

EXCERPT FROM THE BUSINESS BOOK

THE CAMBRIDGE UNIVERSITY PRESENTATION (1997)

“THE STARWARS COMPUTER”



Written By: Jacob Sternberg

EXCERPT (U.2)

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“THE STARWARS COMPUTER”

- I picked this excerpt for a very simple reason – IT ILLUSTRATES HOW A “SAUSAGE IS MADE” in the real world of startup companies. The U.S. (a colossal economic power) breeds inventiveness, punishes violators of clear business physics laws and demands problem solvers.
- The Capitalist System is, in many ways, a merciless economic system. This excerpt touches on this theme and deals with RISK TAKING AND HANDLING SERIOUS CONFLICTS – both practical and belief-based ideological issues.
- This excerpt was presented to a premier university’s (Cambridge, U.K.) technology and management audience which knows a lot about inventions.
- Media coverage of the invention is provided in the manuscript titled, “The Ride on America’s Business Highway.”

THE CAMBRIDGE PRESENTATION (U.2)

[In a lecture hall inside are assembled the Presidents of the colleges comprising the University and members of the Technology and Science faculties.]

[Jacob is introduced by the seminar coordinator.]

COORDINATOR: “Good Afternoon. I have the privilege of introducing Professor Jacob Sternberg, who taught at New York University’s NYU-Poly Academic Unit in the early days of Computer Automation that swept the world. He was there from 1966 to 1970 and he says that he made the unfortunate decision years ago, about becoming an inventor (which he says he was “not too bad”) and a businessman (which he says he was “intolerably bad at”).

Now he is a senior consultant to Global Ventures Partners – an investment company running the American “Defense Enterprise Fund” which operates in the former Soviet Union. A friend of mine at this fund suggested that we invite Professor Sternberg because he has a fascinating story to tell from which we may benefit by listening to a true case study.

[Jacob approaches the podium.]

JACOB: “Good morning. I am very honored to be at Cambridge. I was always in awe of this Citadel of Learning. Without much ado, I will tell you a story and every so often I will entertain questions. It is a lengthy session, which will necessitate a break.

The main human characters in this story are:

- (1) A Columbia University professor – the inventor (“Professor S”)
- (2) The Columbia University Provost. (“Provost”)
- (3) An AT&T Vice President (“AT&T VP”)
- (4) I, your humble servant

The Institutions involved are:

- (1) IBM
- (2) AT&T
- (3) Columbia University
- (4) Fifth Generation Computers Corporation
- (5) DARPA (“Defense Advanced Research Projects Agency”).

I classify the above as “Four Giants and a Dwarf”

The Invention (“DADO”)

- (1.) DADO is a board having 32 computers, each with its own memory chip for storing data
- (2.) A cabinet that can hold seven more boards giving a potential to hold 256 processors. A larger cabinet can hold thirty-two boards, thus making it a 1024 processor computer.
- (3.) A well-functioning demonstration of DADO and its functionality can be demonstrated on demand.
- (4.) The demonstration indicates the phenomenal power of the invention.
 - An operator sits in front of an AT&T minicomputer, connected to a DADO Board.
 - The operator switches off the DADO Board and then types a string of letters that is supposed to represent a sound that might come from a human voice: ddaddouunderstandsspeak. Five seconds go by, then – at 17.9 seconds – the screen flashes “DADO understands speech.”

- The operator switches DADO Board “on.” The same string of letters is typed in – at 2.39 seconds, the correct interpretation appears on the screen. “DADO understands speech.”
- A chart on the wall indicates that:

<u>Number of Processors</u>	<u>Processing time (sec)</u>
1	61.1
32	2.4
128	0.75
256	near instantaneous

- Real time speech recognition is thus clearly within reach.
- Numerous military applications can straightforwardly be deduced.

Once the characters are brought into the story, everything gets complicated.

SUCCESS HAS A LOT OF FATHERS; FAILURE IS AN ORPHAN

- (1.) DARPA has provided significant grants to Columbia to encourage research. IBM and AT&T, who sit on the Columbia Board, have granted significant financial support.

- (2.) AT&T has, for decades worked on speech recognition, an important objective.
- (3.) Columbia paid Professor S' salary, provided him with research assistants, provided facilities and its well-deserved reputation which paved the way for Professor S' presentations. The university believes that it owns the whole thing.
- (4.) IBM already supported a competing invention in the physics department, making DARPA and Columbia happy.
- (5.) Professor S really believes that he owns it all, and has for months argued "ownership" with the administration. He openly accuses the individuals involved in the ownership debate with him as being older than the multi century institution.
- (6.) The majority of the faculty favors the university in the ownership debate because they define the role of the institution as a knowledge repository and distributor to the world for mankind's benefit.
- (7.) And then I come.
 - I was introduced to Professor S by another Columbia Professor (let us call him Professor YY because his name is otherwise hard to pronounce. His real name is Yechiam Yemini, who was associated

with an R&D company prior to joining Columbia. As luck would have it, I helped YY's company in many ways that Professor S would need to apply to be a solid beneficiary of his invention.

- In the past, I was the CEO of an R&D company with distinctive characteristics: (1) In spite of its small size (less than 100 staff), it had many projects, all technologically successful. (2) Most of the staff were individually smarter than the CEO in at least one required category to be technologically successful. (3) My R&D company actually worked with IBM, AT&T and numerous mega companies, all had distinctive "cultures." (4) I was for a short time (4 years) a professor at a university and understood, so I believed, how it thinks and functions.
- Professor YY arranged a meeting with Professor S. I strongly believe that the due diligence process must have a very rigid sequence: (1) People first, then (2) Opportunity, and finally (3) Key elements of the deal, or else. To avoid getting stuck, I told Professor S to rest from all verbal combat and intrigue for a few days, I'll be back with practical suggestions. It became obvious quickly that making the DADO Project a success (in one of many forms ...) required having a leader. The first action of the leader must be strict management of information.

THE PRELIMINARY PLAN

Professor S did not pass due diligence of any non-technical aspects facing the project. He kept yakking with his friends at DARPA, spoke to AT&T and the administration of Columbia for several days. I asked YY to deliver a message:

- (1.) Independent of your Brooklyn residence, your Sicilian ancestry and hot blood, you will: Stop all contacts with the administration and, for good measure, with any of your “buddies” – you have no friends – and they already ratted you out to me. If you follow the above, we’ll meet soon. If you don’t, lose my number.
- (2.) The only way you might conclude a decent deal for yourself is by having Columbia agree to a FAIR PROPOSAL COMING FROM YOUR SIDE.
- (3.) If you come to our next meeting with me, you will hear what such a FAIR PROPOSAL WILL BE, in outline form.
 - The first and most important step will have to be – and you know it – an interim leader who is able to construct and deliver to Columbia a PRELIMINARY PROPOSAL, JUST TO COLUMBIA AND NOBODY ELSE.

- If I am the interim leader, the following will be the skeleton of the deal:
 - All Intellectual Property Rights will be housed in C-Corporation – a normal, run of the mill U.S. company. This step will eliminate all arguments regarding ownership. Each owner will have a stock certificate. The most important decision will be the extent of the university’s ownership. This will be negotiated.
 - In addition to you personally and Columbia, the initial owners will be seed financiers. No company that I have anything to do with will be born without startup funds.
 - Good seed financiers that will be chosen will agree to the governance of the company (structure a board that can, due to a mix of business and technical savvy, be the leading policy arm of the company) and to the operating management structure who will have an allocated level of stock ownership.

(4.) Should we have a meeting soon, be prepared to receive more than just “skeleton deal structure. You will have to sign and adhere to keeping identified “confidential information” really confidential. I have tested the willingness of some financiers to join me in what could be an exciting deal. They would want to see, as would I, what you are made of. THUS, THERE WILL BE A “PARTY LINE” (as the Communist like to say), a proposal to Columbia – and after all that – a business plan to follow.

THE STARTUP MEETING

Professor S has agreed to all the elements of the message delivered by YY at my request. Having thought about this project for days before this meeting, I decided to propose:

- (1.) Columbia will own all intellectual property rights. This avoids ruffling the feathers of all who think that Capitalism stinks, and there are many of them in the academe.
- (2.) Having “won” this argument of ownership, they will be persuaded to agree to an EXCLUSIVE LICENSE with agreed upon payments and failure conditions assuring the cancellation of the exclusivity if we fail. To sweeten the pot, we will agree to minimum periodic payments and to commercial/financial performance targets. The last sweetener – the icing on the cake – will be share ownership in the operating company and a seat on the board.
- (3.) In “removing obstacles” department, Columbia will be persuaded to agree explicitly to Professor S being the Chief Science Officer of the operating company and own a respectable number of shares in it. The financiers will likely insist on it, which will help in the negotiations. By having shares, by being paid extra, by having de-facto and de-jure an important title, while he is still young, and by having a stellar university supporting his “Baby Project” is just a dream come true.

- (4.) Professor S agreed to my assuming the leadership in the negotiations with Columbia. The goal now is simple: Come to Columbia in about a month with “Our six shooter fully loaded with six bullets.” Deal structure, texts of agreements, commitments for financing from reliable sources and a skeleton operating plan including outline of the road to profitability.

Jacob proposed that one month will be sufficient to load the six shooter with six bullets and meet Columbia’s Provost. He asked Professor S to arrange such a meeting with the provost. The provost agreed to a face-to-face meeting with me provided that I present, in advance, a detailed agenda that she could agree to. I agreed to provide the information she needed and some more.

I recognized, instinctively, that the better the preparation for the meeting with the provost the sooner the deal will be alive. I delved into it.

It was not difficult to obtain a commitment letter from an insurance company. It took only a few days. I called a friend, an Air Force General who was friendly with the CEO of the insurance company. The General was a witness to exemplary performance of Veripen, my company, under an Air Force contract. There were numerous

occasions where Veripen could take advantage, as many companies did and do, to generate additional work and revenues. Veripen stuck to the right and narrow. The General, himself an inventor, developed a strong personal relationship with me. The General was going to submit a patent application. The process to be patented was going to allow efficient water cooling at a nuclear plant. He was missing some mathematical manipulations in his model. The General meekly asked if the “crazies” in CSC could try their hand to solve the problem. Typically, I told him that we do not have the “physics and nuclear expertise in his staff.” “But,” I said, “I’ll ask and see if, in three days, we can contribute to the solution.” As only luck could do, a guess lead to the solution. The General was ecstatic. He looked at me and asked, “How much do I owe you?” To which I replied, “Are you rich, General?” The man puffed up his chest. Nobody ever talked to him like this. Just as he was to reply, I quickly added: “General, what you owe me – based on what it is worth – you probably can’t afford, and what you can afford will make no difference to me. Hence, since it is close to Christmas, why don’t I just give this to you as a Christmas present.” The General realized that I was really happy to do it for him. He smiled and came over to give me a very manly tap on the back, “thank you.” Thus, when I called the General and invited him to New York to see “something exciting,” the man came to a demonstration, at Columbia, of a well-functioning parallel computer.

The General was no slouch. He quickly realized that the refrigerator-size contraption housed 256-computers arranged as if they were a

binary tree. At the top was one computer – really, a whole real one, consisting of a microprocessor, memory storage and communication components. This top one was connected to two computers – identical replicas of the top one, repeating, ad infinitum. The refrigerator size box had eight boards – each composed of 32 computer nodes for a total of 256 computers. What the general saw next was an actual demonstration.

This demonstration led immediately to the conclusion that with 1024 processors (32 boards) the result will be attained in real time with no discernable delay. In the computer science world of speech understanding, the real time understanding of human speech was a Holy Grail. AT&T has been working on it for many decades and it was likely to be in the best position to take advantage of DADO.

It was easy to deduce that each computer of the multi-computers array can hold a separate program and the same data can be passed through each computer providing simultaneous results. It is further easy to deduce that different data can be pumped into the computer array when each computer has the same program thus obtaining different results simultaneously. A simple explanation of the communications backbone allowed for rapid transmission up and down this binary tree array of computers operating in parallel.

Based on the demonstration and the presentation of potential military and civilian applications, the General made a few phone calls. One, in particular, to the CEO of a large insurance company produced the letter of commitment that I was seeking.

Following DADO demonstrations, additional commitments came fast. The commitments from Dreyfus, Olivetti were delivered within two days. It was very clear to me that based on past criticism of myself regarding the management of CSC, that the to-be-formed company will require a competent management team and a strong board. Tom Jones, a former IBM executive and then a key operations' executive in a major Wall Street company with whom CSC has done very successful business, has agreed to serve on the board, augmenting the key investors.

I am providing here a level of detail regarding this project far in excess of what you need to know. However, the showing of how this sausage was made might save you much grief when you develop policies and practices of capitalizing on technology developed in your colleges.”

COORDINATOR: [Breaks in.] Let us take a short 15-minute break. When we come back, we'll accept questions on what was said so far. If none are asked, we'll proceed to the conclusion of the story and accept questions at that time.”

[A break.]

[During the break, some people approach the podium. Short conversations occur. Attendees return to their seats.]

QUESTION: Why didn't AT&T just make Professor S a deal he would find hard to refuse?

JACOB: They could have made a big offer to Professor S. This possibility has, of course, occurred to them, and they didn't offer.

There are multiple conspiratorial possibilities. Many scenarios could have led to nasty lawsuits. I would lean to the simplest solution that AT&T picked. AT&T believed it had a leg up in being a player in this project especially in light of a thorough study they had which indicated that speech recognition will save at least 900 million for the "operator" function automation alone. Speech was their arena and they were the best at it. The truth, however, is that I don't really know the answer.

QUESTION: How big did you think the market was for this technology and what is the basis for whatever answer you give?

JACOB: The potential market is practically infinite. Because DADO machines could be linked to regular serial computers, DADO machines are thus a turbo enhancement to many applications, civilian and military. Fast data mining applications, fast sensor data capture from multiple sources, multiple programs (say one per a DADO processor, spread over 1024 processors) allows drawing multiple conclusions from the same data stream broadcast to each processor. Serial computers, no matter how powerful, cannot match parallel processing by a vast number of processors.

QUESTION: If the market is huge, and you demonstrated that prototypes work, how come I haven't heard about DADO and, I deduce you are not a billionaire.

JACOB: [Smiling.] You know how to hurt a Polish-born inventor like me. I came here to tell a true story about a fascinating technology and via the story, highlight to some extent of what not to do.

By the time I fell in love with this project, I ran, over a 15-year period, numerous high-value projects – all technologically successful – none, however, catapulted me high enough to be very rich. In closing this story, you may deduce some elements/factors involved in your question.

[Jacob deflected some technology questions as “off ramp” when attempting to conclude this story.]

JACOB: “I hope that we all are well refreshed. It took about a month to “load the six shooter with six bullets.” The meeting between the provost and me went well.

- I told her very briefly about my background. It took just a few minutes to convey that I had an extremely tough and hard to believe background. I insisted to assure her that I didn't come ‘from Mars.’
[She laughed.]

- Born in 1938, in Warsaw. I call the 1939-1945, the “Dark Period.”
- I am a Holocaust survivor. It does not define me in the least.
- In Salzburg, Austria 1946-1948, I received a three-year classical education by university professors who privately tutored me. Enjoyed significant recovery from WWII trauma.
- Spent 12 years in Israel; I believe that coming of age in Israel completed a full recovery from the “Dark Period.”
- As a member of the left-most Kibbutz, I got all the Marxism one can get in a lifetime.
- At an early age, I flew glider and small planes.
- I got private school education, was always first in my class.
- In the Army for four years, I was a Paratroop officer and an Intelligence officer and had my share of military action.
- In 1960, came to the U.S. In six years, became a Professor (Operations Research). In two more years, became an

inventor/entrepreneur. Ran several high-tech companies with clients who are “Who’s Who.”

- Made every business mistake one can when running technology startups and now I’m at it again, and older and wiser, we hope.
- The provost listened attentively. I told her why I was at this meeting. It is to achieve:
 - Columbia has something of high potential value and I want a modest piece of it. The university wants to own, keep owning and not relinquish owning all the intellectual property (“IP”).
 - Columbia will be willing to provide an exclusive license (“license”) to make, use and sell products using the IP, provided that adequate payments of royalties are agreed upon, and the conditions for license terminations are fully specified and agreed upon.

The license agreement specifies that as an inducement for the grant of the license, it shall receive a founding equity share in the company, and a seat on the Board of Directors of said company.

The license agreement specifies certain rights of Columbia to be in effect at a predefined startup phase. These rights will include: Concurring in the approval of board memberships, seed financiers and salaries and fees of key managers and consultants.

Columbia will agree that Professor S will become the chief scientist of the company, be paid by it, hold founding shares in it, in addition to his duties currently held at the university.

- The provost was a good and experienced negotiator. She was waiting to hear whether I understood and will deal with the obvious questions:
 - The formation of a startup company to affect the commercialization is a tall order. How will we do it in the face of the available evidence that a vast majority of startup die early.
 - Do I “get it” that the board of Columbia has some major companies (e.g. IBM, AT&T) who are obviously very capable – in all respect – to do the commercialization better than a mere startup.
 - How much difficulty will she be facing with a large contingent of the faculty and students who would not look kindly, ideologically, at the university to be so crass as the other capitalists who chase profits mercilessly. And what about the publishing mission of the scientists, members of the faculty, will it be affected and curtailed?

- I immediately showed her that I actually not only understood but was sympathetic to her position.

- I started where I believed the biggest “hurt” may emanate. The only way the faculty and the students will understand having stock in a private company is when the university is bequeathed it by a donor.

Commercial laws will cause a conflict that will be perceived, and may actually occur, as a limitation on university’s mission to disseminate knowledge.

Without engaging in ideological sophistry, I have some “killer questions” for those who fear a crass commercialization of the university.

I was gentle, kept my powder dry and just dealt with the idea that the Olympics were once touted as “For Amateurs Only.” It really never was. For a long time, a pretense existed and everybody involved participated in a silent conspiracy, knowing the real facts quite well. It is now “not a problem.”

- It should be axiomatically obvious that THE TECHNOLOGY WILL BE COMMERCIALIZED. For obvious reasons, it will not be by the university. It can’t be by the government itself.” The Soviet Union tried this angle and failed.” [I want to remind you that when the government tries such a trick, say in the production of shoes, you get periodically huge quantity of shoes

– ALL FOR THE LEFT FOOT. IT ISN'T EINSTEINS, EDISONS AND FORDS WHO GET INVOLVED. [“The Soviet Union could not compete and as we know now, it collapsed.]

If the government will not commercialize, it will obviously be some company who will have to do it. The company that I anticipate will do it well will be the one we propose – Fifth Generation Computer Corporation (“Fifth Gen” in short).

The Reasons We Can Do It Best Are:

- (1.) We are small, nimble, very fast, very knowledgeable. We graduated from “the school of hard knocks” – we made, and overcame, every business mistake before and have developed an immunity to sudden business illnesses. The good large and successful companies may have some of the above qualities, but not all of them.

I brought some data to justify any of the above claims. We encourage you to examine:

** Past achievements

- By CSC – the company I ran for 14 years:

*** Project Kirby – Medical System (original invention) sensors, hardware, software – invented, built and delivered in 16 hours. MY INVENTION.

*** Project Amex – Nationwide Communication System for IBM/AMERICAN EXPRESS. We delivered a nationwide communications system for large volume users. Designed, built software and hardware to handle all credit verifications in less than four months.

I told her about numerous other projects, including for military applications. I told her that I would welcome her doing a thorough due-diligence in which we will be glad to help.

- I played my trump card. I told her that I have, in hand, financial commitments from serious financial sources, savvy capital investors, targeted technology investors – all of them generated credible commitment following due diligence.
- I told her of the outline of the implementation plan, the timing thereof, the management team AND CONCLUDED THAT, IN THEIR BEST INTEREST, COLUMBIA SHOULD DEAL WITH AN EXTREMELY EXPERIENCED STARTUP TEAM AS OPPOSED TO A MAJOR COMPANY WHO'LL SPEND A SERIOUS EFFORT TO PLANT THE RIGHT FOOT IN FRONT OF ITS LEFT FOOT AND WOULD CONSTANTLY DOMINATE THE PROJECT.

It took six months to iron out the agreements after very significant due diligence by all. Fifth Generation was born.

I was pleased to conclude a major deal. I took several days off to run the Tel Aviv Marathon in Israel. In some ways, there was an omen hidden in this Marathon run. I arrived a day earlier, registered to run, my number was 100, drove to my brother's house in Holon just outside Tel Aviv. The house was in the midst of a sandy dunes area. In the evening, I decided to run a couple of miles. As I was running on the narrow roads crossing the dunes, I saw a big dog chasing me. I picked up a stick, stopped running and prepared to fend off the dog. "Not good for the Jews," I thought to myself. Just then, I looked back to check on the dog's position. The dog stopped his run and was leisurely proceeding towards me. All of a sudden, I stepped into a pothole and I knew that something terrible happened to my ankle. I heard some tearing noise.

I stopped, the dog stopped, and the ankle was swelling up. I could barely walk. With considerable pain, I limped back to my brother's house, got on the phone to some friends. One of them knew the physician for the Israeli National Soccer team. A visit to the hospital and the examination by the physician indicated that there was no way that I could make the next day's run. The ankle was just too swollen. My attitude seemed crazy to the physician who didn't mince words stating his position. I told the physician that this run was the fifth consecutive run and this must happen. I provided the physician with information suggesting that past physical efforts were more difficult. The physician was well aware of the yearly competition, involving all armed forces units running half a marathon with pack and weapon, mid-day in August, were grueling and that a 30-men unit, led by me won three years in a row. I laid

heavily on more details of previous extreme physical experiences. I simply asked for some sonar treatment, hot wax and good bandaging.

The race started at 7:30. It was very difficult. I was so worried about every step I made that I forgot to watch how much distance I already covered. I was first aware of the distance covered on Mile 24, just two more miles to go.

I finished the run in four hours and one minute, significantly slower than the previous four runs. I obviously was injured and worrying the entire run about my injury. The distance was gobbled up. Life was good.

JUST WHEN I THOUGHT THAT I DID EVERYTHING RIGHT,
LEARNED ALL THE LESSONS, ACHIEVED GOOD ORDER IN
THE LEGAL ARENA, CORRALLED BEHEMOTH
ORGANIZATIONS TO FOLLOW A GOOD SCRIPT, I
DISCOVERED THE FLAW.

WATCH WHO YOU TEAM UP WITH

The relationship with AT&T started with much promise. The AT&T business unit – AT&T Technologies, Inc. – was the “Partner” of Fifth Gen. This business unit depended on its “livelihood” on government contracts. Being devoted to the culture and the comfort of government research support (e.g. DARPA) to find defense-related solutions and government payment for implementing and operating the developed systems, AT&T was immediately proposing a wide-ranging application for DARPA funding of multiple developments using DADO.

For AT&T, it made excellent sense. A particular application of DADO was suitable for enhancing the basic DADO processing element (“PE”) consists of a general-purpose microprocessor, random access memory, proprietary direct memory access circuitry to control inter-processor communication, could be enhanced by the addition of an AT&T signal processor which significantly improves various systems used for defense.

It became quickly obvious that, very soon, the general-purpose microprocessor will become more powerful; the Motorola MC 78020 was already capable to process 14 billion instructions per second, memory capacity will increase and special serial processing element will easily be added to the PE. Since a working DADO system consists of many PE’s, the DADO system can become an enormously powerful component in many defense applications.

It also became obvious that highly significant improvement in data base searches (Data Mining) will allow DADO systems to function as “Turbo” component to augment extensive existing systems – based on a powerful host computer whose software was developed with vast effort and expense. By using DADO, AT&T could envision more government contracts in the non-defense sectors.

I was very uneasy about the approach of Fifth Gen depending on AT&T largesse supported by the government.

First, on May 28, 1986, Fifth Gen has entered into a contract with AT&T for a “quick” production of a demonstration prototype using DADO hardware to be made available to AT&T and software based on AT&T algorithms to prove the systems capability to recognize speech. Fifth Gen, under this contract, was to pay AT&T \$100,000 and obligate to pay an additional \$200,000 for a clear blueprint for moving from prototype stage to real useable products.

Fifth Gen entered into a teaming agreement with AT&T which called for a wide-ranging development effort to incorporate a signal processing element into the PE, develop enhancement to the operating system software and special defense-related applications software.

In numerous meetings with AT&T, I kept hammering a simple idea. ‘Why not,’ I said, ‘invest \$5 Million each, and launch the voice recognition application into the market quickly. My investors are ready to fork out the money. Your \$5 Million is peanuts for you. It is already established that you, AT&T, could save \$100’s of millions on the automation of simple operator functions. We are all going to be much older if we depend on DARPA alone for our corporate livelihood. With the fast success, I’ll take the company public and, before that event, we’ll settle on “low-lying fruit” applications (of which there are many).

The AT&T executives said some nice things about mulling over and coming back with concrete ideas. It became apparent that the culture of this AT&T unit did not allow for speedy decisions especially if the decision required spending their own money.

While the “schmoozing” with AT&T was going on, real work was progressing. Three types of “work” were in progress.

The work at Fifth Gen involved completing an improved version of the operating system prototype, generating plans for limited production of 8-PE boards, specifications for several applications’ software and serious propaganda literature.

The work of AT&T consisted of generating a lot of paper for the wide-ranging application to DARPA. Unfortunately, however, the AT&T technical crew – highly capable bunch – seem to want to prove to Fifth Gen that they could generate patents on their own without informing

Fifth Gen. It is somewhat understandable that AT&T is the elephant and Fifth Gen is just a small squirrel in the deal. So, as it turned out, the AT&T technical crew took its time, working on “their” patents. Dr. S, in spite of what he called his “Brooklyn origin” was insufficiently suspicious of the AT&T crew huddling constantly with him and milking him dry. As an academic – not withstanding his Brooklyn origin – he believed in the camaraderie of the researchers (in most cases, a myth).

The proposal to DARPA was completed and the teaming arrangement between Fifth Gen and AT&T was activated. The time tables in the DARPA arrangement suited AT&T well, but did not suit a hungry company at all.

I reported to the board my desire to speed things up by a lot. The speeding up of Fifth Gen’s development called, based on my views for the following:

- Under normal circumstances, Fifth Gen’s going public is an idea whose time hasn’t come. Some prerequisites are missing.

However:

- A worldwide exclusive license to commercialize (make, use, sell and sublicense) a valuable and promising technology

- An obvious direction for developing a market for various size turbo connections of DADO to host computers in time-critical systems in cumbersome data manipulation applications
- Existing contracts with AT&T for joint exploitation of voice recognition applications
- Existing teaming arrangement with AT&T re promising defense related signal processing applications with financing by DARPA.
- Solidly performing advanced hardware prototypes with two important qualities, (a) the component of each PE, especially the power of the “microprocessor” is certain to rapidly be available and (b) The hardware and kernel software improvements are known and implementation is planned and rapid.
- Given the talent and experience of its board, its advisory board, its operating management which has significant experience in running fast-moving startups and the uniquely nimble negotiating ability with Collosi – Columbia and AT&T – and the ability to rapidly organize a sizeable startup investment, the Fifth Gen startup looks, feels and is a business-credible appealing story.
- The business climate is favorable to “Gutsy” offerings.
- Recognizing that the AT&T “partner” may be too slow for Fifth Gen taste, the public offering will allow to coral other business partners.

Nothing in the correctly operative business agreement prohibits Fifth Gen to seek “low-lying fruit” applications partners.

I was given the green light by the board to seek and land a medium size underwriter for a public offering. To my surprise, Columbia believed, as a responsible stockholder, and supported the board’s and management’s views.

Fifth Gen spent significant monies in the preparation of a public offering. It took about three months in meeting medium size underwriters. The goal was to affect “going public” before the end of 1986. A preliminary prospectus (referred to in Wall Street parlance as ‘Red Herring’) was completed. Two things happened. The economic environment changed. Many a time the mood on Wall Street changes on a dime and, the underwriter botched up another company’s offering. Given the bad performance by the underwriter almost guaranteed that a Fifth Gen offering will fail to meet expectations.

With all the experience and analytical power available at Fifth Gen, the risk of an underwriter failing to perform was not taken into account.

I called an emergency board meeting and, based on the financial status of the company and the slowness of achieving the basic

objectives of the AT&T contract and teaming agreements, suggested that (a) I resign and transfer 2/3 of my shares to the treasury so that a strong CEO could be chosen for the company (b) Given that the company had sufficient funds to bear its expenses for over six months, the company could select a better underwriter and proceed with the going public agenda. The offer to resign was not just a gesture. I always prided myself on being a good detective of my own behavior and views. I explained to the board that I viewed my performance as a failure. “Liking me is not a reason to keep me leading Fifth Gen,” I explained. The board accepted my resignation and accepted my suggested replacement who was a board member, a former White House fellow, a graduate of Wharton Business School, an IBM executive, a former vice president of operations at a major Wall Street firm and a friend. Thomas O. Jones took over.

Much has happened at Fifth Gen since 1987 when Thomas O. Jones took over as President and CEO. Among the developments are:

- New patents were issued to Fifth Gen.
- Fifth Gen provided information under an NDA to AT&T under a contract paying AT&T for delivery of systems.

- Fifth Gen provided information to IBM under a contract, including an NDA and payment to IBM for delivery of systems.
- Both AT&T and IBM have infringed on Fifth Gen's patents. AT&T lost an infringement lawsuit in Federal court; Quest, another infringer, has settled a Fifth Gen suit.
- IBM has fiercely fought Fifth Gen suits in Federal District Court and in the Federal Court of Appeals. Fifth Gen lost both suits.
- Fifth Gen strongly believes that IBM has misled both courts and that the ending to the FGC saga has not yet been written.

There were some poignant questions which I handled straightforwardly.