

Managing Your Boss and other obstacles to success and happiness at Xerox

A dilbertesque, tell-all account of the growth years at Xerox, naming names and opening closets.

Some of the Chapter titles:

Half the people in research don't understand zinc oxide. The problem is—we don't know which half

If in trouble, if in doubt, run in circles scream and shout! Change of scope, change of scope, change ...

Blame Grabbing as a way to the top (nearly)

Making Murphy's Law work for you

I'd give up, but I don't know who to surrender to.

If you can, do, if you can't, teach--if you can't teach, manage, if you can't manage, consult

The Law of Conservation of weasel words

Typical chapter contents

Making Murphy's Law work for you	The Art of asking stupid questions without seeming stupid
Tribus' Club of Webster speech	Six sigma and Harris
Sparicino's thumb	EDS question and Sparicino
	Dr. Saate's 12 books

Typical stories

Sparicino's thumb

When we did the 8200, the Swingline stapler selected by the East Rochester skunk works was theoretically perfect for the job and when we finished modifying it, I believe it was an acceptable solution, barely. One of its modifications was developed by TC Soong. As Swingline had designed the stapler, the points of the staple curled through the paper and took blood samples from anyone unlucky enough to pick the paper up by the upper left corner.

TC wisely ignored Creari's declared truth about how stapler anvils bend the staple legs. He found a way to slot the anvil so the stapler legs would fold flat and not curl back through the paper.. Mike Smith thought TC's modification was elegant. He saw it as a delightful way to demonstrate scientific engineering used to make better mousetraps. We packed the prototype off the 105 Executive Conference room. As Mike was holding forth on how elegant the modification was, Sparicino was playing with the powered stapler and at just the wrong moment, he fired it and power drove a staple into his finger. Subject ended, we never heard another word about the Swingline stapler

George White and Moses success

George White had a meeting in the 105 executive conference room. It was after Moses had been sequestered in 311 but it had not been going for very long. We were there for a totally different purpose than discussing Moses. Those at the table were Joe Marino, Sars McNulty, Dan Cholish (foggy on that one), Chip Holt (maybe), Gordon Taillie, and a couple of others. It definitely did not include Don Stephenson (who was Moses Program Manager) George gave us a pep talk on why Moses was strategically necessary, even if the probability was only 50:50 that it would succeed. (George liked to use expected value vs risk as a rationale for things.) He talked for perhaps 15 minutes, using an utterly flaky report some MBA type had done by interviewing area managers and such on Moses. George was convinced that he was being rational. Someone (I would like to believe it was me, but that may be tainted memory) said George--the probability isn't 50:50. its not even 10% There is almost no chance it can succeed! We went around the room and not one in that illustrious company would give Moses higher than 10:1 odds of succeeding. George, of course was appalled, I never found out how he handled that exercise in reality therapy. But life did go on--to disaster.

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Chapters:

Making Murphy's Law work for you

Tribus' Club of Webster speech

This recalls a Kurt Fey story. At one time Kurt worked for me but was assigned as a special personal assistant to Myron Tribus. At the time Tribus was head of engineering and Sparicino was up-and-coming. Myron sponsored work at MIT to do a model of an engineering organization along the lines of Forrester's Club of Rome model of the world. Most of Kurt's task was to follow this work. At some point as the project matured, Tribus gathered Sparicino and others in the 102 Executive Conference room and had them listen to the presentation he had just finished and was ready to take to Stanford, for the edification and wonderment of Xerox top echelon. Kurt was in attendance. His impression of Tribus' talk was that it was terrible. Disconnected, confusing, sophomoric, obviously so flawed that it was sure to earn the worst sort of treatment from a sophisticated senior staff. Kurt expected Sparicino to give Tribus short shrift, since he had little respect for the man anyway and regarded him as a mere obstacle to his own having the top engineering job. Kurt nearly fell out of his chair when Sparicino said: "Myron, that's wonderful. They will love it in Stanford! Do you have a date set for giving it?" Kurt says he learned more about the politics of high level maneuvering from that episode than he had gotten in his prior 10 years of working in industry

Mag brush and RCA royalty escrow

The Law of Conservation of weasel words

Double or multiple wiggle words

Conflicting or opposing weasels

Double negative words

Ambigol, a formal language for ambiguity

Blame Grabbing as a way to the top (nearly)

Art Phipps and the 9200 Spec

The Art of asking stupid questions without seeming stupid

Six sigma and Harris

EDS question and Sparicino

Dr. Saate's 12 books

If in trouble, if in doubt, run in circles scream and shout!

Change of scope, change of scope, change ...

Sandy Sigoloff and Xerox bid for Analex

George White and the electrostatic printer

I'd give up, but I don't know who to surrender to.

Half the people in research don't understand zinc oxide.

The problem is—we don't know which half

The inventor of reversal mag brush

Give me another inch

John Dessauer's prodigal son.

Action on the web

Lynn Conway and Carver Mead

The 8200: Just don't Issue the drawings

Fatherhood of the cookie Monster

Webmasters who make house calls

To thine own self be true, and thou cans't no be false to any man
Ray Zoppoth's camera in a 914

Ray Zoppoth was a mechanical engineer I hired just after leaving the arena of information systems and moving into copiers. The understanding I had with his former management was that from time to time Ray would be pulled back into their organization and would have a short special assignment, and that I was under no circumstances to ask or try to learn what he had done on the short special assignment.

That eventually happened. Ray disappeared for more than a week. When he reappeared, he checked in with me and at the end of the meeting, said—"Here, I thought you would like this." I was thrilled, until I hefted the Canon movie camera case and realized it was only a case. Nonetheless I was appreciative and still have the case today, using it to keep my phone line repair tools.

Reflecting on the odd gift and Ray's disappearance, I concluded what his assignment had likely involved. I knew perfectly well that I really didn't want to know any more about it and even wondered if the camera case could implicate the innocent in what had been done.

My realization was confirmed many years later when Popular Science ran an article which made the exploit very explicit. No pussyfooting about it. It was now completely public. Here is a quote from one of several web pages which replay the other side of this story.

Spooks in the machine:
the CIA's most successful
spy may have been a
Xerox repairman.

The CIA's Xerox Spy-cam

by Jon Elliston
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Remember the chatty, irritating "copier guy" from Saturday Night Live skits a few years back? The character (played by Rob Schneider) drove his office-mates mad with cloying catch-phrases in the copy room. The exploits of the CIA's "copier spy" would have exasperated Soviet diplomats in the United States even more, had they known of the espionage equipment stashed under the glass of their Xerox machine.

An article by Dawn Stover in the January 1996 issue of Popular Science details for the first time the top-secret operation that provided U.S. intelligence with duplicates of sensitive Soviet papers. The story of the clandestine copying begins in the early 1960s, when Soviet diplomats stationed at their country's embassy in Washington, D.C., enjoyed the best office equipment capitalism had to offer. Among the handy American devices at their disposal was the Xerox model 914 photocopier. The machine was a modern marvel in its day, the first automatic, push-button unit available, spitting out plain paper copies at a blazing 7.5 pages per

minute. But the Soviets were not aware of one of its "undocumented features": their trusty 914 doubled as a CIA spy machine.

In 1962, according to Stover, the CIA quietly contracted the Xerox company to design a miniature camera, to be planted inside the photocopier at the Soviet Union's embassy in Washington. A team of four Xerox engineers set to work in an abandoned bowling alley and built a working model -- a modified home movie camera equipped with a special photocell that triggered the device whenever a copy was made. In 1963, the tiny Cold War weapon was installed by a Xerox technician during a regular maintenance visit to the Soviet embassy. On subsequent visits the Xerox man retrieved and replaced the film.

Stover's account of the operation is based in large part on interviews with Ray Zoppoth, a retired mechanical engineer who had a key role in designing the spy camera (Zoppoth was even issued a secret patent for the gadget). The CIA and Xerox remain tight-lipped about the operation, but Stover was able to confirm Zoppoth's story with others who worked on the project.

The operation was a smashing success, and Stover writes that the Xerox surveillance of the Soviets may have been just the tip of the iceberg. "Judging by the number of parts ordered from Xerox, Zoppoth believes that spy cameras may have been installed in photocopiers all over the world, to keep an eye on U.S. allies as well as enemies."

While the operation was certainly innovative, the Xerox-cam was created in the tradition of other CIA "technical penetrations." During the early 1970s, the Agency bugged the home of South Vietnamese President Nguyen Van Thieu using televisions and furniture implanted with hidden microphones. For several months in 1972, CIA counterintelligence monitored Philip Agee, a former agent who was writing a tell-all memoir of his time as a spy, using a bugged typewriter given to Agee by CIA operatives posing as supporters of Agee's work.

Today the James Bond-ish mystique of intelligence gadgetry is promoted on the CIA's official website, where a historical collection of spy-gear features several special cameras used by U.S. operatives, including a matchbox-size Kodak and a "microdot" camera used for producing tiny images of documents.

The high-tech spy wars continue. Despite the end of the Cold War, "the scale of U.S. surveillance and counterintelligence efforts [against Russia] may have actually increased," Washington Post reporter Michael Dobbs recently wrote. Nowadays, of course, far more advanced monitoring

devices are trained on the targets of the United States. Dobbs reports that "surveillance cameras are permanently trained on the Russian embassy, recording all who enter and leave the building." According to Ronald Kessler, an independent intelligence expert quoted by Dobbs, the FBI uses advanced "Nightstalker" airplanes fitted with infra-red vision equipment to peer down on suspected spies at night.

As spy stories go, the Xerox operation is a rather tame one -- Tom Clancy probably won't be retelling the copier saga in his next geo-political thriller. In the broad history of Cold War espionage, the operation will likely be considered an interesting but inconsequential footnote. Though more flashy operations will receive more attention, Dawn Stover points out that at least for time, "the United States' most effective spy may have been the most unexpected: a Xerox repairman."

Sources:

Dawn Stover, "Spies in the Xerox Machine," Popular Science, January, 1997, pp. 68-70.

Michael Dobbs, "Spying Remains Hot Game in Post-Cold War Washington," Washington Post, December 24, 1996, p. A4.

Jeffrey T. Richelson, The U.S. Intelligence Community, Third Ed. (Westview, 1995).

Philip Agee, Inside the Company: CIA Diary (Bantam, 1975).

Becker vs Phipps and the 9200 recovery
Horace and Sherwood go to the Philharmonic
Becker is a hard act to follow our speeches to the Multinational Maintenance Council

Pecking order

Bhagat's law suit
Ranking Xerox Managers
Coaching John Gardiner

There are more things in heaven and earth, Horatio

Henry Reuter, Renegade Xerographer, Chief Engineer for each of the Seven Dwarfs
John Diebold's recommendations to buy EOS, University Microfilms and a Fax company
New Part numbering system
Lockheed, CADAM, and Versatec Expert 2000

Parting is such sweet sorrow

Leaving George White
Passing off John Caldwell

Hiring Affuso, keeping him

When I got the bug to get Xerox engineering into CAD/CAM, I made a presentation to Mike Smith which earned me the honor. Mike told me I had to hire an expert. We searched all over. My best candidate was a PhD mechanical engineering guy from Detroit who passed on all counts EXCEPT he sort of fibbed about why he was leaving his last job. Actually, on reference check, we determined he had been asked to leave already, and the reason was an unwillingness to work more than 40 hrs a week. Meanwhile his colleagues were working 60 or more. George Cook from Manufacturing sent me this unknown persons resume several times. The first couple of times I passed over it. He had no degree. He had been a contract designer until recently. I figured Smith and the rest of the crew would eat him alive. I finally interviewed him (It was of course, Affuso) and I became convinced he could do the job. I took the pains to get a committment from both the model shop management and drafting management that they would take him if he fell on his face.

With much trepedation, I brought him in to first lead the CAD/CAM automation of the Layered Processor, (Hal Harris' last engineering design program) and then to lead the CAM half of our CAD/CAM acquisition. I also maneuvered to get him a degree and my plan was to get him on to the U of R MBA program to keep him occupied enough to not leave. He left. I think if he had reported to Frank Pipp directly, it might have been possible to match his EDS offer (and I did consider talking to Pipp to see if that was remotely possible)

Anyway, he left and the rest (as they say) is history. Ref: eds.com: [Tony Affuso](#)

Anthony J. "Tony" Affuso is president of the EDS PLM (product lifecycle management) Solutions line of business. PLM Solutions develops software to support the collaborative engineering and manufacturing of products in the automotive, aerospace, consumer products, high-tech, retail and machine/tooling industries. PLM's core solutions provide breakthrough productivity for 24,000 customers around the world. The line of business operates globally, employing 5,250 people, with 140 sales offices and 23 R&D centers located in key cities throughout the world. He also is a member of EDS' Executive Operations Team.

CCI, spinoff and employer

My own exposure to disloyalty came within a few months of coming on board. Some of the crew that was hired to populate building 800 were in a class by themselves. After observing a trio of refugees from IBM who had come to Xerox to hide out after making a private bundle on their insider knowledge of an IBM deal with Fairchild, I was nonetheless shocked when, within one stressful week my little group had four defections to form the Pittsford firm: Infodata and Ed Nutter led another four or five from the larger group off to form CCI. I thought that CCI was the worst example of degenerate corporate spinoff ever--UNTIL, they became the employer (many years later) of my wife, my daughter, and my son. After that I thought, well maybe they aren't so bad, after all. When CCI's whole computer operation came unglued and they dissolved their Rochester facility, they gave my wife a complete local area network with minicomputer server and several terminals. It was on that basis she formed her own company and became a training subcontractor for Xerox and Kodak. By that time of course, Nutter and all the original CCI principals had been screwed by a couple of corporate takeovers, so there was no personal relations fallout in these results either way.

McAuto and their CAD/CAM

Jack Flannery and I worked as two in a box in the elaborate acquisition process we followed to select a Xerox wide CAD/CAM system. Our vision was to tightly integrate the design process with manufacturing. This led us to aim for a product which had a wide range of software encompassing both graphic generation and fabrication of parts using Numerical Control. Eventually this came down to a three way tug of war between ComputerVision, McAuto, and Intergraph. ComputerVision was established in Xerox, had an excellent performance and a range of offerings which did everything that we needed. Unfortunately, we believed (it turns out correctly so) they would be out of business in a few years because of their dead end architecture which gave them no way to compete as other suppliers adopting Unix based platforms. McAuto was much more capable in Numerical Control and was positioned properly to grow and expand. Intergraph had essentially no capability for Numerical Control software but had adopted a workstation strategy which gave them as much speed and capacity as Intergraph, far more than McAuto, whose current and near term foreseeable products would have been very poorly compared with the existing Computervision products already in use inside Xerox. Eventually, we decided the Intergraph was the way we had to go. I told myself, "The draftsmen using ComputerVision today would lynch me if we went with McAuto. They couldn't do their job."

Thinking that was one thing. Explaining it to a tough minded Irishman who was the McAuto CEO was a different matter. They visited us just as we were reaching our conclusion. I went in the car with Mr. Clancy, as we drove from the Xerox Webster complex to our Henrietta facility. I decided there was no better time than then to explain our decision and why we had not picked McAuto as the CAD/CAM supplier.

The discussion did not go well. Mr. Clancy was surprised, annoyed and aggressively resistant to the idea we would select another supplier. I explained that, from our point of view, McAuto's offering was simply not robust enough to support a room full of designers and draftsmen, developing the design of a complex copier.

That did it. In exasperation, Mr. Clancy said: "If McDonald-Douglas can design jet fighters with Mc Auto, Xerox sure as hell ought to be able to design a copier!" End of discussion. End of meeting, End of friendly relationships.

Several months later, on a tip from the Intergraph salesman, I called the Xerox Account Manager for McDonald-Douglas and explained my concern to him. How well did McAuto do in designing jet fighters? Was the airplane design end of McDonald-Douglas happy with their choice of product from their CAD/CAM supplying division? He acknowledged he had multiple contacts within the company and would check out my questions.

After a couple of promised phone calls later, the Xerox Account Manager said that he had been unable to verify the story because McDonald-Douglas put up a screen and left him in the dark—BUT, his inference was that they did not use McAuto CAD CAM for designing airplanes. They did not, however, want anyone on the outside knowing this. hmmm....

Error propagation in Design

I have a simulation model for build-and-fix engineering programs which I keep offering to people. It simulates the flow of design errors and their correction through the multiple cycles of a development program. I would love to find a good customer for its message. It was originally conceived as a demonstration of the power of 6 sigma, the Motorola assertion that if a quality measure is observed and managed, "order of magnitude" improvements can be made "every six months" in its value. With less errors and better methods for their correction, the program could be completed in a year. For design engineering, a measure of quality is the number of errors on an engineering document. By modeling the propagation of these errors through the design, and modeling the build and fix method of finding these errors and fixing them, it is very easy to show why design programs take so long. It's tied to the number of design iterations that can be completed and the time needed to do all the steps of a good design. When run on my workstation the simulation graphically demonstrated that for consensus values of design errors and rates of their discovery, programs needed four years. Everyone who saw this model seemed to interpret it as a form of schedule predictor, like PERT. It couldn't possibly be used that way, however its use would be to compare strategies for large scale design.

Reading the above recently, Don Clausing said: I understand it, your simulation emphasizes the importance and difficulty of mistake avoidance. Does this help in some way to improve mistake avoidance?

To which I responded:

No no no. The objective of "my method" is to represent (simulate) what happens on a design program and to model what should happen if the process is conducted in a better way. Mistake avoidance may be the only thing that happens in many engineering design environment's and if changes are made to the process that only address mistake avoidance, then the revised simulation should represent the costs (in terms of schedule and cycles of procurement) and gains expected from just these changes to the process. A robust design meets specifications in all areas of its test space and manufacturing tolerance and failures to do so generate design changes. A robust design inserts additional analysis, simulation and testing at component, subsystem and system levels aimed at validation of the design. Each of these process steps identifies changes which must be fed back and coordinated with other areas of the design, to eventually produce a valid product. By accounting for the outcome that changes in one area create problems in others or that elements in one area of a design presupposed changing and possibly obsolete interfaces with the changed area, we create a model of the chaos that characterizes design. The proposed simulation of this provides insight as to what allowance must be made in the human factors to enable the engineers of a design team to handle this, and what are the effects on the process as a whole, are the "improvements" that is process changes are made. Its not unlike studying the human factors of a pilot who must cope with the many new features of a modern fighter plane. Without this war game, the redesigned engineering process is as much a "wow, is that what happened?" as the old process.

Said another way and succinctly--"How can we validate the robustness of the changed design **process**?"

It's who you know...

David Kearns and CAD/CAM

Lars Ulfspär's son-in-law

George White's son-in-law

John Browne's father-in-law

There's no such thing as a sure thing

Exeter, Decision Analysis and Mel Howard

No, my Exeter group was taught by Harvard profs. The decision theory material happened to be directly aligned with the technical approach I had used in my prior job at RCA designing reading machines. I became enthralled with the idea that decision theory had business application. I did a lot of extra work, exploring this (for me) amazing insight. At the culmination of the course, we split up into teams and ran competitive business simulations, war games style. Mel Howard was the President of my team's simulated company. His ascent to great responsibility was largely in the future. At the time he might be termed a young comer. As a simulated business, our team ran rings around everyone else. When we left Exeter, Howard was sitting next to me on the bus. Fairly early in the ride to the airport, he said to me: "I was very impressed with your performance." Then he said: "Then again, considering your background, maybe I shouldn't be." I was so shocked at the coarse naivete of his second remark that I laughed in his face. He never said another word, the rest of the ride.

Myron's book on Decisions

Dr. Jacque teaches Basic

9200 success weighting

On the 9200 (aka Ardri at the time) my job evolved into explaining to Sparicino every Monday morning, the new machine failures that our testing had surfaced during the previous week. Sparicino's charming personality made my Sunday nights uncomfortable. It nearly became a full time job for a while, going around to each engineer who owned the failed subsystem and getting an understanding of what the failure was all about. It was particularly hard when the engineer didn't really know and tried to bulls hit me. If I had to go back more than once, my threat was: "look, I have to really understand this if you want me to explain it to Sparicino. If I don't feel comfortable, I'll have YOU come in and explain it." That generally got me all the information I needed. Ralph Tilly's guys liked to explain failures as hydrogen embrittlement, which was generally far enough away from Sparicino's areas of familiarity that he never probed very deeply.

Competency centers and football practice

Architecture is an extremely ambiguous buzzword. Software and computer systems types impute meanings for the word I have never comprehended. Reading Henderson and Clarks paper, they seem to have lumped all pure redesign under architecture.

I am trying to recall Competency Center days when it seemed to me that an incomplete recognition of what needed to be achieved with regard to:

- 1) defining the scope of each module and
- 2) knowing the complete range of variables that should be specified in defining its interface

was a disaster waiting to happen. I think my metaphor was a football team made up of individuals who practiced all year in separate places and only came on the field to play the game. (A little like the annual pro-bowl in Hawaii, now that I think of it) Extending that metaphor, I wonder what would be the outcome of a game between the worst team in the NFL and a collection of the best players from all the other teams.

Jean Parks and my tie

Mercurio and Tribus

Changing the subject--Shortly after I took over PHTC I was handed a memo from Tribus to Sparacino which said--*this guy Mercurio is a fake. Get rid of him.* At the time, my job was to improve the impedance match between the programs and PHTC and Mercurio seemed to have a good handle on talking to engineers on programs and showing them their problems could be treated more analytically. I used Behun to make sure he didn't get them in too much trouble. Myron's concern sprang from a memo from Mercurio to a program team, in which he was making a big thing out of a trivial mechanical relationship. Somehow Osborne and I cooked up a tactic which kept Mercurio from showing up on Tribus' radar screen and eventually the problem (and Mercurio) went away.

Goldman and TC's sports Mathematics 7

You might also find it interesting to know I once got a letter forwarded down the chain which originated with Jack Goldman who had replied to a critic personally. Goldman's note pretentiously explained that T. C. Soong's work on mechanics of sports was all part of what our scientists at Xerox did. He seems to have confused 147 with Parc. He missed the point that TC did all of that work (effectively) on his own time and that we did need a certain amount of exposure within the profession, which exposure we did not choose to create by showing Canon and HP how to do better paper path design. In this case, it was important to reassure Sparacino's boss (O'Neill?) that Goldman had no idea what he was talking about, so I composed a note for Sparacino saying roughly that. No idea how it was received