The main problem went back to the C3 system, which had no error checking on the spelling of transfer credit college and university names. The users who had entered the data over the years had unwittingly entered rather fanciful spellings for many of the schools during data entry. One of the transfer credit universities had been entered into students' records with over 40 different spellings. We hadn't corrected this in the earlier HP/3000 system, but now these spellings needed to be fixed. We decided on a partially automated procedure. Scott Culton had the unenviable job of watching the data records fly by on a computer monitor and to note any cases that needed to be fixed by hand. This job went on for days.

Payroll Glitch

The student records system was developed first. Then we started on the payroll system. Jürgen Paschke, head of Payroll, drove the payroll data, which consisted of IBM punched cards, once a month to a bank in Frankfurt for printing the checks and creating deposits in a wooden box that had no lid. The cards had to be correctly sorted for the checks to be printed correctly and for the deposits to be accurate, and it would have been a disaster if they ever fell out of the box and got out of order.

Unfortunately, the very first time that the payroll data was prepared using the new MMIS-based system, we had a different type of disaster. We ran the payroll application, and then I noticed something was wrong with the data. I wasn't able to find the problem until late in the afternoon... and there was no Plan B. The data needed to be in Frankfurt by the next day or the European Division staff and faculty would not be paid on time. Amazingly enough, I stayed calm, looked at the problem, and realized what needed to be done. Unfortunately, the solution required a lot of data correction. I informed Paula Harbecke, the head of the Business Office at that time, and she immediately asked if she could help. I said great, and we went straight to work on fixing the data. We ended up working through the entire night until eight o'clock the next morning. We were successful, Jürgen took the box to Frankfurt, I went home and went to bed, and Paula went to her office and worked the rest of the day, and everybody got paid on time. I will never forget that night. It was fun reminiscing about it again with Paula at the Overseas Marylanders Association gathering in Heidelberg in October 2019.

The MMIS in Asia

Since the Asian Division also had an HP/3000, they expressed a desire to use the MMIS. When one of the European Division programmers, Keith Hilgeman, transferred to the Asian Division after the MMIS was in operation in Europe, he took along seven large IBM reel-to-reel computer tapes containing the MMIS system on the flight with him and installed the MMIS on the

HP/3000 in Asia. In Europe, we continued to develop the remaining plans for expanding the MMIS; but, with no electronic communication between the two IT departments at the time, there was no easy way to update Asia with our additions and the systems drifted apart.

In 1990, I went to Asia and installed the updates that we had made in Europe on their system. I spent three weeks working with the Asian IT staff installing and tweaking the updated MMIS. They had an all-female programming staff but, unfortunately, I don't remember any of their names. I was quite envious of their head programmer, who was able to log into her account on the HP/3000 from home. It wasn't until years later that I was able to do that in Heidelberg.



Figure 2: IT Christmas dinner in 1990. Left to Right: Scott Culton, Linda O'Reilly, Larry Arnoldy, Gina Schmidt-Phillips, Franny Kollenz, Martin Rodriguez, Kathy Williamson, Paul Harper, Sam Lawrence, Michael Boyd, (unknown), Jari Ojala, (unknown), Bill Collins

The hospitality of the people in Asia was wonderful. Paula Harbecke had transferred to Japan to be the Director of the Asian Division in 1990. She and Doug Lemmon, who later became the IT Director in Heidelberg, accompanied me to Tokyo each weekend. One highlight was an evening in a karaoke bar where I sang the Beatles song "Obladi Oblada", which was an extremely rare incident of me singing in public. Another highlight was going to a Tokyo Giants baseball game. Doug and I took a rapid transit train to the game, and the car we were standing in became even more packed at every stop. By the time we got to the game, Doug and I were only about a yard or two apart, but there were probably a couple dozen other travelers standing between us. But, since Doug was much taller than the average Japanese person, I had no trouble keeping track of where he was.

I went to the Asian Division again in 1999 to work with the Asian Division's Director of IT, Dan Vogel, and the Lead Programmer, Charline "Charlie" Martinez, to assist them in getting started with solving the Y2K problem with their MMIS. This gave me the chance to visit with Joe Arden, who had become the Director of the Asian Division after switching places with Paula Harbecke, who had returned to Europe to become the Director of the European Division.

After my visit in the early 1990s to Asia, the MMIS systems started drifting apart again. In the latter half of the 1990's, Doug Lemmon replaced Bob DeWitt as IT Director. Between John Hurdle and Bob DeWitt the position of IT Director was vacant, however Leann Cragun (Area Director) and then Mike Mauer (Business Office) held the position of temporary acting IT

Director. Doug made an effort to combine the European and Asian databases into one, but it simply did not work out, and we never got another chance to bring them back into sync. In practice, it turned out that they did not drift too far apart, since the student registration and scheduling systems were quite mature by then and no longer required many changes. The main difference had to do with a system to handle textbooks. Unfortunately, each division developed its own MMIS system for handling textbooks. It wasn't until the 2010s that a combined Internet-based system that was originally developed in Asia and that allowed the students to order textbooks online was also implemented in Europe.

The MMIS as Mature System

As time went on, electronic communications continued to improve, the Internet arrived, and PeopleSoft started to appear on the horizon. I had moved on to other computer projects while still keeping an eye on the MMIS and was eventually the only MMIS maintenance person. It took very little of my time because it just hummed along on its own and seldom needed looking after. The MMIS was mature, but it was old technology (COBOL) and I was able to devote my time to work with more modern technology, such as MARS (Maryland Automated Registration System), which was used by the Field Representatives in Education Centers throughout the European Division, as well as on the newer Internet-based scheduling and textbook ordering systems. One of the great things about being in IT and especially as a programmer is that that technology is continually changing and getting better. One needs to continually keep moving and learning to keep up, but that kept me motivated and was one of the many things that I loved about my job.

Leadership in the Overseas Divisions

During my first twenty years at Maryland, the Director of the European Division was either Joe Arden or Paula Harbecke. They interacted well with the staff and both would regularly visit the various offices and ask how things were going. In 1999, I was at a PeopleSoft meeting in Maryland with several other members of the European Division. We were invited to a breakfast one morning with the newly appointed Director of the European Division, Andrew (Andy) Chambers, a retired U.S. Army Lieutenant General, who also happened to be in Maryland at the time getting introduced to his Stateside colleagues. Shortly thereafter, he started his position in Heidelberg. Three months later, I was walking in one of the hallways in the main building and saw a man in the hallway near the Director's office. I did not recognize him and wondered who he was. As I got closer, I saw that it was General Chambers. Had I not met him at that breakfast in the States, I would not have known who he was and would probably have thought he was a visitor and asked him if I could help him. I was flabbergasted that this was the first time that I had seen him in the offices in Heidelberg. I said "Hi" and kept on going. It turned out that that was one of the rare times that I ever saw him during the years he was the Director of the European Division. I am not sure if I ever had another conversation with him after that original, "Hi". Such are the differences in management styles.

The End of MMIS

PeopleSoft eventually replaced most of MMIS, but even in 2013, there were still some active MMIS applications being used. The last active application was the printing of transcripts requests for inactive students. The transcript program was the first application that I developed, and it was the last one that was still actively used.

Before PeopleSoft could be activated in the Overseas Divisions, the MMIS data needed to be converted and transferred into PeopleSoft. Gina Schmidt-Phillips, Angie Littman, and I spent what seemed like years working on converting the data for both Asia and Europe. We ended up learning much more about the intricacies of the PeopleSoft database than we ever wanted to. Angie had been a programmer in Asia, but later moved to San Diego, where she became a remote programmer for the European Division. She logged in for video and voice conferences daily at 6:00 a.m. her time to work with Gina and me on the conversion. Her database programming skills and knowledge of the Asian system were invaluable for the project. Tom Steele created an application to monitor the conversion process and give detailed reports and counts of data transferred while the conversion was going on. This was very important during testing and data transfer for getting a handle on how long the conversion and transfer of the data would take. The PeopleSoft administrators were skeptical if there was enough space to handle all the data from overseas, so the first pass was to convert and transfer only the most current five years of active data in the overseas divisions. A year later we converted and transferred an additional ten years.

I made several stateside visits alone or with Gina or Angie to work with the PeopleSoft team from Asia on the MMIS data conversion. One time in 2004, while in a meeting in Adelphi, I was notified that John Golembe, the successor to General Chambers as Director of the European Division, was calling me on the phone. He offered me the position of Director of IT, because the then current Director, John Mulvey, was leaving the University. I wasn't really excited about the position, because I really liked programming. John then offered it to Scott Culton, who wasn't that excited either. As a compromise, the position was split between Scott and me. John asked us a couple of times thereafter if one of us would rather become the sole IT Director, but we always declined. After John Golembe was replaced by Alan Berg, we were never asked again, and we remained Co-Directors until our retirements in 2014.

Transfer of MMIS Data to PeopleSoft

Due to potential space limitations in PeopleSoft, it was decided not to transfer the remaining student data to PeopleSoft. Instead the plan was to print the transcripts for the MMIS students whose data had not yet been transferred to PeopleSoft and scan them into a document management system in Adelphi. This amounted to about 45 years of transcript data. The Asian Division had already modified the transcript application to print transcripts from a list of Social Security numbers. I wrote an application to select the Social Security numbers of all the students whose records had not yet been transferred and feed them to the transcript application. We transferred copies of both the Asian and European Division MMIS systems to a



Figure 3: Thousands of MMIS Transcripts ready to be scanned into the document management system in Adelphi.

HP/3000 in Adelphi, and I remotely started a job that ran for two days to print thousands and thousands of overseas transcripts on a high-speed printer in Maryland. These printouts were then stacked in a room and a group of office workers in Adelphi spent weeks and weeks manually feeding the transcripts, page by page, into fifteen scanners. Shortly thereafter, I was in Adelphi with Scott Culton, Tim Hollifield, Geoff Brown, and one of the programmers from Asia to explain our jobs to them in preparation for takeover of the overseas IT departments by Adelphi. Tim was a programmer and systems engineer in Heidelberg and Geoff was the head of Computer Field Support in Heidelberg. While I was there, they were still in the process of scanning the overseas transcripts, so I was able to visit the scanning people. They showed me the many stacks of paper transcripts that still needed to be scanned.

My Retirement

That was the end of the MMIS and the end of my career at Maryland. The Heidelberg administrative offices downsized and moved to Kaiserslautern in the fall of 2013, and both overseas IT departments were taken over by Stateside in July 2014.

I consider myself very lucky to have found a career that I really loved in the wonderful town of Heidelberg. I never even thought about counting down the years or months or days until retirement like I have seen others do, because I never thought much about retirement. In the end the decision was made for me. What I have left are the many enjoyable memories and the companionship of several former Marylanders who also live in the Heidelberg area.