

A Personal Recollection of Software's Early Days (1960–1979): Part 2

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The author, a pioneer in the early days of shrink-wrapped PC products, was also an early participant in ADAPSO. This article, the first part of which appeared in the *Annals'* October–December 2004 issue, traces the author's career from running the Software Products Group at Dun & Bradstreet to the early days of Vanguard Atlantic Ltd.

In part 1 of this article, I showed how early software companies simultaneously competed and collaborated. I also explained how IBM and other larger companies helped create an environment in which small companies could be born and grow but then, sometimes inadvertently, how those same giants squashed the smaller companies with their immense market dominance. In part 2, I expand on this theme, describing how the Association of Data Processing Service Organizations (ADAPSO) became the forum in which the independent software companies confronted this threat (and opportunity). I also illustrate, from my experiences on both sides of that ledger, how the bumbling of these large companies and the regular failures of corporate takeovers encouraged the creation of the modern venture capital system.

ADAPSO

Before IBM woke up to the negative impact it was having on the independent software vendors and, therefore, on itself, by the late 1970s, IBM's actions had already forced those of us in that business to unite against a common enemy. ADAPSO¹ had been around for quite a while by the time the software guys got involved in the early 1970s, and it was the most logical place for us software competitors and peers to come together to swap stories, lies, and gripes. In addition, we had no consensus about what we were selling, and ADAPSO provided a forum for debate that eventually led to a consensus.

What is software?

All through the early years of the software industry, we debated a seemingly simple question: What is software? The answer, once we could agree, would help determine our approach to intellectual property protection,

taxation, contracting, and public policy issues.

It was and is clear that software is a set of instructions that drive a machine, but is it itself a machine component, process, work of authorship, or perhaps simply something new and unique? Seemingly simple answers to each question are countered by examples that make the simple seem complex, for example, where software is machine generated, or embedded in the hardware or firmware, or in contrast exists only in printed form. Can machine-generated software be a work of authorship? Is a novel new process represented by software that is intimately integrated with a piece of hardware patentable as a machine component? If it is a machine component, does that make it tangible and thus taxable personal property? Is it like the holes in a player-piano roll and, therefore, prior to the 1976 revisions to the US Copyright Act, not subject to copyright protections?

These questions divided our otherwise tightly knit group, with some (like ADR's Marty Goetz) arguing passionately that software can be a machine component and thus patentable, something he pursued to the extent of acquiring for ADR the first patent on software. Others argued, like many of the state taxing authorities, that software is tangible in that it cannot exist by itself, and therefore, when recorded on a reel of tape or floppy disk, is taxable at the full value of both the software and the medium.

It took us years to reach consensus, and even today that consensus is far from unanimous. Let me give you my view, after more than three decades of debate, a view that I believe represents the majority view of the courts, legal establishment, taxing authorities, and—most importantly—the people who make and sell software.

Software is not a new or unique concept; it is merely a structured way of describing a

process. In many ways the holes punched in the 17th-century cards that drove the Jacquard looms, which, in turn furnished fabric for Marie Antoinette's Versailles, were no different from modern software written to drive a computer. And, yes, a piano roll contains "software" because a piano roll is, after all, simply a set of instructions that tell a machine what to do.

How the software was authored is irrelevant: whether by painstaking hand punching of cards for the Jacquard loom, by capturing a live performance to create the piano roll, or from the compilation of a series of rules written in some higher-level annotation for a modern computer. All are forms of expression for a set of rules that define a process. It is impossible to try to categorize these rules based on either physical representation (written, printed, recorded in some machine-readable medium or even spoken) or means of delivery (on a physical medium or transferred electronically). If we start with the premise that writing a song and writing a program are similar, the rest follows. The song is still the same if performed in a live concert, recorded on or played from a tape or disk, or broadcast over the airwaves. If we as a society want to protect the property rights of songwriters with a general intellectual property law, that law should apply to software as well. If a state taxes recorded music stored on tapes or disks as personal property, then software is equally fair game.

Similarly, as software is the description of a process—indeed, it is a precise enough description to actually drive the process—protections available to unique, nonobvious processes (like patents) should be available to software. In retrospect, the foregoing seems clear and obvious. In the industry's early days, however, it was anything but.

Absorbing the Software Industry Association

ADAPSO did not have any real presence in software until 1971 when it absorbed a small rag-tag band of software product companies that Larry Welke had organized under the name Software Industry Association. Jerry Dreyer, then ADAPSO's executive director, was anxious to move into software, and he created a sectional structure that let the data center guys have their space while the software folks had theirs. In 1972, another software group, the Association of Independent Software Companies (AISC), joined too. Once incorporated into ADAPSO, the software people gradually increased their power and representation. By the mid-1970s, ADAPSO was ready to back the software section and take on IBM.

Larry Welke

Larry Welke was as close to being the software industry's father as anyone could be, and he was the prime mover behind getting the software companies into ADAPSO. Larry was also the founder of Indianapolis-based International Computer Programs, a misnomer, because ICP was really a publishing house. ICP's first catalog appeared in 1967, the same year Tod Pontius and I founded Turnkey Systems Inc.² ICP was the first and the best of the industry watchers, publishing catalogs of offerings classified by application or use and supposedly providing independent analyses of new software products. I say supposedly, because one of the great things Larry did was let the independents help with their own reviews—that is, make sure that only the good news appeared. Oh, there was some attempt at keeping the hype in check, but Larry understood that a bad review hurt the whole nascent industry, so he would rather print nothing than something bad. You didn't have to advertise with Larry to get reviewed, but I don't think it hurt.

In any event, Larry seldom got paid for ads on time, if at all. None of us had the money. However, his *ICP Quarterly* was sold via subscriptions, and with a rapidly increasing corporate readership he had the cash flow benefits most publishers do—you get the money long before you deliver the goods. So Larry used the float to float the new industry. Luanne Johnson (formerly Luanne James), a good friend and long-term player in the industry, used to call ICP "the Bank of Indianapolis." Thank heavens for Larry.

Another Welke innovation was the \$1 Million Club, started in 1970. This was a black-tie affair where techies who had never left Des Moines got to go to New Orleans or wherever and receive a plaque for having sold \$1 million of ephemeral product. Larry paid for the show, which was good publicity for ICP, but the show also brought together people doing similar things for the first time. While this led to poaching, as it was the finest one-night opportunity for recruiting salespeople on earth, it also let the founders of companies meet and share notes. Larry pretty much let you declare your own sales levels, so there were \$1 million awards for products not quite ready for prime time, \$5 million awards for products with one customer, and \$100 million awards for companies whose cumulative sales receipts for all products were a fraction of the award for that one product.³ It all helped the industry.

When trade associations are strong

Trade associations, like US presidencies, are strongest in wartime—that is, when the indus-

try they represent is under attack from some strong force. In the case of ADAPSO, at the outset that enemy had been the Service Bureau Corporation, then a part of IBM, and later it became the rest of IBM. Ultimately, when IBM was an ADAPSO member and the major battles had been fought, the association lost power because it lost the participation of company CEOs.

In the 1960s and 1970s, while the software-leveraged industries were being born, you would see mostly CEOs at ADAPSO meetings. Today, at the successor Information Technology Association of America (ITAA) meetings you will see mostly third- and fourth-level managers who legitimately care about standards, international trade protocols, lobbying, and so on, but who do not influence the grand strategic direction of their businesses.

When the personal computer explosion happened, thanks to new companies like Microsoft and Lotus, CEOs' concerns shifted to the prevention of piracy, and ADAPSO was slow on the uptake. This failure created the Software Publishers' Association, a trade group that only represented vendors of shrink-wrapped software. Nonetheless, even though people like Microsoft's then-president Jon Shirley⁴ would still contribute their time to ADAPSO, their hearts were in other battles.

Competitors meet

Getting together with competitors was an occasion for fear and loathing as well as for having a good time. As rivals, we shared a lack of understanding of the paths ahead even as we scored individual triumphs: One of us would have found a clever compensation scheme for our sales force; another, a new way of writing distribution agreements (for yet another multitiered pricing scheme that customers would not scream about).

I recall clearly an early—probably 1974—software industry meeting that we held in New York City at the Waldorf Astoria Hotel. The key players—roughly 40 software company CEOs—were all there. Milt Wessel, ADAPSO's attorney, sat in to keep us honest. If Milt came across as cautious and pedantic at times, it was because he was a cautious and pedantic man, but with a heart of gold. Milt went by the book, much of which he had written. (In fact, his ADAPSO notes were bound and are now in the Charles Babbage Institute archives.⁵)

Milt plays a role in this tale only because John Maguire (CEO and founder of Software Ag of North America, or SAGA), I believe, had suggested an “open mike” format to this session

where whoever wanted to could get up and lead a discussion on a topic dear to our hearts. Marty Goetz spoke passionately about IBM predatory practices and urged us to unite against them. Someone else spoke about sales compensation practices, and we shared base and commission programs with one another. I led a discussion on international sales techniques, distributor compensation, and how to provide support over long distances.

And then the founder and CEO of a company that sold modestly priced utility software took the podium. He started off by saying, as I recall, “the problem with our industry is that we are not making enough money. One thing we could all do to help each other would be to take a pledge here and now to raise our prices by 50 percent over the next year. If we—” at which point Milt, sitting in the rear of the room, underwent what resembled an apoplectic fit. He was sputtering but words weren't forming properly. “Stop!” Milt finally shouted, but nothing more came out.

“This is an antitrust issue,” I said, trying to come to Milt's aid. I don't think the danger of an entire industry assembling in one room and discussing fixing prices had sunk in—the CEO who'd raised the issue just thought we were all pricing our stuff too low, which in retrospect was true. But we almost lost Milt right then and there.

Goetz and IBM's Competitive Practices Committee

Thanks to Marty Goetz's passion, we formed an ADAPSO working committee to try to negotiate better treatment from IBM, notably regarding early disclosure of interface standards (so we could build complementary products almost as quickly as they could) and no tie-in sales. Marty had so infuriated IBM over the years that, even though he was intimately involved with our strategy meetings, IBM wouldn't let him into the negotiations that finally got started in the early 1980s.

IBM's chief negotiator and IBM's delegate to ADAPSO, Ed Kane's boss, Tommy Spain, was probably the toughest hombre IBM ever employed. He wouldn't give an inch without a fight. At meeting after meeting, Tommy would use every trick in the book, from telling us he couldn't discuss an issue because it was the subject of litigation to invoking (unnamed) engineers who said that the things we needed were technically impossible. We countered with threats of additional suits, bad publicity, and appeals to their white-hat self-image and to their self-interest, namely that a strong independent software industry would help sell more

IBM “iron.” In the end, only the last argument worked, but IBM changed gradually. Tommy, a chain smoker, would subsequently die of lung cancer; Ed Kane would go on to work at one of the companies he formerly negotiated with (Management Science America, led by John Imlay); and IBM would create a whole department to deal with the industry (under Bob Berland, another good guy, who tragically died of a brain tumor, but not before having made over IBM's entire competitive policy vis-à-vis the software industry).

In addition to taking on IBM, ADAPSO started to truly represent the software industry in accounting standards issues, in the prevention of software piracy, in making contracts more complete and uniform, and in opening up foreign markets.

ADAPSO and accounting standards

Accounting issues in the early days were especially troublesome. As I noted, software is basically a work of authorship and as such is intangible. When a customer purchased a copy of a software product, the goods that transferred usually (in those days) consisted of a reel of tape on which the software was written. You might say that this isn't much different than the transfer of a book, where the physical medium is simply a carrier and the real value is in the content. Today, with digital media overtaking all other forms of sound recording, images, and text, this distinction is obvious to everyone, but back in the early 1970s, software recorded on tape posed special problems to the tax and accounting folks.

For example, in the early days of Turnkey Systems, I hand-carried a box of cards with the source code for our Task/Master product to the Canadian border near Montreal. I was delivering the system to Domtar, a large Canadian timber and construction company. The customs inspector at first wanted to charge me a duty on the value of the cards, but on closer inspection let them go into Canada free because he noted that they had holes in them and therefore were “worthless.”

For the accountants, the industry's practice of treating such a transaction as a sale was troubling, especially if there were ancillary services (installation, support, upgrades) involved. Further, my use of term licenses with hell-and-high-water—meaning that stopping payment was not an option for customers—payment provisions raised even more complex issues that troubled our accountants. So the question was, is this a term agreement (with monthly payments taken as the revenue reported)? Is it a

financing agreement associated with a purchase (where the purchase would be recorded at the outset and the interest income taken over the term)? Or is it a sale and service agreement, requiring that either some portion of the revenue be deferred to cover guaranteed updates during the license term, or a reserve for the provision of such services set up.

Equally troubling was the question of research and development expense. Should a software company, like a manufacturing concern, capitalize its R&D spending and then amortize it over the useful sales life of the resulting products? In the early days, some companies did just that, giving them much higher reported profits than those companies that expensed all of their R&D. This incomparability of results based on revenue recognition and capitalization differences prompted the Financial Accounting Standards Board to address both issues, and ADAPSO provided the industry input⁶ to what turned out to be a lengthy and contentious process. Twenty years later, there are still unresolved issues in the handling of both, but the rules are at least tighter, thus preventing wildly different permissible methods of reporting.

ADAPSO and software protection

In the area of software protection, the issues were equally contentious and ADAPSO was again in the fray. For years I served as the chairman of ADAPSO's Software Protection Committee, and our debates raged over the use of patents for software, the extension of copyright to more broadly encompass software, or the need for sui generis (unique) legislation to cover software. As noted earlier, Goetz argued fiercely that software was a “machine part” that should be covered by patents. Others noted that software embodied ideas and designs, something that patents specifically do not encompass. Some suggested that all we needed to do was make software a listed form of expression in the US Copyright Act and we would have everything we needed, since the combination of protecting our written work against copying and our contractual protections against the disclosure of trade secrets (that is, the source code) were ample protection.

My committee decided to try to strengthen the Copyright Act to make it explicit that software was a protected form of expression. We managed to draft a bill and get it to the US House floor. In the end, the courts solved our problem, and in the process I came to respect our slow-moving, litigious legal system and its

case-law base far more than I had before. I also came to understand the dangers of fixing something that is dynamic via statute, as in the Napoleonic Code where everything not forbidden is legal.

In the end, the courts have developed a body of case law that makes it clear that software, like other works of authorship, cannot be copied or distributed without the author's permission. Despite that, literally thousands of software patents have also been issued, never with a Supreme Court challenge to the basic concept of software as a patentable work. This is a battle that is far from over.

While the validity of many software patents is still an open issue, what is no longer debated is the fact that software theft in business-to-business transactions is exceedingly rare. For mainframe software, I am unaware of a single case of a customer stealing the software from a vendor. This is not true for microcomputer software, where making additional copies is all too easy and the tracing of locally made clones is difficult, but even in this case, most corporations take extra efforts to ensure that they are using only legally licensed copies. For the microcomputer software people, the real enemy is the pirate production facility, usually offshore, stamping out thousands of copies of Microsoft Windows, Lotus SmartSuite, Adobe Photoshop, or any other popular program.

In those early industry days, we really didn't know what to expect—whether our customers or distributors would steal from us, or whether we needed to fear a rogue employee who would bolt to a competitor with the family jewels. In the end, almost all of the disputes in the world of mainframe software involved ex-employees and the competitors who hired them. Every once in a while a distributor sold unauthorized copies, but large responsible corporations found no advantage in taking the risk of making rogue copies of software they had licensed under a strong contract.

ADAPSO and contract standardization

One final area where ADAPSO provided great assistance was in the standardization of contracts. Under the chairmanship of Dick Thatcher⁷ and with the expert legal input of ADAPSO's contracts counsel, Esther Roditti (then Schachter), the Contracts Committee churned out model contract after model contract for software licenses, maintenance agreements, distribution contracts, technology transfers, and so on. This body of work went a long way to standardizing the underlying legal terms by which the industry did business.

Dun & Bradstreet

I had joined ADAPSO as cofounder of Turnkey Systems Inc. (TSI), a small software company, but in late 1979 all that changed. A neighbor company in the time-sharing business, National CSS, wanted to move into software and we needed cash to expand. We agreed to a deal in December and closed it in February 1980.

When National CSS acquired TSI, I signed a two-year employment agreement and we had a two-year earn-out. I subsequently learned that earn-outs stink, from both sides' viewpoint, but it was an easy way for Dennis Sisco, representing Turnkey Systems, and Bernie Goldstein, representing National CSS, to close the last gap in the negotiations, and I went along. The problem was that, with the D&B acquisition of National CSS in June 1980, the shares in the earn-out pool were converted to cash, and the performance measures to determine the earn-out payments were distorted by the increased pressure to grow quickly through acquisition. In fact, in quick order I had acquired both Program Products Inc., from Information Science Inc., and privately held Synergetics Inc.,⁸ in order to round out the product line of the Software Products Group. As I'll soon explain, I then started to build two other product lines: applications and desktop suites. Determining which profits and which sales came from which company made earn-out accounting a nightmare.

But D&B still wanted a systems software strategy even if it looked increasingly like a bad fit to those of us encountering D&B's culture, which was slow-moving and technologically challenged with little cooperation between the various divisions. The only way the original strategy might work was if it were larger and thus more noticeable and less susceptible to the demands of a company with large bureaucratic divisions. Having graduated, reluctantly, from a small-business collegial atmosphere to a big conglomerate's bureaucratic atmosphere, I realized that I had to play their game because they would never play mine.

Art of the deal

Duke Drake, chairman of D&B in 1980, is one of the shrewdest deal-doers in corporate history. Somehow Duke knew when to buy and when to sell, even when all market conditions seemed wrong. He bought Technical Publishing when *Datamation* and its other magazines were just getting started and sold it just before the PC changed the world. He bought Corinthian Broadcasting when local TV stations were

cheap and sold it just as the great landgrab in broadcasting had hit fever pitch. He acquired Official Airline Guides when their monopoly status as a schedule-reporting clearinghouse was under challenge and sold it just before online lookups challenged the viability of pocket guides. And so on. Most observers thought of D&B as a credit reporting company, but in truth, credit reporting was in trouble, and its regular-as-clockwork earnings growth came from these shrewd deals Duke made.

Duke asked me if I would stay longer than my two-year contract, and I said that four years would be the maximum as I was not a big-company guy. I was willing to add two years because I was learning about D&B and was more and more convinced that the mission I was on, systems software product expansion, not only did not fit the D&B culture, but was completely misunderstood by it. I stayed because I wanted some more time to move into applications and desktop suites, which I thought did fit the longer-term D&B profile.

DunsPlus

I decided that if D&B were to succeed in technology products, there were only two fields where it might achieve success: corporate workstations for data retrieval and very high-level applications software. The just-introduced PC was not yet a standard, and VisiCalc was a product on almost every Apple II or III sold. A new company, Lotus, was introducing a VisiCalc competitor, Lotus 1-2-3, and I viewed the spreadsheet application as a killer app. I also thought putting the PC together with the software, navigation tools, and support would be the way corporations would buy systems. In the early 1980s, which was before the application suites concept had been conceived, the character-based operating environments were difficult for business folk, who had not been raised on technology, to use.

Thus was born DunsPlus, an integrated platform with simple menu-driven navigation, online access to stock prices and news, and pre-programmed applications that performed the basic tasks that our surveys said most middle managers would use. I assembled a team, got a budget approved, built a prototype, and installed it in the offices of Duke, Charlie Moritz (later Duke's successor but one of the two senior vice presidents at the time), Dick Simmons (the other senior VP), and most of the other senior managers at 299 Park Avenue. I made sure that they knew how to at least look up and track the symbol DNB and get the current news and weather. Big stuff in those days.

Phillip "Don" Estridge

Phillip "Don" Estridge was an IBM maverick who, under the protection of former IBM CEO Frank Cary, had managed to create an independent division in Boca Raton, Florida, chartered with bringing IBM into the world of PCs. Don had broken every IBM rule, building non-proprietary open machines that ran non-IBM (Microsoft) software and that were sold with razor-thin margins. It was pretty clear to me and many others that while IBM generally didn't have a clue about this new technology, Don was on to a winner and that the IBM PC would define a standard against which all new software and hardware would be designed. I wanted to be first on the block with an IBM-branded PC that sported the D&B logo. It was tragic for IBM when, several years later, Don and his wife were killed in a plane crash, caused by wind shear, at Dallas–Fort Worth. IBM needed more out-of-the-box thinkers like him.

Early spreadsheet applications

As I write this, Microsoft dominates the market for spreadsheet software with Excel, but there were two prior generations of this product. After Bob Frankston and Dan Bricklin invented the concept, in the 1970s, Dan Fylstra commercialized it with VisiCalc. Although the spreadsheet product was originally written for the Apple, Fylstra's vision was to move the simple spreadsheet into integrated suites and onto multiple platforms. So in late 1981 with DunsPlus well into the planning stage, we negotiated with VisiCorp to bundle VisiCalc into DunsPlus. In fact, we toyed with buying the whole company, but Fylstra wanted roughly 10 times what we were willing to pay. Good thing we didn't buy. Just about then, Mitch Kapor and his company, using funding from Ben Rosen's new venture fund, founded Lotus Development Corp. with the idea of a better spreadsheet. Before Microsoft even entered the application market, Lotus 1-2-3 was destined to crush VisiCalc and dominate this market.

Don Estridge agreed to let D&B be the first (and only) rebranded vendor of the IBM PC in exchange for a \$1 million good-faith payment and a firm order, both of which I managed to get for him. I'm sure that Don never thought I could get a \$1 million D&B check for what amounted to earnest money, but when I had the check in hand he had to make the deal work. After failing to make a deal with Fylstra, I also signed a bulk deal with Lotus for copies of 1-2-3, and thus equipped we started to build DunsPlus workstations. By the time I left D&B in 1983, the workstations were shipping in

quantity, but my successors had the same problem with the other D&B business units. They simply were not interested in letting us get DunsPlus into their sales channels. The product did well enough, but never as hoped.

Application software and McCormack & Dodge

My other idea, application software, required a major acquisition. I found it in McCormack & Dodge, a Boston-based company founded by an ex-IBM systems guy, Frank Dodge, and an ex-IBM salesman, Jim McCormack. Frank's engineering background had pushed the company into very nicely designed products, all of which fit together fairly well.

M&D's biggest competitor was John Imlay's Management Science America (MSA), and the two companies could not have been more different. MSA was sales and marketing, through and through. Its salesmen talked big and drove big cars. They made outrageous claims, disparaged the competition, cut deals with customers, and took no prisoners. Their marketing was as in-your-face as were the salespeople.⁹ Imlay is a marketing genius who made MSA seem to be the only choice an intelligent buyer could make.¹⁰ M&D was just the opposite. It had low-key salespeople—who'd hide their light under the nearest available bushel—who tended to be very technical. They were getting steamrolled by MSA but didn't know what to do about it.

Frank Dodge had hired a young guy, John Landry, who had the bright idea of making the various accounting wares they sold—accounts receivable, billing, payroll, fixed-asset accounting, accounts payable, and general ledger—all function under one umbrella that he named Millennium. Around Millennium they would build a next-generation image of all accounting functions, he thought, leapfrogging what amounted to MSA's bluster. So, when I met with the company, it was actually regaining market share, had great technology, had two founders who did not get along, and was ripe for purchase.

By this time, my tenure at D&B was drawing to a close. I had a president of the Systems Software business, Sherman Drusin, who we acquired along with Program Products; a president for DunsPlus, Tom Niehaus; and, under Frank Dodge's leadership, M&D became the applications division. We closed the deal in late 1982, with Dodge and McCormack each taking away \$15 million in cash plus future payments based on performance. I had not wanted this earn-out for reasons explained earlier, but the deal's magnitude had caused control of the final negotiations at D&B to escape me.

My exit strategy

Before I left D&B in June 1983, I believed things were in good shape. I had recommended that the systems software operations be sold, at what I thought would be a significant profit, because the synergies originally envisioned with National CSS, and later with D&B, were not panning out due to irreconcilable cultural differences. The hoped-for benefits of having many businesses, under one umbrella, with which you could partner and to which you could sell your wares was proving illusory. The constant focus on financial reporting versus strategic opportunities was demoralizing.

DunsPlus and M&D seemed to be on the right track. I had settled the Turnkey Systems earn-out to everyone's satisfaction.

I was tired of D&B's culture, and had sealed my doom when asked by Duke what I would do if I became chairman. Half facetiously I told him that the first thing I would do would be to sell the corporate jets. At the time, Duke and his wife, Shirley, commuted back and forth to Wickenburg, Arizona, on the company Gulfstream, which was equipped with (real) gold faucets in the lavatory (which would, if you forgot to turn them off, keep running) and an original Frederick Remington oil painting on the bulkhead. My half-serious reply was obviously not well received, but I still believe that corporate managers are obligated to spend the company's money as if it were their own, and to put shareholder interest ahead of their personal comforts. Unfortunately, this isn't a generally held view, especially by what my wife, Nancy, calls "the new aristocracy." Anyway, I was ready for something new, the more different the better.

SofTax

Things moved slowly during my last year at D&B. I had followed my own rules too clearly, leaving the operations to the three unit managers who reported to me. As a lame duck, I stayed out of their way and let them get to work comfortably without me in the chain of command. I was there for them when they needed me, but I had very little to do, and uncharacteristically, my days—unlike during my earlier career—were strictly 9 to 5. I even had time to moonlight.

I had an idea that so-called macros in (initially) VisiCalc could be used to develop portable applications. The first application I thought about, and partially implemented in the evenings, was tax preparation: automating the forms that the IRS distributes. After all, these forms are just spreadsheets with cells that are

calculated from other cells or from subsidiary spread sheets/forms. Before long, I wanted to pursue this as a real business, and with D&B's permission I set up a little company and hired Kathy Emerson (the project manager on the original Burndy contract programming project that created the precursor to Task/Master) to run it. We bought an Apple III, rented space, and set out to build one of the early shrink-wrapped software products.

This all happened while Mitch Kapur and company were systematically taking over the spreadsheet market with Lotus 1-2-3. So, in mid-stream we switched to a Lotus 1-2-3 platform, and in 1983 we launched SofTax as a packaged offering to (initially) professional tax preparers. Kathy manned the office, did the programming (macro and spreadsheet development), and started the sales program. I helped out nights and weekends. We both learned a lot, not least of which was that shrink-wrapped software was going to become an entirely new market with different price points, distribution channels, and packaging needs.

SofTax was too early to market—the operating environments were far from stable—and in the end Kathy sold the business to an accounting firm for a modest profit. It was a great education. Kathy went on to form Repository Technologies Inc. with her husband and my friend Jim Emerson, and together they have managed to build RTI into a nice, growing, and profitable business.

PCs and performance

It's important to remember that the PC revolution took a while to change the face of commercial computing, mainly because the operating systems were so terrible. They still are, but at least we now have much-better-educated users, and applications that run most of the time. Neither statement was true in the early 1980s.

Almost as important an obstacle as the primitive operating systems was the performance of those early PCs. The original 8080 Intel chip, introduced in 1974, had a clock speed of approximately 2 MHz. By 1983, the 8088 chip used in the IBM PC had a whopping 4.77-MHz clock speed. As I write this, clock speeds are in the 3-GHz range, roughly 600 times faster than the machines Kathy was trying to make do complex stuff. That she succeeded is a true testimonial to her skill and persistence.

Thanks to SofTax and DunsPlus, I had seen the future, however, and it included lots and lots of personal computers.

France

In spring 1983, I had but a few months left on my contract. Several years before, I'd let Duke and others know that I would be leaving in June 1983. In the meantime, my wife and I agreed to take a sabbatical. I decided to go to the Dordogne region in France and write a book; she decided to go to Paris. So in July we went to Paris and I wrote a book.¹¹

For years I had acted as the head of ADAPSO's Software Protection Committee, and in the process I had learned a lot about the law and, more importantly, how hard it was (and still is) for business people to get straight answers to questions on copyright, trade secrets, and intellectual property in general. Simple techniques, like getting new or promoted employees to sign postcard-sized acknowledgments that they had read, understood, and agreed to be bound by the terms of the employee handbook, are elegant and easy-to-implement tools but not widely understood or used. This was the basis for my deciding, as a non-lawyer, to write *Preventing Piracy: A Business Guide to Software Protection* (<http://vanguardatlantic.com/Preventing%20Piracy.pdf>). Addison-Wesley had agreed to publish it (and did, in 1985), so I packed several boxes of reference documents and notes and off we went to Paris.

The Compaq burns

Because I'd be writing a book, I brought my Compaq "luggable" computer, the first transportable version of an IBM PC-compatible computer. With two 5-1/4-inch floppy disk slots, 8 Kbytes of memory, and one of those 5-MHz 8086 processors, it was adequate for word processing, which is all I needed. Ben Rosen, who had founded Compaq (after founding Lotus and whom I had met at one of the conferences Esther Dyson ran for him), assured me that, with a simple Radio Shack converter, he was able to use his machine in Europe. When I asked how a Wheatstone bridge circuit like Radio Shack's could handle the power the machine drew, he said he didn't know, but that it did.

An IBM PC/XT, from 1983

And so, about two weeks into our stay and one chapter into my book, the Compaq caught fire. By the time I could put out the fire, half the machine was destroyed. IBM had just opened a retail center in Paris, so I lugged my charred Compaq into the IBM shop for help. In my pigeon French I explained the events, my need, and the hope that some of the components of my \$5,500 machine could be salvaged. The nice young man in the repair department

managed to get some usable memory and the two floppy drives to work in a new IBM desktop model, and for a mere \$5,500 I was back in business (but with a French keyboard, French messages, and French manuals).

Learning French

In mid-September, I started intensive French courses, taking four hours per day of instruction and usually having two hours of reading each night. Nancy took afternoon classes, so I would leave the apartment at 7 a.m., take classes from 8 till noon, then we would meet for lunch somewhere and she would take the less-intensive course from 2 p.m. to 4 p.m. while I wrote until 7 p.m. This pattern repeated until the end of May 1984, when I finished my book.

While in France, I had stopped all second-class mail, meaning that I wasn't deluged with software (and other industry) magazines and papers. I kept in touch with my old friends simply by visiting with them on their trips through Paris, but my interest had flagged in things that once seemed critical.

With my book completed, I was faced with a next-career choice. I had loved starting Turnkey Systems and thought that my jack-of-all-trades skills were ideally suited for the early days of a startup. I had hated the large corporate environment, but saw a screaming need for large corporations to find help in keeping up with small, innovative companies. Thanks to D&B, I had managed or participated in over a half-dozen acquisitions, and from this past experience, Vanguard Atlantic Ltd. was born, at least as a concept.

Vanguard Atlantic Ltd.

My idea for Vanguard Atlantic Ltd. was to provide strategic consulting guidance to potential acquirers of high-technology companies. The sellers were well represented by firms like Broadview Associates, cofounded by my old acquaintances Bernie Goldstein from National CSS and Gil Mintz. But while Broadview and the more traditional investment banks claimed to provide buy-side assistance, they represented the sellers too, and thus always had immense conflicts of interest. My vision was to represent only buyers and only if we could first help them develop a strategic plan for acquisitions, not just be their agent when they lusted after some property. In effect, my plan was to do a better job than Bain & Company had done at D&B defining strategy and to do a better job than Broadview and the other investment bankers did in representing a buyer's true interests.

Jack Pendray joins Vanguard Atlantic

After putting a few of these thoughts on paper, I shared them with a few friends who gave me good advice, such as restricting the client list to non-competitors and working only the buy-side of the business brokerage equation. Simultaneously, Jack Pendray (the former CEO of TSI's distributor in France, TECSI Software) called me to find out what I was up to and I shared the idea with Jack. "Would you like a partner?" he asked.

And thus the Vanguard Atlantic odd couple was formed. I say odd couple in a kindly way. I am a night person, I am organized because of learned disciplines that overcome my native sloppiness, and I am a flaming optimist. Jack is a very early riser and a realist if not a borderline pessimist. Between us we did good work. Even before Vanguard Atlantic grew to some size, people thought we were a 24/7 firm. Jack would arrive at the office by 5 a.m. and poop out after his postprandial run, around 3:30 p.m. I would struggle in at 9:30 a.m. but not leave until after 8 p.m. most days. We covered Europe and both coasts on their time zones!

Investment banking

Over the next four years we signed up some prestigious accounts: Nynex, Coopers & Lybrand, National Semiconductor, ADC Communications, and others. Jack liked the work initially, but I saw from the beginning that despite the large fees the business was not a soul satisfier. We would give our clients great strategies to pursue, the tactics with which to pursue them, and they would take our ideas and almost always misexecute them. I had assumed that D&B was a unique company, one of the few that could buy a good company and then destroy it, but I have since learned this turns out more often to be the rule rather than the exception. We became the executioner's helper, delivering rapidly growing, profitable companies to bureaucratic butchers who, despite their rhetoric, ultimately saw any entrepreneur in their midst as an enemy of their plodding careers. The entrepreneurs who sold got rich, and many of them are still friends, but their postsale depression was both normal and justified. By 1989, we had decided that the considerable money we were making was tainted by our customer's inability to execute an agreed-upon strategy, and we closed shop in favor of our venture business—but I am again ahead of my story.

Developing (and publishing) our techniques

Jack and I had taken other people's work on strategic theory and developed a hybrid for our

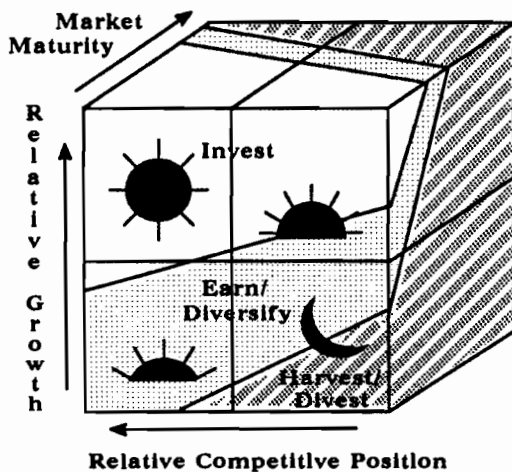


Figure 1. Relative competitive position cube. Companies in the upper-left quadrant are most desirable for acquisition and investment; companies with reasonable growth and market share should fund the other strategies; companies in the lower right should be sold off (harvested) or avoided.

clients, with a little of our own thinking thrown in. We published bimonthly newsletters that detailed these approaches and also published valuation tables for all of the public companies in our sector. After a year or so, these became important resources for many in the industry and they helped us gain a lot of business. In 1987, we assembled our articles on strategic development, edited them, and published *Strategic Development for High Technology Businesses*.¹² Value Publishing, our subsidiary, published the book, and we distributed it directly. Still available today, in the mid-1990s it was selected by a professor at Stanford University's business school as one of the 10 best books on strategy ever written, an accolade that still gives me great pleasure.

The concepts in the book are relatively simple: define competitive markets as precisely as possible along three axes—technologies, customers, and functions. Then place all of the known competitors who offer goods or services in this narrowly defined cube on a scale of size and growth, similar to the famous Boston Consulting Group bubble chart.¹³ Our bubble chart, unlike the BCG approach, ranked companies on relative competitive position versus relative market share, a subtle but important difference, especially in fast-moving markets. Size of customer base and volume are important, but we plotted that as the size of the bubble. We then added a third dimension, market maturity, and passed a plane through the resulting cube as illustrated in Figure 1. Decisions on attractive market opportunities thus started with measures

of relative competitive position, relative growth rate, applicable strength (the size of the bubble), and market maturity. Like the BCG analyses, upper-left-quadrant opportunities are most desirable; those in the lower right quadrant are to be divested or avoided.

If you visualize a Rubik's Cube you will note that there are 27 small cubes inside the larger cube. If each small cube represents a market, then the market we are examining has 26 markets that share at least one of its characteristics. A big difference in our approach was to identify all 26 of these adjoining cubes, that is, markets that differ on only one axis, and populate these with their own sets of players. This way, potential competitors who can respond to an opportunity using existing technology or by mining an existing customer base can be identified in advance, and more often than not this is where new companies get blindsided. The ideal market turns out to have a number of small competitors (thus demonstrating that there really is a market), no established large players, and no large players in any of the 26 adjoining markets. This not only means that the threats are at least delayed by barriers to entry but also that—if successful—you can rapidly move into adjoining markets by taking advantage of your own technologies, domain knowledge, or customer base.

That's it in a nutshell, but there's a lot more to the approach and its application that's beyond the scope of this article. Suffice it to say that we applied this technique to our various investment banking accounts, and a few of them adopted our methodologies for their internal use, continuing to use them long after we had left that business behind. Sometimes the results of the analysis are startling, especially when it confirms one of my rules that most entrepreneurs reject, at least initially, which is that if there are no competitors in a space, there is probably no opportunity in that space unless it adjoins a market with strong competitive presence. Intuitively, the reverse is true: that no competitors in a space where you have a great product or service should mean instant monopoly. However, more often than not, no competitors means either no interested buyers or a market so new that it will require generations of products, pioneer work, branding, and all of the other nasty things associated with ad hoc creation before anyone will make a dime.

Sometimes one of these empty cubes simply means a misdefined market, as in the case of artificial intelligence in the late 1980s and, more recently, e-commerce. Sure, artificial intelligence (if that means adaptive rule-based

systems) is a key component of modern systems, but AI is an under-the-covers technology. E-commerce simply is doing what L.L. Bean and Sears Roebuck did for years via catalogs and telephones but using a new medium (the Internet). In and of themselves, neither is a new market. In the end, even Amazon is simply another catalog retailer. The real changes will be made in improving the efficiency of established businesses through new communication and ordering channels, reduced inventory and processing costs, and improved customer service. This seems obvious in retrospect, but billions of dollars were lost because people thought AI and the Internet represented tectonic shifts.

Investment banking disappointments

Jack's biggest customer, Nynex (subsequently Bell Atlantic and now Verizon), used our tools and contacts to buy both AGS Software and Stockholder Systems Inc., on the premise that phone companies could "tunnel" from one of those market cubes (in Nynex's case, from telecom-based services) into an adjoining market with common customers (to supplying data processing and development services). As in other applications of this theory, tunneling is possible because only one of the three market-defining parameters needs to change to get there. Larry Schoenberg, one of the founders and CEO of AGS, was initially delighted to be made an instant multimillionaire and to be given a seat on the Nynex board. Within a year the relationship had soured, Nynex was squashing AGS' basic business, and the lack of synergy was becoming evident. Larry left and there remain no remnants of the original AGS. Ditto for Stockholder Systems. In the meantime one of my customers, Coopers & Lybrand, had taken our analysis and advice and bought Computing Associates, a professional services consulting firm headquartered in Hartford, Connecticut. This also was a successful deal for us and for the sellers, but a complete write-off for C&L.

Our advice to National Semiconductor was to acquire a true value-added supplier for its National Advanced Systems division, and thus create a two-way trade with Hitachi, NAS' IBM-lookalike supplier. We found the company (in high-speed switches) and laid out a "move upmarket" strategy (finding customers who'd purchase on value rather than price), but the "we sell \$0.90 dollars" guys who only knew how to sell products at the lowest price could not understand how they could actually sell technology versus bargains, and on the first

severe change in the dollar-yen relationship, NAS was gone. We began to doubt our customers, if not our methodologies. The fees were seductive, however.

An aside on what happened to the money the entrepreneurs received in these acquisitions is possibly useful. Although many millionaires have been made in the software and related services industries through consolidations and public offerings, it is my retrospective observation that the money that went to the entrepreneurs was jealously guarded. Very few entrepreneurs changed their lifestyles dramatically, left on permanent world tours, or bought palaces. They did spend money aggressively, but mostly on things other than themselves. Many started over, using their newfound capital to launch yet another business. A few, like Senator Frank Lautenberg (cofounder of Automatic Data Processing, the world's largest payroll company), used their millions to run for office. Many others gave generously to charity.

I recall a conversation I had with my friend Jay Goldberg, whose original fortune came from the sale of his Software Development Associates (SDA) to Larry Schoenberg's AGS Computers. After SDA, Jay started and sold two more companies, earning many more millions before transforming himself into a venture capitalist. When I asked Jay why he still worked so hard, his reply was typical: "so I have more to give away." I concur.

Becoming a venture capitalist

Vanguard Atlantic got into the venture capital business by mistake. I had never wanted to be a professional investor. When we formed Vanguard Atlantic, the idea was to provide expert, even quasi-scientific, strategic advice to large companies so they could acquire their way into well-targeted new markets. The idea of using our own capital in any of these transactions was counter to the whole principle of being independent, professional, neutral observers of the markets.

My view of venture capital has always been negative. Scarcely any of our successful large companies were founded with venture capital, and on average, venture capital has been a poor investment. Barton Biggs of Morgan Stanley noted that

The compound average [venture return over the last forty years] is only 13.4 percent, or about 100 basis points less than small-cap U.S. stocks In other words, VC has much lower inherent returns and far higher risk than conventional wisdom believes.¹⁴

Biggs further predicted that, of 17 asset classes, venture capital will offer only the eighth-best returns from 2001 through 2010, at 8 percent annually.¹⁴

Even when I could have used some funding to grow Turnkey Systems, I knew in my heart of hearts that the money I was husbanding was the most efficient money I would ever manage. There is simply no way that access to more cash could not have changed what we did, some for the good but some for the bad. There is a discipline involved in getting money from customers in order to pay your people or build something new into a product, a discipline that involves lots of participants: you, your employees, your customers, and your suppliers. The process could well be described as triage, because needed expenditures, like a real desk for the boss, get jettisoned in favor of an extra trip to make sure a customer who may or may not write a check is especially happy.

Venture funding opportunities

Venture funding, even when managed by the most tight-fisted and experienced entrepreneur, opens up opportunities for going too fast, ignoring employee and customer feedback, and allocating funds to the wrong projects. With venture funding the office space is usually nicer, the leases are longer, people occasionally talk themselves into employment contracts (with severance!), staffs are bigger, and the idea “invest first, earn later” becomes the order of the day.

So, when I learned that my old employer, D&B, had been slow to take my 1982 advice that it sell the systems software business and was now, in 1985, desperately searching for a buyer, the last thing I thought was that this was the beginning of a move into venture capital funding. After all, if we were to manage a deal it would be with our money, not some limited partners', and we would be running the businesses, not funding some wet-behind-the-ears MBA with a bright idea and no real-world experience. Thus we discovered the slippery slope.

An acquaintance told me that D&B had hired Broadview Associates to sell the division that included my old Turnkey Systems plus the assets we had acquired from Program Products and Synergetics and that, after nearly a year of trying, D&B could not find a buyer. I called Dave Fehr, my former boss, told him what I had heard, and indicated that if there were no other buyers, then Vanguard Atlantic might be a buyer of last resort. He set up meetings with Jerry Gabert, the group CFO, who demonstrated by his description of the assets an obvious

disconnect between what D&B and I thought they had. I remembered all those hell-and-high-water leases Turnkey Systems had written, which I figured must still have millions of dollars of untapped value. D&B saw service liabilities, declining revenues, and no strategic fit.

As it turned out, there were almost \$13 million worth of those hell-and-high-water leases that we had started writing back in the early 1970s, plus six products with varying customer bases and sales rates. The business was running, however, at a noticeable loss. D&B had somehow concluded that any company with less credibility than D&B would never be able to collect the balances due from the leases, regardless of their terms, and therefore gave them very little value after D&B stopped being the billing agent. I knew from experience that as long as the companies used the software and we fixed it if it broke, they would pay, and frequently even after they stopped using it. I thought of splitting the products among several operating companies and then selling each piece separately, but requiring the acquirer to take on the service obligations for existing customers as part of the purchase price. A new financial service company we would form would hold and collect the leases, leaving renewals as a plum for the new operating companies.

This scheme made sense to Jack Pendray, and all we lacked was the cash to make an offer we thought D&B could not refuse. To raise the cash, we took on the Herculean task of categorizing each lease by inception date, amount, term, face value, and so on. We spent days and nights reading leases and putting together a database of what D&B really had. We then took this list to Bankers Trust Company and to Peoples Bank of Bridgeport and asked them to give us the terms of a collateralized loan secured by the \$13 million face value of these leases. We outlined our plan for service, but as noted earlier, the bankers respect hell-and-high-water language with no offsets from AAA companies more than anything else, and that is what we had. Both banks gave us strong competitive offers, but People's won, offering us \$8 million at reasonable rates, more than enough to offer D&B \$6.6 million in cash along with a 40 percent stake in the new operating companies. Of course, D&B management knew nothing about the bank financing, and were happy to get anything at all for these properties that they believed they were running into the ground (and were) and which would ultimately become a liability for them (they would). They looked at the \$6.6 million as their pay and gave very little value to the 40 percent stake in the new

companies; something they would later learn, to their glee, had been a mistake.

Our offer was for the intellectual property assets, customer relationships, leases, and other financial assets, but not for the businesses or people. D&B agreed to assign the leases to us and, for the few that were nonassignable, to help us get the customer to agree to assignment. We got the right to recruit people from the 150 or so in D&B's employ with an agreement to take no fewer than 50.

Creating the "new" TSI

We created three new companies from the assets we acquired: Vanguard Atlantic Financial Services, Vanguard Atlantic Properties, and TSI International Ltd. The old Turnkey Systems Inc. (TSI) had long-before created an international subsidiary named TSI International Ltd., so we simply adopted that name for the first operating company, and the new TSI hired 54 people from D&B, including Connie Galley, who would ultimately become CEO.

TSI's mission was to take over Key/Master sales and marketing, and to service the Task/Master customers as well. Key/Master was a key-direct-to-mainframe data entry product, and Task/Master was a predecessor to and competitor of IBM's telecommunications control program, CICS. Key/Master sales were then around \$3 million annually, and we felt there was a lot of upside in that business plus a lot of opportunity for expansion. With 54 employees, the new company was at roughly break-even. We gave them \$1 million in capital to get them started, gave the management team shares and options representing a 20 percent stake in the company, leaving Vanguard Atlantic with 40 percent, and D&B with 40 percent.

Jack, I, and our new Vanguard Atlantic partner Jan Rumberger threw ourselves into putting the new TSI together with the right team, structure, and facilities to make a smooth transition. Vanguard Atlantic Financial, under another new hire, Catherine Phillips, set about the task of creating a relationship with each of the lessees so we could service our debt. The risk was that we would collect less than the \$8 million we had borrowed, and we all sweated as the first payments under the new structure were billed and collected.

To jump to the punch line, we collected \$11.6 million of those leases, giving ourselves a very nice dividend for the risk we took. Ernst & Young's national tax department structured our transaction to be essentially tax free, by creating value for the shares we gave to D&B and letting us amortize our newfound costs about

equally with the lease cash in-flows. I was always amazed at and grateful for their creative accounting, which I never questioned too much for fear that it would turn out to be overly ambitious. In any event, the excess of our collections over the note passed through to finance our other operations, tax free.

Part of the trick in collections, of course, was to make sure that the customers got service when they needed it, so the remaining products that Vanguard Atlantic Properties held (Docu/Master, the Decision Analyzer that I had acquired from Program Products Inc. in 1979, and two Synergetics products) had to get into operating companies fast. We sold the Synergetics products to an entrepreneur who eventually defaulted on his debt, which was a complete disaster. We formed a new company, Document Systems Inc., to take over Docu/Master, staffed it, and later sold it for cash and shares to AMS. We formed a new company, Decision Technology Inc., still in business today, to take over the Decision Analyzer, staffed it, and later sold it to its management in a leveraged buyout. In all, over the next four years (1985–1989), we liquidated the leases, created three new businesses in which Vanguard Atlantic held 40 percent shares, and then sold all but TSI to various buyers, earning roughly \$6 million in cash plus residuals on our original no-money-down purchase.

But all that paled in comparison to our winnings on the new TSI.

TSI's technologies

Key/Master is as prosaic an application as you can imagine. In the punch card era, scads of (almost always) women sat at keypunch machines and converted documents to cards with holes in them. Another set of women would then rekey selected parts of the data to make sure that both operators agreed. Usually these people worked in large, noisy rooms. The work was hard, boring, and physically debilitating. Carpal tunnel syndrome wasn't on everyone's hot-list in those days, but sore hands and wrists were.

Then, with the advent of minicomputers, the keypunch was replaced with a cluster of computer-controlled terminals. The operators had less noise and several software assists, but the work remained hard and boring. The advantages were mostly in accuracy—the minicomputer could do checksums, hash totals, table lookups, and mathematical calculations to verify, for example, that price per unit times quantity equaled the total amount. Key verification was reduced substantially. For management, the minicomputer controller added

statistics, performance measures, and a way to change from hourly to performance-based compensation. However, the operators remained in the data processing area, with no special knowledge of the documents they were processing. Errors and rework were the norm, with batches of data frequently reprocessed once all of the errors had been corrected.

The idea that data should be entered by those who “owned”—and therefore understood—it always made great sense. Decentralizing the work would remove the sweatshop environment of the old keypunch rooms, along with a lot of the physical strain of doing just one job repetitively. However, with key-to-tape and key-to-disc systems, the work still had to be done by data entry operators.

Key/Master changed all that by letting the order entry clerk, inventory control specialist, shipping clerk, or accounts receivable person enter their own data. New edits were added, including real-time checking of key information like account and part numbers, to further reduce the error count and rework. This is the product we decided to build the “new TSI” around, because we saw pseudo-real-time processing as the first step to other data-intensive applications.

From the formation of the new TSI in April 1985 until 1988, the company focused on stabilizing the customer base; developing telemarketing, agent, and direct sales channels; and forming the base for future expansion into related products. In 1988, Jack Pendray volunteered to spend as much time as was necessary to help TSI's CEO, Connie Galley, choose the next path for the company to follow.

TSI discovers EDI

Jack and I had published *Strategic Development for High Technology Businesses* the year before, and Jack used the concept of “tunneling” we espoused to search for businesses in adjacent markets, using similar technologies, and serving similar customers. Electronic Data Interchange, or EDI, quickly popped to the top of the list, and we all agreed that the company should move toward a suite of products to implement the EDI standards in a series of off-the-shelf products for trading partners and a central software engine for the trading hubs. To build this, we induced Warburg Pincus Venture Partners to bring a fresh \$5 million into the company. Warburg also bought out half of D&B's “worthless” position. In the early 1990s, TSI International changed its name to Mercator Software to match the success of its new flagship application integration product. Later, Warburg would sell the shares it bought from

D&B for more than a 1,000 percent return.

With Mercator's acquisition by Ascential Software in 2003, Vanguard had held TSI/Mercator shares for 18 years and had realized a return well over 10 times its original investment. As the final cap to this story, IBM recently acquired Ascential, so 38 years after two ex-IBMers founded a company (Turnkey Systems) to compete with IBM, all that remains is IBM and lots of recycled money, most of which went to repeat the cycle.

But that is a fitting ending to this tale. Progress is generally made by small companies, and eventually these small companies either become, or are absorbed into, large companies in which their innovation and risk taking are tempered by the operational and bureaucratic necessities of large organizations. In the process, however, great wealth can be created, and once created it is generally recycled. This has been the strength of the US economy: The safety net is not government controls over employment, as in Europe where risk taking is an unnatural act, but the availability of recycled wealth in the hands of people who know the rewards of trying and even failing, so long as you can try again. I have thoroughly enjoyed, and am enjoying, being a part of this process.

References and notes

1. ADAPSO later changed its name to the Information Technology Association of America, ITAA. ADAPSO was originally organized to represent the data centers, those shops that processed payrolls and accounting records in competition with giants like IBM's (later, after forced divestiture, Control Data's) Service Bureau Corporation. In the 1970s and early 1980s, ADAPSO was headquartered in Montvale, New Jersey. Later it moved to Washington, D.C., and Luanne James (now Johnson) became its executive director. Luanne is herself an industry pioneer, having founded Argonaut Information Systems Inc. in 1971.
2. Another early software products company, Boole & Babbage, was founded in Sept. 1967.
3. I don't want to be too unfair, but in our case we took our “leased” and sold product count and then multiplied by the highest (all feature) current price, then we added in all sales “commitments” (“prospect wants meeting” was good enough), finally rounding up. These awards were worth their weight in gold for the credibility they created with customers, especially when IBM was doing its FUD (fear, uncertainty, and doubt) bit against you.
4. Who for several years served on my Software Protection Committee.
5. Milton R. Wessel papers, 1966–1989, CBI 120,

Charles Babbage Inst., Minneapolis, Minn.; <http://www.cbi.umn.edu/collections/inv/cbi00120.htm>.

6. Jim Porter, then a vice president of Informatics, led this effort for several years, to be followed by Larry Schoenberg, founder and CEO of AGS Computers (a company that Vanguard Atlantic subsequently helped Nynex acquire). I served on the early committee with Jim for several years.
7. Cofounder (with Walter Brown) and CEO of Atlantic Software Inc., founded in 1967.
8. Run by founders Al Devito, Les Conklin, and Ted Watson. Their primary product, Data Catalogue, was a data dictionary on which we intended to anchor our suite of system software products. But, as I will tell, system software products matched the idea of a National CSS/Turnkey Systems strategy, but didn't fit with D&B at all.
9. In his book, *Jungle Rules*, John Imlay says it a little differently: "While McCormack & Dodge stressed leading-edge technology in its marketing, MSA stressed people, goal sharing, customer satisfaction, and the personal touch. In every year of our head-to-head competition MSA won in market share." J.P. Imlay Jr. with D. Hamilton, *Jungle Rules*, Dutton, 1994.
10. John's marketing ploys are legendary. In one story he had the Atlanta Fire Department on hand (but hidden from view). He told his assembled sales force that he was tired of putting out fires, then grabbed a bucket of kerosene, dumped it in the corner of the room, and lit it with a match as people screamed and fled. The firefighters rushed in, doused the flames, and John reassembled his audience, with their fullest attention. Later, he brought a live tiger to an ADAPSO conference in Denver, for use in a typical John Imlay extravaganza. Unfortunately, a woman who just happened by tried to pat the "nice kitty," and it took years for John and ADAPSO to get out from under the negative publicity and lawsuits that resulted after she got mauled.
11. I announced our plans to friends in the industry, and Larry Welke hosted a "farewell" roast for me at the spring 1983 ADAPSO meeting. My staff at D&B did the same. I was genuinely moved to find out how many friends I had, and learned that sometimes it is better to tell people you appreciate them before they leave you.
12. E. Keet, E. Pendray, and J. John, *Strategic Development for High Technology Businesses*, Value Publishing, 1987.
13. In the BCG approach, companies are Stars if they are in high-growth industries and have high relative market share; they are Cash Cows if in lower-growth industries but with high relative market share, Dogs if low on both measures, and Question Marks if in high-growth markets but with low relative share.

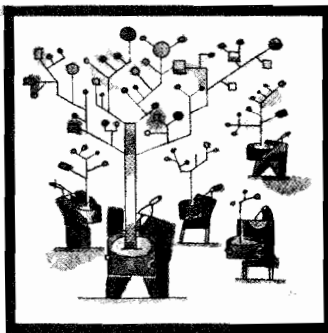
14. Commonfund Capital Inc., "State of the Venture Industry," presentation to the Novak Biddle Venture Partners forum, 13 May 2002. The Biggs quote came from a speech he gave to Commonfund Capital in which he referred to statistics published in "Venture Capital and Its Role in Strategic Asset Allocation," *J. Portfolio Management*, vol. 28, no. 2, pp. 83-89.



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