

# Customer Service at SWU's Occupational Health Clinic

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## ABSTRACT (Part I)

Part I of this case describes a small MIS department responsible for medical information systems that support an occupational health clinic situated in a major university. Their customers are primarily medical and administrative professionals who, for a long time, have been disappointed with the team and the systems. The environment is rather hostile. A new MIS department head is hired and is in a quandary how to ensure success with major MIS projects that are critical to their medical community customers. This part of the case is suitable for discussion in a single class period, separated from the discussion of Part II, which follows.

**Keywords:** user-IS relationships, customer service, managing SDLC, end-user application development

## 1. INTRODUCTION (Part I)

It has been a good news, bad news August for Marty Coles. Marty gazed out his office window to see clouds building over the mountains. Rain is always good news here in the desert. His new job heading the MIS department at Southwest University's Occupational Health Center (OHC) sounded like good news when he accepted the job offer last week. Now, he wasn't so sure.

OHC information systems were woefully outdated and required ongoing manual workarounds by both users and MIS staff. While records were rarely lost, patients had to provide info multiple times, needed records traveled slowly between groups within OHC, and decision-enabling information was severely lacking.

When Marty had interviewed, the search team had told him that the MIS department was staffed with very talented individuals. Despite their talents, however, the internal reputation of the MIS team was terrible. Judging from the state of the OHC applications, that reputation was, unfortunately, well deserved. Users had developed quite a repertoire of sarcastic and biting comments to describe the MIS department.

In just a few days on the job, Marty saw firsthand just how bad IS-customer relations were. Dozens of times each day since he joined OHC, MIS customers and MIS staff members came to his office or cornered him in the halls to tell their pained tales.

Customers told of very specific MIS failures, enormous frustration, and even offered to show Marty the

cumbersome, error-inviting workarounds they'd devised to get their work done. On the other hand, the MIS team described customers who repeatedly failed to provide clear requirements, who change their minds mid-way through a project, and who seem to point out problems only after giving MIS teams an approval. No one seemed hopeful for change.

Despite these issues, Marty has been given the task of overhauling OHC information systems to bring them solidly into the 21<sup>st</sup> century. Much of SWU was already engaged in business process reengineering (analysis and radical redesign of organizations to achieve breakthroughs in performance), and the Marty's new information systems responsibilities were a part of that organization-wide effort. He was expected to show noticeable results soon.

OHC has an MIS Advisory Board, made up of key OHC managers, doctors and users. His next meeting with them was in two weeks. It just *had* to go better than his first meeting last week. They expected Marty to provide an initial assessment of current information systems and to focus on the gap between current functionality and the needed functionality (to support the reengineering plan). Then, he'd have to outline a plan to fill that functionality gap.

## 2. SOUTHWEST UNIVERSITY

Founded in 1889, the SWU is an urban campus in the heart of Red City, in southwestern USA. SWU offers a unique campus environment with a Pueblo Revival architectural theme that reflects many of the buildings of the nearby

Pueblo Indian villages.

At SWU, 26,000 students attend main campus and another 8,000 attend branch campuses positioned around the state. SWU boasts outstanding faculty members with national or worldwide renown. SWU employs 23,000 people statewide, including employees of SWU Medical Center. The Medical Center is the state's largest integrated health care treatment, research and education organization and home of several world-class research and treatment development centers including an Occupational Health Clinic.

### **2.1 SWU's Occupational Health Clinic**

SWU Medical Center has a complete Occupational Health Clinic (OHC) servicing mainly SWU's employees. The clinic provides the traditional therapeutic services: a walk-in emergency clinic, physical therapy, allergy clinic, travel clinic, etc. All services are provided on site at SWU's OHC on the main campus. The clinic has 150 employees including 10 physicians.

About 15 years ago, the medical clinic developed an MIS plan and hired its own MIS staff. They began developing applications to meet the needs of the clinic, one area at a time. They had a drive to automate many manual processes by leveraging a computer system. As was common at the time, individual applications were developed to serve individual needs with little consideration to overarching "enterprise" needs.

Thus, today MIS applications numbered over 40. These applications keep track of items such as immunizations, safety physical exams, lab results, x-ray reports, pharmaceuticals inventory and dispensing, and emergency medical run sheets.

### **2.2 OHC MIS Department**

OHC hires and manages their own Medical Information Systems (MIS) department with staff numbering 4-6 in recent years. These individuals developed and now maintain these 40+ applications. When Marty Coles joined the department, three employees were dedicated to application development for the department, while the other employees maintained the 40+ network servers.

Most OHC applications had been developed more than seven years before Marty was hired using the PowerBuilder application development platform from Sybase. The MIS department had also migrated these applications to more powerful databases twice during these seven years: (1) from Clipper to Sybase, and later (2) from Sybase to Microsoft SQL server.

Most of these applications still exist and have simply been modified over time to adapt to the new needs of the users. Most MIS staffers have worked in the department for at least as long as these applications have been running, and feel a strong sense of ownership of the applications they developed and maintain. There is a strong, protective

camaraderie within the department.

Traditionally, each member of the MIS department had his own set of applications to support and was singularly responsible for that set. That developer maintains documentation largely for his/her own use. When a customer had an issue with an application they called that individual for help. Thus, each of the four MIS staffers functioned largely as an independent mini-department, with little cross training among applications and no expectation of collaborative work. Customers received support from one and only one staffer for each application; customers could then, be working with all four staffers depending on their particular needs.

Recently the department finished two new software applications, (1) a laboratory system developed by the staff member most familiar with clinical laboratories, and (2) a scheduling system, developed by the team as a whole – an uncommon situation.

In early August 2002, after a few years with SWU's Human Resources Systems, Marty Coles was asked to head the OHC MIS Department. Marty had already experienced several areas of the medical information systems. For example, he had had four years as director and CIO of a health plan; and several years with an independent medical practices association.

Just prior to joining OHC, Marty had been part of SWU's PeopleSoft implementation team. That project was a multimillion-dollar application to manage traditional human resources activities: recruiting, hiring, job tracking, employee directories, and benefits and retirement management. With that challenging success behind him, it seemed like a natural progression for him to move to OHC.

## **3. MEDICAL INFORMATION SYSTEMS (MIS)**

Before accepting the post as department head, Marty was warned that MIS was the "Black Sheep" among SWU's IS groups and that MIS was not having much success. By and large, the customers were not happy and did not trust the results of the systems they had. While the MIS staffers believed that their applications performed as requested, customers believed otherwise.

Trust – in both directions – between customers and MIS staff was very low. MIS staff members simply did not trust their OHC customers. Shortly after joining the team, Marty had several conversations with his new staff and was amazed at some of what he heard. "The customers don't know what they want. We have to tell them and train them on what their processes were."

There were other, "We are the ones that know their business practices." MIS staffers informed him that these were "the worst customers" they had ever experienced. Marty also understood that for some of his team members, these were the *only* customers they had experienced.

Many had previously worked on short-term projects and had not previously had the opportunity to develop customer relationships.

Marty found that among his team members, there was neither empathy toward customers' pressures nor willingness to admit that without their customers. The team had no need to build applications (and, therefore, no job at SWU). It had been Marty's experience, however, that medical customers are demanding and they have many information needs. In fact the *business* of health care is often bogged down with paperwork and research. Good reliable information systems are keys to efficient operations.

### **3.1 A Quick Current State Analysis**

Soon after joining the Medical MIS team, Marty met with each OHC *customer* team lead. Marty was interested in their answers to three questions: (1) What is your overall satisfaction with the software they had, (2) What is your overall satisfaction with the Medical MIS team, and (3) if you had to do it again, what would you do differently? These questions were intended to open the communication and, in each interview, Marty asked additional questions based on the responses from his customers.

Marty was amazed at the consistency in his customers' answers. The responses from Michelle Rowland reflect common complaints: (1) we created a manual verification process for nearly every report, (2) operational reports were done by hand, (3) output from Medical MIS systems were not trusted, (4) Medical MIS systems do not "talk to each other" and so data from them are inconsistent and difficult to reconcile, (5) systems did not work for them any more, even if they once did, (6) "why do I *need* to use this?", (7) things take too long and (8) reports are "not what I asked for." Even their happiest customer who uses the Clinical Laboratory system is unhappy that the systems just don't talk to each other.

Marty saw that the products of his team profoundly frustrated the Medical customers. He was quite disturbed to discover the extent of the system problems he would need to deal with. Each system was not only independent of every other system used, but these systems had unique requirements for how customers would specify or select dates. For example, if the customer wanted the report to include activity through, say, April 30, 2003, the customer would need to select May 1, 2003. For the same reporting period, another system would have the customer pick April 30, 2003 and would include time through the entire evening. There was no documentation of these requirements, and customers simply learned from one another and by word of mouth about the nuances of data entry and selection.

This date example was typical of other problems reported by Medical MIS customers. Marty noticed that one application would print a physician name differently than another application did. He soon discovered that MIS was

maintaining two different source tables for the physician information. It was clear to Marty that these applications had been developed as "stove pipe" applications with no functionality and no integrated data.

Structurally, the database was weak and thus data integrity and reliability was suspect. Most tables did not have primary keys and fewer had foreign key relationships enforced. What the customers experienced was difficulty getting accurate reports. Since applications developed and maintained by each developer were structured and behaved differently, users experienced frustration remembering the details of each application (there were about 40).

Users wondered out loud, "What do those MIS folks do anyway?" Users had created more than 10 significant (not spreadsheet-based) applications *on their own*. That users themselves were meeting 10% of their MIS needs was not a good sign.

Marty also learned that OHC had simply worked around the MIS team to purchase a major (\$250,000) Electronic Medical Record (EMR) application and Disease Case Management software. These two workarounds resulted in very high visibility disasters for the OHC. The EMR application was actually just a "user-interface" tool intended to connect to specific underlying databases; it was not, as the OHC staff had assumed, a vertically integrated tool that contains both database capabilities and screen and report generating capabilities. Neither the clinic staff who requested the tool nor the management who ultimately approved the acquisition had understood the functionality they were acquiring. The result of that acquisition was, of course, a terrible disappointment and complete waste of resources. The EMR was never implemented and it is likely that it never can be implemented at OHC.

It seemed to Marty that he had been brought into an inferno of ill will. Customers did not want to see another proposal that would go nowhere, and they were skeptical that the "new guy" would make any positive difference to them. Customers wanted no more models or stories of how the applications would be built.

Marty's first Advisory Board meeting (last week) had been very uncomfortable for him. The Board had come to expect the MIS team to formally track and report their time allocations for every project, every day. Despite reasonable successes recently, they insisted on detailed reporting of the work life of each MIS team member. Even though they felt somewhat helpless to control the MIS team's work, the Board tried to exert control in the only ways available to them: MIS team work hours allocated to specific projects had best start showing some business results.

Marty must create some order out of this chaos and has just a couple of weeks before his next Advisory Board meeting to figure out a credible, plan to do so.

**ABSTRACT (Part II)**

Part II of the case is intended to highlight the importance of coupling informal (people skills-based) system development techniques with the rigorous formal (technical skills-based) techniques. This part describes the approach of Marty Coles, the new MIS Department head to solve serious, longstanding problems between MIS teams and their customers. Managing end-user application development is also discussed. After discussing Part I, this part of the case is suitable a single class period for either masters or undergraduate students.

**4. WHAT'S GOING ON HERE?**

Marty was plagued by the thought that the highly visible application failures (see Part I) were not the real problem. He wasn't even sure that the deep mistrust was the real problem. He had the gnawing feeling that so many failures must surely be symptoms of some big problem ... whatever that was. He was deeply concerned about the lack of trust that had developed over the years. OHC managers had no confidence that MIS work would get done; much less meet their needs. Users and managers were not listened to, their needs were not met, and resulting applications were useless to them. MIS staffers seemed defeated even before taking on new work.

In early September, Marty met with the MIS Advisory Board to outline his plan. What he presented seemed logical enough that the Board agreed to support the approach. The remainder of this case presents his solution approach and its short-term results.

**5. SEEKING A SOLUTION WITH CUSTOMERS**

Parallel with his focus on managing MIS customers' expectations, Marty had to adjust the attitudes and expectations of the MIS teams. In fact, he needed to convince them that their customers were, in fact, their best sources for requirements information, and that MIS needed to learn to work well with customers.

Starting back in September, just as all the highly visible fixes were being implemented, Marty began assessing and talking about customer service within MIS meetings. For example, for many years, all requests for systems changes went through a formal process from the customer to IS. The details of the process were not customer friendly and so most of the requests ended up with a phone call to the single MIS team member who did embrace a customer service orientation. Marty understood that having *one* positive service path was better than having none, but that this organizational dependence on a single team member was risky. He would expand and reward the customer service perspective.

Marty asked each member of his MIS teams to give him the list of applications they owned. They were able to do this very well, because each team member had developed and maintained his/her own set of applications. Marty was quite concerned to see that all four of his team members had completely independent application-development and

maintenance responsibility. There was no cross training, and, if customer issues arose at a time when "the right" MIS team member was unavailable, customers would simply have to wait until that person returned from his absence. Marty was worried about the void that exists if any team member left for more than just a few days at a time. For example, he would have no one to support the legacy system if that key member left.

Marty decided to void all application ownerships and to convince customers to submit on-line problem and enhancement requests. He used this technique in order to vary the problem-solving mix for his team members. He wanted each member to gradually build familiarity and then expertise with a broader spectrum of applications. Marty also required all members to walk through the Clinic at least twice a week to talk face-to-face with the customers, and most obliged.

Marty needed to mitigate the risk of a programmer leaving, and decided to address that problem while also converting to a platform supported by SWU. Together with his customers, Marty identified and then fixed their long list of "wants" and launched a potentially risky plan to begin a complete new development of all applications. They choose to use a popular web application tool and SQL server to build the new applications in order to deploy increasing numbers of reports on the intranet.

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## 7. INITIAL RESULTS

In January 2003, MIS produced their first reports using the Web – a feat that sparked great excitement in OHC. OHC users were getting a new application and “They would talk to each other!” Toward this end, Michelle helped Marty out and has included him in monthly staff meetings with the Team leads of the clinic to help tie the relationship between the MIS team and the clinic. MIS team members have presented plans and conducted 1:1 training with the line staff on the future of applications in OHC.

In the months since then, MIS team has a new face and a new way of working. Those that embraced the new team focus and realized the value of superb customer service remained and one additional team member was added to help add new life. In Marty’s words, “We are a team that performs many informal tasks with the customer while maintaining very formal analysis and design concepts internally while we build new applications.” By design, the new web-based, customer-service orientation has resulted in the customer having just *one application* with much integrated functionality. In this manner, the MIS team is earning and maintaining their customers’ trust that

all components would “talk.”

In seven months time, the perception of MIS group has been radically altered. This is what the customers are saying, “They [MIS team] are ‘Movers and shakers.’”, “They are an extension of our [customer] team.” and “They are trustworthy and trusted.”

Marty is saying, “I have a new development team! We are producing a new application under a two-year \$500,000 agreement. We are happy in what we are doing, and our customers are increasingly delighted.”

With his years of experience in organizations, Marty understood that without the trust of the clinic, he would not be successful. His strategy was to focus 100% on informal processes and communication and to ensure the team quickly delivered highly visible but “technically easy” development wins.

### 7.1 Some Measures of Success

In the first few months of Marty’s tenure, users were requesting help on about two issues per day – each request could be for assistance on concerns ranging from major complaint or a minor annoyance. Each issue required some investigation and some attempt to incorporate the new issue into existing prioritized queues of work. Now, about eight months into the new MIS team philosophy, over 200 issues have been resolved and the team implemented has also implemented two new applications.

From the initial rate of 60 requests per month, the current rate is down to about ten requests per month. The MIS team spends less than 10% of the week maintaining the older legacy system, and over 90% of their productive time developing new applications using their formal SDLC process. The team now has three concurrent SDLC-driven projects underway, and is excited to be implementing rather new technologies (such as wireless networking) in these efforts.

A major philosophical change involved making the customers responsible for their own destinies as they increasingly took ownerships of the systems. A medical management team meets monthly to look at all the requests and proposals on the table. This team decides what is to proceed and what is not and determines priorities and tradeoffs among themselves.

With this type of user-manager control another benefit arises. Users understand more clearly that when they change (increase) the priority of one project, they need to reassess the overall impacts on time, cost, and quality objectives for that project – and other projects currently underway or in queue.

Collectively, the team has developed and expressed their expectations matrix as shown below (adapted from Whitten & Bentley 1998). Using this matrix approach, only one characteristic can be identified as the one to

“maximize” (or, in the case of cost, to minimize). One measure can be constrained, and one measure must provide the degrees of freedom to satisfy the other requirements, and thus one measure must be accepted.

	Maximize	Constrain	Accept
Quality/Scope	✓		
Cost		✓	
Schedule			✓

Using this explicit type of communication tool, the managers can easily discuss the impact(s) of changing any of these measures for a given project. The change may impact just that one project (for example, an increased scope might well result in schedule delays); or the change may impact the resource allocations across projects.

While much of Marty’s focus was on improving the “customer side” of the customer-IS relationship, he also tried to address the MIS side. For example, the cross training was presented as an opportunity to learn more than one’s original narrow set of applications. To further that goal, team members were taught to engage in peer reviews of one another’s work. While the idea was a bit intimidating at first, members soon came to value the tips and tricks they could learn from one another and could reuse in their work. MIS team members were also quite receptive to enhancing their own professional development, since the MIS field remains highly competitive. They were given time to develop new software skills and to test some new technologies.

Marty believes that the successful turnaround in customer-IS relationships results from both sides working to rebuild trust. Marty had a team willing to change and a customer starving for attention. Medical has become a fun place for MIS members to work, and the team seems to genuinely enjoy working with their internal customers once again. They give us great challenges to help them solve.

### 7.2 Looking to the Future

It’s another sunny, blue-sky afternoon in the desert Southwest and Marty Coles, the project manager of Medical Systems Support (MSS) for Southwest University’s (SWU) Occupational Health Clinic was feeling pretty good about his team’s most recent project. There were plenty of technical challenges ahead but to him, the most significant barrier to MSS success in recent years had crumbled. His main concerns now were to effectively manage the users expectations and to continue to deliver flawlessly on commitments made to them. He knew there were pockets of skepticism remaining and he knew, now that some major fires had been doused, ambitious new goals might be set for his team. How can he sustain the momentum? How can he preserve the morale boosts that are accruing? How can he change the MSS self-perception and the perceptions of their customer

base long into the future? When might he and his family get the long-overdue vacation they’ve been planning for?

### 8. REFERENCE

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### AUTHOR BIOGRAPHIES

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