

Improving Performance Through Personal Mastery

A Case Study with Fairchild Semiconductor



by Timothy A. Jacob, Lara H. Nuer, and Elizabeth C. Guman

One of the wonderfully uplifting aspects of performance engineering is, in the words of the “father” of performance engineering Tom Gilbert, its “humane and practical view that poor performers usually have a great potential.” Yet time and time again we design a promising performance intervention and carefully implement it—only to gain mediocre improvement. Where is this great potential? How do we tap into it?

This is the story of a unique performance improvement intervention involving a division of Fairchild Semiconductor, an organization that faced a huge performance challenge. Over many years Fairchild had tried various state-of-the-art interventions to improve unsatisfactory performance. One and a half years ago they began a journey using personal mastery tools to unleash the learnings from all these interventions. It is a story with dramatic performance results and promising potential for improving human performance.

The Performance Challenge

Fairchild Semiconductor is the only global company solely focused on the design and manufacture of high-performance, multimarket semiconductors. The company consists of several business groups: the Logic Group; the Analog, Mixed Signal and Non-Volatile Memory Group; and the Discrete and Signal Technologies Group. This article involves only one of the divisions, Logic and its Product Development Center (PDC).

The semiconductor industry’s customers, especially in the personal computer market, change their products every 90–120 days. Customer expectation for quality, performance, and service increases each year, while the willingness to pay premiums for these improvements decreases. For the past ten years the Logic Group’s average product development cycle time from design start to a salable product was 300 days, with many products taking two years. Clearly, Fairchild had to dramatically improve product development cycle time to remain competitive in the market.

This article is dedicated to the memory of Claire Nuer, (March 20, 1933–March 26, 1999). The founder of Learning as Leadership and pioneer of this methodology, Claire made everything in this article possible. She will be missed.

Over the last decade the product development organization developed skills in project management, leadership, problem-solving, teaming, systems thinking, and design of experiments to name a few. The result was modest at best, improving product development cycle time to an average 270 days.

Two years ago the PDC began an intensive approach to personal mastery as developed by Learning as Leadership (LAL), a research, training, and consulting firm in San Francisco. Personal mastery is one of Peter Senge's learning disciplines from *The Fifth Discipline*, a handbook for building learning organizations. The LAL interpretation of personal mastery is "the ability to achieve our vision through recognizing and addressing our individual and team obstacles." LAL's workshops and coaching were designed so that the PDC members were able to see how their individual patterns of behavior stopped them from making use of their collective expertise. After a year of using personal mastery tools as the main catalyst for changing the system in which they operated, the recent pilots achieved unprecedented cycle times of 90 days—a result far beyond their wildest dreams.

The personal mastery journey began with three PDC employees attending the "From Personal Mastery to Leadership" seminar in 1997. Six others attended the seminar six months later. Three of them consequently participated in the One-Year Leadership Development program. They coupled the training with individual and team coaching. As part of this one-year program, they started building a case study around their experiment with product development cycle time (see Figure 1). The following account describes how the PDC members (see Figure 2) became aware of their limiting beliefs and behavioral and communication patterns and how addressing these issues opened the door to innovative change.

Recognizing What Limits Us

The Issue

Rik was a member of the PDC cycle time team that was chartered to investigate how to reduce product development cycle time. He was becoming frustrated because the team was continually pointing its collective finger at factors outside of its control as to why reduced cycle time was not

What	When
• <i>First Group to Personal Mastery Seminar</i>	August 1997
• Recognizing What Limits Us	September 1997
• Identifying Where We Lose Time	February 1998
• <i>Second Group to Personal Mastery Seminar</i>	February 1998
• Building Relationships and Expanding Our Reality	March 1998
• <i>Second Group to Time Seminar</i>	April 1998
• Achieve 85-day cycle time	May 1998
• Confronting with Compassion	May 1998
• Changing Culture with Vigilance	May 1998

Figure 1. Time Line.

being achieved. They felt the key cause of the problem was how they kept putting more new products into the product development flow than the development team was capable of producing. The team zeroed in on a solution called Starts Control, which would limit the number of products inserted into the development line, thus lowering work in progress and allowing more focus on current work.

In Rik's opinion, the Starts Control solution would not have the desired effect. He believed they had to fundamentally change how they did their work to make the kind of changes to cycle time that they wanted to make. Rik saw the possibility of making significant changes in their process based on an experience from his own group. He had experimented by challenging his group to take a process it owned, that had been running an average of 13 days, and reduce it to two days. The experiments were successful, though a lot of doubters said it could not be done. Not only was it demonstrated once, but the second trial hit a cycle time of 18 hours.

With this knowledge Rik could start looking at the whole product development process, and repeat the success. A number of times he suggested looking at the problem differently, but he met a lot of resistance from his colleagues on the team. To them it felt like "teaming," and they had already tried teaming interventions without result. They did not want to do an experiment on themselves; they wanted to do engineering experiments on technology. Rik became very frustrated and withdrew. "I know this will work, but if they don't want to do this, the heck with them." Nevertheless, his exposure to the tools of personal mastery kept him going.

Who	Role
Rik	90-day cycle time team member and initiator of idea
Michael	90-day cycle time team leader
Tim	PDC Co-leader (Rik, Michael, and Terry's manager)
Terry	Learning historian 90-day cycle time team
Mike	Learning historian 90-day cycle time team

Figure 2. Profiles.

The Coaching

Rik spoke with his coach, and together they looked at his experience. She asked, "Why are you withdrawing? You believe something needs to be done, and you believe it very strongly, so why aren't you pushing forward?" His reply was that he was afraid. His initial suggestion had been rejected, and with this rejection of his idea he felt personally rejected, and therefore alone with the project. But his coach helped him realize that his desire to avoid being rejected was keeping him from sharing ideas he firmly believed in and that the cost of letting his fears drive him was that he was not pursuing his goals. It took two or three more times working with his team to get them to the point where they finally agreed and said, "Yes, let's do this experiment. Let's look at the problem of developing new products in a different manner, and see how we can get products done in 90 days."

The Pattern

Part of the personal mastery methodology involves bringing to the surface our survival mechanisms, the thoughts and beliefs we developed as children and carry with us today that get in the way of our creating what we want. Rik learned early on that to be included, not rejected, meant not rocking the boat. This attitude of not rocking the boat became an unconscious automatic response, a pattern that, on the surface, kept him in his comfort zone but was really leading him directly away from what he desired to create.

Uncovering patterns and learning to function outside the knee-jerk reactions that make up our dysfunctional mechanisms is the fundamental basis of LAL's personal mastery process. The work involves discovering the pattern, becoming aware of how it functions, and the consequences it has on ourselves and others. Individuals are then able to choose between following the pattern or responding differently. Rik was not purposefully doing the opposite of what he wanted; he simply was not aware of what was driving his actions. So one of the first steps to improving performance with

personal mastery is gaining awareness to break through those habits of thought and behavior. The next step is practicing the new behavior repeatedly. Coaching can provide the push to take a risk, consistently behave differently, and achieve results more in line with important goals. Repeatedly changing behavior with good results creates a new path for our internal thought process.

The Result

By recognizing his limiting pattern of withdrawal and overcoming his fear of rejection, Rik was able to express his idea and challenge the team to look at what they could change. This shift resulted in the birth of the 90-day cycle time project.

Identifying Where We Lose Time

The Issue

Michael is an engineer and works as an individual contributor in the product development process. Prior to beginning the work on personal mastery, he would complain about lack of progress in the PDC or about what was not being done, but he never really involved himself in trying to change the situation.

After his experience with the personal mastery seminar, Michael decided to get involved with the 90-day cycle time project because he was interested in managing and leading a product development effort. He participated in the design of the experiment to develop a product in a different manner and was named project manager of the initial trial.

In his early experience as project manager, Michael held daily meetings with his team as to the status of the project. At one of these meetings he learned that part of the project they were working on was delayed by inaction, and he became upset. He started by asking why no progress was made and telling the team how they should do their work, in a typical command style of management. This exchange alienated his team, resulting in less work being done and even longer delays to the project.

The Coaching

After this incident, Michael reflected on the situation, reminding himself that his goal was to create a cohesive team. He observed that his behavior in the meeting was actually creating an environment of mistrust and reduced team cohesiveness. Michael asked himself, "Why did I react by lashing out at my team?" Working with his coach, he realized he wanted to succeed as a project manager and feared that a failing project would reflect poorly on his com-

petence. He clearly saw that by blaming his team for not getting the work done, he was creating an environment that was demotivating to his team and in direct conflict with what he wanted to create.

The next day at the followup meeting, he apologized to his team, telling them, "I should not have reacted to the lack of progress on the project by blaming the team and telling you how to do your work. What I really need to understand is how I can support you to get the project done. Do you have the necessary resources? Are you clear about the next steps?"

From that moment on, he strove to behave in a manner that was consistent with his goals. When the team achieved results that were not to Michael's liking, he shifted out of fear and over-reaction and focused on supporting the team. Michael was able to align his team because he talked with them at a human, compassionate level, not as a commander from above.

The Pattern

Michael's initial reaction of blaming others was an unconscious attempt to protect himself from being judged. If this project failed, others might judge him, the project leader, as a failure. In this case, his behavior was all the more damaging because he was in a leadership position, with more power and influence than when he complained from the sidelines. He pushed his team away from him and away from becoming a cohesive working unit. With support from his coach, however, he reflected on what transpired and why it happened and developed a plan to bring his own behavior back in line with his true goals.

The Result

Michael's story shows how time is lost in any process because of our reactions. The cycle time of his second project improved because his team members were aligned with his goal, both intellectually and personally. Michael treated them with respect and concern and they responded by being focused on their task. In addition, he became more involved in the company, acting as an agent of change within the corporate community, instead of standing on the outside looking in and throwing stones at it.

Building Relationships and Expanding Reality

The Issue

Fairchild Semiconductor is set up with departments and groups that provide checks and balances in their business

process. The product line (PL) organization is responsible for developing new products and maintaining the financial health of the product. The quality assurance (QA) department provides a final review of new product releases, to ensure the quality of the product. Often, friction existed between the PL and QA departments, because to PL it seemed that QA held products back, while PL tried to move them forward.

PL was trying to release a family of products that, although it met all of the customer requirements, had problems with one of its electrical performance characteristics. In meetings with QA, one of the PL directors, Tim, was trying to convince QA to release the product. His method was to debate their intuitive concerns about the product's performance by countering them with reams of data. The conversations were heated, with both sides mistrusting the other. Tim's approach was to go in with both barrels blazing: "Look, the customer wants this. Why are you getting in the way? We have all this data showing why the customer wants it. So release it." In one case, the disagreement escalated to the point that some of the VPs became involved. After five weeks of arguing, they finally reached an understanding. As soon as the conflict was resolved, however, another set of products with a similar issue appeared on the horizon. Tim said to himself, "I don't want to repeat this experience again. There's something wrong with this process."

The Coaching

Before embarking on the process of getting this second group of products released, Tim reviewed the issue with his coach. They outlined the confrontational behavior Tim exhibited in response to challenges the QA managers raised. His coach asked, "Well, what was driving you?" Tim replied, "I had to be right. I had to win the argument. My job is to push the product through. That's what everyone in my department is looking to me for: Go in and resolve the problem. I can't come back empty handed." The coach then asked, "Well, why did you go in arguing?" Tim responded, "Because I had better data. I had the right answer, of course." "Well, what's your working relationship with these guys?" Tim said, "We don't trust each other. We are on two opposite sides of the fence, and that is the way it will always be." His coach then asked Tim one simple question: "Is that what you want?" Tim paused, then replied, "No, I want to work with these people so that I understand what their concerns are, and they understand ours, so that we can come up with a mutually beneficial decision. We can't be successful as a company if we release products that do not meet the specifications and cause problems for the customer."

With his coach, Tim sought clarity in what he wanted to accomplish. His goals were to remain calm and present during the conversation—not escalate the conflict, focus on how he wanted to behave rather than the outcome (getting it his way), understand what QA's concerns were, and improve the PL-QA relationship.

Tim went to talk with the QA manager and said, "I apologize for how the previous problem got resolved. I think it took too much energy and wasted too much time. We shouldn't take five weeks to get it resolved. I would like to deal with this issue differently this time and build a trusting relationship. How can we have a trusting relationship unless you know that I am doing this in the best interest of the company, and I know that you are doing it in the best interest of the company?" The QA manager said, "Okay, let's look at

False consensus feels safe but is actually very dangerous, because it is an appearance of harmony that hides unresolved disagreement.

it." He explained his concerns about why he thought the product should not be released, and Tim listened. Tim asked when he did not understand, instead of formulating his response to the QA manager's concerns. Tim learned what the QA manager needed in order to feel comfortable about releasing the products: more and different data than Tim's group had given him. Then the QA manager listened to Tim. Tim told him why he thought they could release the product now and how he thought they could validate its impact on customers.

The Pattern

It became clear to Tim that his need to be right and get the job done was driven by the fear of being rejected by his supervisor and his group if he did not win the arguments with QA.

Additionally, Tim realized that when he focused only on releasing the product to the customer, his perception of reality was not complete. He lacked awareness of the QA perspective. With the support of his coach he sought to identify those filters that kept him from seeing the whole picture. He learned to stop fighting about being right and to expand his perspective so he could see other views.

He saw that true relationship building begins when members on a team or a project combine their different experiences, perspectives, and concerns into a more complete outcome rather than being torn apart by them.

The Result

The decision to release the products was made in one day instead of five weeks.

Confronting with Compassion

The Issue

As part of the effort to reduce product development cycle time, there was considerable focus on learning. At the end of each stage of the experiment there were two days of "corkscrewing," a debriefing to learn as much as possible from the last experiment before going on to the next. To achieve this learning, the group assigned two engineering managers, Mike and Terry, to be learning historians and to sit with the team during its meetings. Their role was to observe and document the behavior of the team, how issues were explored and decisions reached, so that they could be used as a mirror for the team and provide learnings for others.

The result of the first trial in the 90-day cycle time project was a cycle time of 85 days (68% reduction on an average of 270 days). The team was very excited with the results and was anxious to demonstrate that it could repeat the performance. However, it was planned that the team would spend two days reflecting on what had occurred, and learn as much as possible before moving on to the second trial. It is critical to perform this analysis immediately after completing an action to ensure the best learning, as delays reduce the value due to short-term memory loss.

The corkscrew was very intense. Over two full days people were asked to dredge up everything they could remember from the three-month experiment and then analyze both their own as well as their system's performance. During the corkscrew meetings, the learning historians noted the team was preoccupied with moving on to the second trial. The team spent the first day and a half reflecting on what had and had not worked in the pilot. They had focused on the development process, but not the process of how they were behaving or learning. Terry and Mike said, "You really need to look at the group and individual interactions," but the team did not want to. The team members were tired and thought they had already learned as much as they could about the process. So Mike and Terry acquiesced, "Okay, let's not do it." But they knew that by not pushing the team they were missing an opportunity for significant learning.

The Coaching

Mike and Terry did not want to push the team to complete the process because they feared their friends and colleagues would be angry with them for making them do something they did not want to do. Their coaches suggested that the Fairchild team had a disease called “terminal politeness”—they avoided conflict at all costs by not telling each other when something was wrong.

Both Terry and Mike recognized that they followed this pattern and had to make a choice. If they did not confront the team on its desire to avoid the process and move to the next trial, significant learnings would be lost. Mike and Terry chose to push the team. The conversation became very contentious and argumentative, but in the end the team agreed to finish the corkscrew.

The Pattern

Mike and Terry learned about the dangers of conflict avoidance. False consensus feels safe but is actually very dangerous, because it is an appearance of harmony that hides unresolved disagreement. There is confusion around compassion; we think that not confronting means having compassion for others. But actually the individual’s fear of being criticized and rejected drives him or her to silence. The personal mastery work helped Mike and Terry learn that real concern and compassion for others involves taking the risk to confront them with the consequences of their behavior. The challenge of direct communication lies in being clear on our intentions and not confusing confronting with arguing to be right.

The Result

After listening to Terry and Mike, the team saw that it had been acting in a manner that prevented them from fully reaping the benefits of the recent experiment. The team completed the corkscrew, uncovering powerful learnings, and were grateful for Terry and Mike’s commitment to their goals.

Changing Culture with Vigilance

The Issue

The critical issue that Mike and Terry uncovered during the corkscrew process was that the team was functioning within Fairchild’s cultural norm, which said, “You must be doing something productive at all times.” Sitting around talking about the last project did not seem productive to the team. Members wanted to start the next trial and prove they could repeat the performance. They were focused on the results.

The learning historians held the mirror up to the team to show how action oriented they were and how that limited their performance.

The Coaching

Using the coaching tools they had learned, Terry and Mike helped the team members understand their behavior. The team’s desire to move on to the next product development project was due to a fear that if a person was not working on a new product, he or she was inefficient and therefore vulnerable to being laid off. The shared belief in Fairchild’s culture was that “time away from executing on new products was a waste of time.” This belief was reinforced in the company’s various systems, including the reward system. The tactical response to this belief was to accept all new products into the development line regardless of whether people were ready to work on them. Fairchild had 100–120 products in development at any given time and was always putting more products on the line to alleviate this anxiety. Even though this directly contradicted the 90-day cycle time team principles, the team was falling into the pattern.

The Pattern

What is critical in this account is how the culture of the organization was so pervasive. This team was committed to changing the way it worked and following the processes it had created. The unconscious fear of being vulnerable if they were not working on a new product drove their response of pushing to start the next project even though the team was not prepared for it. The 90-day cycle time team was willing to sacrifice its success by not taking the time to learn from its experiences. By being vigilant, the learning historians helped the team avoid the pattern of jumping into the next project.

The Result

Thanks to the challenge by the learning historians, the team recognized its behavior and realigned on the original objectives and the fundamental nature of the changes it was trying to make. Team members went deeper into their corkscrew, learning more about the process and their individual behavior. These learnings were critical in reproducing the cycle time reduction on the next project.

Summary

Although Fairchild is enthusiastic about the results, the company knows that the journey of becoming a learning

organization has just begun. Since the first experiment, the team has completed 13 products at an average 113 days, versus the previous 270-day average. Of the 13 products, three have average annual sales of \$6.1 million, significantly higher than other products. Fairchild was able to win the opportunity to supply these products because of its ability to develop them from customer inputs and deliver them at the committed time. They still have a lot to learn to reduce it to 90 days, but Fairchild believes it can eventually reduce that to 75 days. The key to this process has been taking the time to learn from the past in order to improve on future performance.

It is important to remember that the performance improvement for Fairchild did not happen from the personal mastery work alone. The personal mastery work was the key

enabler to allow team members to fully implement all the technical learning and process interventions. By shifting their focus from obtaining the result (reduce cycle time) and functioning from their patterns, to learning to change their own attitudes and behaviors—bringing them into alignment with their goals—the team members achieved results far beyond their expectations.

This case study illustrates how personal mastery can be a key factor to improving the performance of our organizations. There are thousands of performance improvement interventions waiting to be fully utilized. More importantly, thousands or millions of people are working at far below their full potential. As these individual stories reveal, personal mastery is hard work. The rewards are great and far reaching. 🌟

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Timothy has a BS in Electrical Engineering from Rochester Institute of Technology and has studied organizational development for ten years through programs such as: Center for Creative Leadership's Looking Glass, Herb Stoke Associates' High Performance Systems, and MIT's Organizational Learning Center. Timothy completed the Learning as Leadership one-year program and has embarked on a second year to develop coaching skills.

Timothy lives in Maine with his wife, Mary Ellen Wilson. He came to Maine as an adventure during college and never looked back. During the warm months in Maine Tim and Mary Ellen can be found sailing the Gulf of Maine. He is interested in Japanese culture and is studying the language.

Lara H. Nuer is Development Director for Learning as Leadership, a training and consulting firm that

has pioneered a framework of personal mastery tools and practices applied in businesses around the world. Lara coaches management teams to address critical business challenges through personal mastery. Since 1983, she has supported the development of this methodology with its founder, her mother, Claire Nuer. A graduate from the Rouen School of Business in France, she has presented to diverse audiences in Europe and America and is a Member Consultant of the Society for Organizational Learning (SOL).

Lara, originally from Paris, France, is passionate about her work. Her dedication comes from the legacy passed on by her mother, Claire, who was hidden as a child in France during World War II and lost most of her family in the Holocaust. Claire Nuer's commitment has always been that we make important decisions today so that in 50 years there is a context of humanity for our children.

Lara believes that the work of Learning as Leadership can be a starting point for change and that if each one of us changes how we function individually, we can create a collective shift, not only in business, but in our families, our communities, and in the world.

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Elizabeth C. Guman is a consultant who specializes in helping organizations, teams, and individuals create business results through aligning performance with clear goals. In partnership with her husband, Peter Guman, their company, Learning & Vision Partners, helps organizations create the future instead of reacting to change by clarifying vision and goals and developing learning systems to address performance challenges.

Elizabeth received her master's degree in Instructional Design at Penn State Great Valley. A past president of Great Valley ISPI, Elizabeth remains active in the chapter. She has been a featured presenter at international, regional, and local professional conferences and meetings.

Her sons, Timothy and Aaron, provide a wonderful focus for her life. Elizabeth enjoys traveling, hiking, and camping with her family. A favorite pastime is meaningful dialogue with Peter or a close friend in a cozy coffee shop.

Elizabeth believes that business organizations can be major agents of change for a better world and is committed to being part of that change. Elizabeth considers the greatest leverage in her work to be herself and has been learning personal mastery through LAL for the past two years. She welcomes communication and can be reached at (610) 696-5708 or ecguman@icdc.com.