

## 5 THE ROAD TO BEA

In 1988, the once-in-a-generation investment opportunity in information technology that was to unfold over the next decade was hardly visible. IBM still dominated commercial computing. It remained the environment in which other participants, whether vendors of hardware or software or services, all subsisted. In this context, I was the beneficiary of an education in innovative scientific and technical computing, courtesy of engagement with such Eberstadt clients as Daisy Systems. And I had developed a transcendently valuable relationship with John Seely Brown and his colleagues at Xerox PARC. Together, they had introduced me to networked and distributed computing architectures and novel compute-intensive applications that required sophisticated workstations.

Such technical computing, as distinct from commercial data processing, where IBM was dominant, constituted a set of niche opportunities where market segments were quantified in hundreds of millions of dollars, and potential users could be physically counted as occupants of functionally defined seats. A series of investments launched shortly after I joined Warburg Pincus illuminated a path forward toward the far larger commercial market. Not without stumbling, we incrementally conducted our own series of trials and errors, and along the way constructed a narrative of what it means to do capitalism on the frontier of technological innovation.

### **ECsoft: An Educational Failure**

The first exercise, ECsoft, proved to be a highly educational failure. It came to us by way of Lee Keet and Jack Pendray, two consultants

from the world of commercial computing, whom we had met in 1989. They had introduced us to an interesting – albeit limited – opportunity. TSI International had been spun out of Dun & Bradstreet to provide software that enabled electronic data interchange (EDI), the exchange of formatted messages between corporate buyers and sellers to allow the automation of commercial transactions. This first-generation exercise in electronic commerce depended on the painfully arduous process of negotiating protocols transaction type by transaction type, industry by industry. Worse, deployment of EDI was driven by super-hub companies such as Ford and Procter & Gamble, who understandably believed that their market power to force use of EDI by their vendors should be recognized in the split of economic benefit with such marginal providers of enabling software as TSI. For a decade TSI struggled, until it re-invented itself by developing a general-purpose tool for mapping data between different formats, renamed itself Mercator after its product, and did both in time to be swept up in the dotcom/telecom bubble. We wound up making a satisfactory return on our investment, more or less by accident and after a very long wait.

As TSI struggled for scale, Lee and Jack introduced us to what appeared to be a more attractive and far grander investment concept. While consulting across corporate Europe, they had identified a substantial hole in the market and had hatched a timely strategy for addressing it. Corporate computing had come to be dominated by IBM in Europe almost as much as it had in the United States. To the extent that corporations' operations were automated, they ran software applications on IBM computers. In the USA, a derivative industry had arisen to provide tools for developing and managing such applications. This industry had benefited hugely from the ease of identifying the specific customer in the datacenter within virtually every significant company. However, these innovative vendors of tools for the world of IBM were typically too small and narrowly focused to build sales, marketing and support operations in Europe.

To address this opportunity, Lee and Jack envisioned the construction of ECsoft, a pan-European company that would command access to datacenters and acquire the right to market and sell a portfolio of tools. ECsoft's start-up would begin with the acquisition of carefully selected providers of professional services in each of the major geographical markets: companies that provided skilled programmers to help corporate customers develop and maintain their software applications

and the computers that ran them. Headquarters would identify and license the chosen software from the United States and repackage the products for the operating subsidiaries. The timing for all this was keyed to the contemporaneous elimination of restrictions on the movement of goods, services and people within the European Union. For the purpose of geographical centrality, headquarters was established in Lyons, France, where it was supported by the excellent TGV rail service and, perhaps more importantly, by the outstanding local cuisine.

Ironically, the magnitude of ECsoft's failure as a business and an investment was a direct consequence of the initial success of its founders. The launch acquisition in April 1990 was of a Norwegian services company that exactly matched the ideal profile, not least because of its entrepreneurial leader, Terje Laugerud. Second, Léo Apotheker joined ECsoft as Chief Operating Officer, coming from Europe's leading enterprise software company, SAP, whither he would return on a path that would lead him to become CEO there in 2008 and of Hewlett-Packard in 2010. The combination of the successful Nordic exemplar and Léo's extraordinary operating skills and sheer tenacity kept ECsoft going in the face of mounting challenges. Unfortunately, the evidence did not become dispositive until we had invested some \$40 million over four years, in addition to the initial \$5 million, both to add far less ideal acquisitions around Europe and to fund stubbornly persistent operating losses.

ECsoft's failure was due to three fundamental flaws, each of which alone would likely have proved fatal. The first was that Terje's exceptional success was just that: exceptional. We learned that there is a fundamental distinction between selling services on a project-by-project basis and selling products. When a project is done, the customer owns the result in every way; the vendor has no ongoing responsibility. But a product requires support by the vendor so it will continue working as the computing environment evolves around it. Further, projects are custom-built to the customer's specifications; products, to succeed, must distill the needs of numerous potential customers, needs that can be served only approximately and by way of successive releases over time. The mindset inherent to each of the business models is critically, radically different. Outside of Scandinavia, none of the acquired companies mastered the melding of the two business models, except to the extent that Léo was present and directing operations.

The second flaw related to ECsoft's relationships with its US licensees. A licensor could meet one of several possible fates, none of which would be helpful to ECsoft. The company could succeed so well that it would demand the right to take back its European distribution. It could fail, leaving ECsoft with the responsibility of supporting its customers without the technical resources of those who had designed and developed its products. Or it could muddle along until it was acquired by one of the rapidly growing and highly aggressive aggregators of such companies, like Computer Associates. None of these outcomes promised anything but grief to ECsoft. We experienced at least one of each.

Finally – and of strategic significance that transcended ECsoft as a company or an investment – it turned out that by the early 1990s the IBM datacenter was no longer the rich and stable market for innovative tools that we and ECsoft's founders had supposed. A growing portion of corporate IT budgets was being siphoned off from the center to the periphery. Dissatisfaction with the lengthy delays in creating new applications and enhancing existing ones coincided with the availability of cheaper and more accessible computers that could be bought and deployed at the subsidiary and even the departmental level. These factors combined to feed a new open and distributed model and market for commercial computing. This was learning by doing – and failing – at its most rewarding.

And so, in 1994, we stepped back to allow ECsoft to retreat to its profitable Nordic base, where it was successful enough to return about half of our cumulative investment. We assuaged the pain of our financial loss with recognition of our gain in strategic understanding. Immersion in this most dynamic segment of the market economy provided information to us as financiers at a crucial breakpoint in the history of computing: it was as if we had been able to feel the seismic precursors of a world-class earthquake.

## **IMI and SHL: Positive Lessons**

While ECsoft was still a promising experiment, Lee Keet introduced us to yet another investment opportunity. Martin Leimdorfer, an entrepreneurial Swedish engineer with experience in the United States, had improvised his way to building an enterprise application software company in Stockholm, Industri-Matematik (IMI), one of the first

companies anywhere to deliver mainframe-class performance and functionality on Oracle's software platform.

The critical innovation was a function of IMI's success in selling its software to Sweden's largest plumbing supply company on the basis of Oracle's promise that Version 6 of the Oracle database would support 1,000 simultaneous active users. When the Oracle software failed to support even 100 users with adequate response times, IMI's engineers worked out how to multiplex transaction calls to the database in order to deliver adequate performance while ensuring that the transactions were reliably captured and accurately recorded. This imaginative technical fix would resonate powerfully a few years later when I began the conversation that led to the creation of BEA Systems.

In the meantime, IMI offered a classic arbitrage opportunity that Braudel might well have appreciated, given its geographic basis. IMI's shares were languishing on the Stockholm Stock Exchange even as, in New York, NASDAQ had matured as the chosen venue for technology-driven entrepreneurial companies, whatever their state of origin. And so, in the second half of 1991, we joined with the founder to take IMI private, one of the first such transactions executed on the Stockholm Stock Exchange. In 1996, after investing in the company's overseas growth, especially in the United States, we took IMI public at a multiple of the valuation of the former transaction. Even though IMI failed to maintain its competitive position in the face of SAP's far broader enterprise application solution, access to the liquidity of the NASDAQ market enabled us to realize more than four times our \$33 million investment.

IMI represented a positive lesson in the accelerating transformation of enterprise computing that reinforced the negative one delivered by ECsoft. The lesson was further driven home by a parallel haphazard, challenging and ultimately rewarding engagement with SHL Systemhouse. SHL was the Canadian national champion of information technology. Our investment opportunity was created indirectly by the personal bankruptcy of its excessively entrepreneurial founder, whose shares had been pledged to the Royal Bank of Canada (RBC) and to the national telephone company, Bell Canada. As joint controlling stockholders, RBC and Bell Canada recruited John Oltman, a visionary senior partner of what was then Andersen Consulting (now Accenture), as CEO. I had met John some years before. He was one of the first knowledgeable practitioners to be convinced of the pending demise of

IBM's environmental control of commercial computing. At SHL, he recruited a like-minded set of young stars from Andersen and other leading IT consulting firms.

The core strategy was called transformational outsourcing: SHL would purchase the computing resources and operations of corporate customers, securing the financing to do so on contracts to move them from the expensive and rigid world of the mainframe to the cheaper and more nimble world of open and distributed systems. SHL was a pioneer in client-server computing, whereby relatively cheap but increasingly powerful computers provided data processing and storage services to intelligent clients – personal computers – across networks. In this architecture, servers could be dedicated and optimized for particular functions, while users of the system could use their desktop computers for local applications, like word processing and spreadsheets, when they were not accessing the enterprise applications. The contrast with large mainframes, where all functions were centralized and accessed by dumb green-screen terminals, was stark.

Within two years, John and his team had sold the vision so effectively that SHL had run out of both the ability to deliver on its commitments and the cash to pay its bills. SHL was a public company in Toronto, and its public standing in Canada heightened its visibility. Its board included a former foreign minister of Canada and a former prime minister of Ontario. In March 1993, as the company worked to backfill its operational commitments, we made an initial investment through the private purchase from the company of \$32 million of convertible preferred stock.

At this point, SHL gained access to its own transformational opportunity: a \$1 billion contract to take over the IT operations of the Canadian Post Office. The only snag was the Post Office's insistence that SHL have skin in the game, some material risk of loss if it failed to deliver. I retain a craftsman's pride in the construction of a unique investment vehicle to enable SHL to win the contract. Warburg Pincus deposited \$15 million in an account at the Royal Bank that was secured by the first tier of revenues to SHL under its contract, the "hell and high water" payments that the Post Office could suspend only in the case of proven fraud on SHL's part. In turn, we received warrants to buy common shares in SHL equal in aggregate exercise price, at the then price of the stock, to the amount of our deposit. In this case, our own cash served as the hedge against loss, while the warrants gave us an

infinitely leveraged upside opportunity to share in the profits if SHL delivered.

On the back of the Post Office contract, SHL led the market in demonstrating that enterprise-class application software could be built and deployed on client-server computer networks outside the glass house of the IBM datacenter. But its business model as a public company was compromised by the fact that the senior consultants John Oltman had hired came from their private partnerships with very high cash compensation and minimal orientation toward stock-based rewards. Here was a disconnect: the compensation system that John had to use in order to mobilize outstanding talent at the Schumpeterian frontier of the market economy entailed appropriating value from the public stockholders who financed the company. With my active support, John organized and led a major internal exercise to reconstruct the expense base of the company by convincing his team that they should trade their existing employment agreements for much lower cash salary and bonus provisions, offset by significant stock options. The shift was not trivial: it offered to improve SHL's operating profitability by as much as 10 percentage points and to align the incentives and rewards of the talent with the returns to the stockholders.

Not every owner of equity was happy with the outcome. It happened that the second largest stockholder of SHL after Warburg Pincus was the State of Wisconsin Investment Board (SWIB). SWIB was a pioneer in seeking to impose good governance principles and practices on its portfolio companies. Among these was an absolute limit on the percentage of a company's outstanding shares that could be represented by employee stock options. SHL's new compensation plan exceeded SWIB's ceiling by a modest amount, a violation that turned out to be life-threatening to the company. The moment at which SWIB announced that it would vote against the new compensation plan coincided with a critically needed infusion of cash through a rights offering to SHL's stockholders. This offering, underwritten as to 35 percent by Warburg Pincus, was substantively justified by the increase in profitability promised by the new compensation system.

SWIB's decision hit the market as the SHL board was meeting at dawn in Mexico City to authorize the rights offering. On the way into the hotel from an early morning run I managed to stumble and cut my knee. So I joined in contemplating the unpleasant alternatives before us while still in my running gear with blood streaming down my leg.

The transaction held together long enough for me to shower, change, get bandaged and join John Oltman on a mission to Madison, Wisconsin. With the clock ticking, we offered SWIB the alternatives of compromising its principles or seeing SHL go bankrupt. Common sense prevailed.

## The Rise of Equity-Based Compensation

The argument over modalities of compensation at SHL has a broader significance. The 1990s was the decade when equity-based compensation plans proliferated. In 1976, two academics, Michael Jensen and William Meckling, had written a highly influential article that identified the “agency problem” between the owners of a corporation and its senior executives, who were nominally responsible to the stockholders but were motivated by their own incentives, which were distinct from the returns received by their ostensible principals.<sup>1</sup> In this, Jensen and Meckling were explicitly redeploying the insights Adolf Berle and Gardiner Means offered in their 1930s study *The Modern Corporation and Private Property*.<sup>2</sup> By 1994, seven out of ten chief executives of American corporations had received stock options, up from one in three in 1980.<sup>3</sup> The manner in which enormous one-way options incentivized stupendously excessive risk-taking in the banking sector, and outright fraud at such companies as Enron and WorldCom, has become conventional wisdom. But there is another aspect to the role of stock incentives.

The Innovation Economy by definition is saturated in unquantifiable uncertainty. The emergence of a venture capital industry focused on funding start-up companies was supported by recognition of the need to offer abnormal rewards for success. The goal was to construct an economic asset in the hope of eventually monetizing it in the public equity markets. The possible returns had to be abnormally high, given how very rarely it was reasonable to expect such success to be realized.

<sup>1</sup> M. C. Jensen and W. H. Meckling, “Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure,” *Journal of Financial Economics*, 3(4) (1976), pp.305–360.

<sup>2</sup> A. Berle and G. Means, *The Modern Corporation and Private Property* (New York: Macmillan, 1932).

<sup>3</sup> J. Cassidy, *How Markets Fail: The Logic of Economic Calamities* (New York: Farrar, Straus and Giroux, 2009), p.292.



By 1980 or so, we were calling equity-based compensation “Silicon Valley socialism”: every employee in a start-up, from the CEO through the technical architects and programmers to the receptionist was entitled to participate. In return for leaving behind the predictability of the established franchise players in the market economy – Digital Equipment Corporation, IBM, Hewlett-Packard – volunteers for the frontier received tickets to a lottery in which the odds were hugely skewed against them. And not only start-ups faced these odds. I and my partners at Warburg Pincus had been drawn to SHL Systemhouse in the first place by its potential for reinvention as an agent of innovation in the transformation of commercial computing architectures. We were going up against IBM on its most central home ground. This was what SWIB emphatically did not get.

The displacement of Silicon Valley socialism to the major commercial banks, whose acceptance of risk and tolerance of uncertainty were legally underwritten by the Federal Deposit Insurance Corporation, was an error of private and public policy with enormous negative consequences. It went hand in hand with the radical withdrawal of regulatory oversight, from the IRS to the SEC, from the Reagan Administration through that of Bush II. One of the lessons of life as a venture capitalist was drilled into me by Tom Connors, a remarkable operating executive turned independent consultant and director, with whom we at Warburg Pincus built a close and collaborative relationship: “Don’t expect what you don’t inspect,” Tom used to say.<sup>4</sup>

Venture capitalists were and are positioned and motivated to inspect their agents through intimate engagement, of which board membership is a formal expression. As Berle and Means had discussed as early as 1932, public stockholders are neither positioned to exercise such vigilance nor motivated to do so: discomfort with management is expressed through the friction-free action of selling the stock.<sup>5</sup>

<sup>4</sup> Tom was a tough guy. When one of the business unit managers of Zilog sought a measure of understanding for failure to meet budget, Tom’s response was: “You want sympathy? You can find it in the dictionary, somewhere between shit and syphilis.”

<sup>5</sup> For a recent analysis of how the rise of index funds has worsened the agency problems between institutional investors and the managers of their portfolio companies, see L. A. Bebchuck, A. Cohen and S. Hirst, “The Agency Problems of Institutional Investors,” *Journal of Economic Perspectives*, 31(3) (Summer 2017), pp.89–112.

The accountability problem is compounded by the fact that executive management has the ability to select its own overseers, the board members who are supposed to represent the owner or principals. These factors explain how the players in the market economy manage to structure the governance aspect of the game with financial capitalism to their benefit.

### The IBM Environment Starts to Open Up

As SHL was surviving its own extended soap opera, IBM was beginning to wake up under its new CEO, Lou Gerstner. The first stirrings came in its invigorated services business, where IBM's very low cost of capital allowed it to fund outsourcing contracts on a basis with which SHL could not hope to compete. In the autumn of 1995, as John Oltman and I contemplated possible business combinations that might strengthen the company's competitive position, I received an unusual voice message that addressed our concerns definitively. It was from the head of business development of MCI, then the old, original AT&T's leading competitor in long-distance telephony. "We have decided we want to buy SHL," the voice said, thus initiating the easiest negotiation of acquisition terms I have ever enjoyed – a negotiation that began with my response: "What makes you think SHL is for sale?"

Less than three years with SHL had convinced me that IBM, for all of its financial might and technical prowess, was a crippled giant, a prime example of the innovator's dilemma. Although its services business was beginning to assert itself, its proprietary product lines were so profitable that it could not afford to undercut them by pursuing growth opportunities that carried the much lower margins of computers leveraging open interfaces and open standards.

Moreover, IBM had suffered from a double psychological trauma. First, its comprehensive effort from the late 1970s to invent an entirely new, next-generation computing architecture known as Future System – in emulation of its defining success twenty years before in establishing System 360 as the world's standard for commercial computing – had failed. IBM was left with one hugely successful but entirely closed product, the AS400 mid-range computer. Second, the seemingly endless antitrust assault by the Justice Department during

the 1980s had diverted management's attention and frozen the company's once ferocious competitive instincts.<sup>6</sup>

IBM's reluctance to compete with itself was illustrated by an anecdote that I heard when I was attending one of Esther Dyson's PC Forum conferences around 1990. I was walking back from dinner with John Seely Brown when we were accosted in friendly fashion by a brilliant computer engineer whose name I had heard but whom I had never met. Andy Heller had a tale he had to tell. He was based in Austin, Texas, where he had led IBM's program to develop an open competitor to the highly successful computer servers being delivered by Sun Microsystems. It was called the RS6000. As the technical effort reached fruition, Heller was summoned to IBM's Armonk headquarters to present his business plan, which anticipated establishment of a cash-generative business on the order of \$600 million in three years, an ambitious goal by almost any standard.

It turned out that the details of the plan were entirely irrelevant because Heller had been bushwhacked. When he entered the conference room, he found that the team from Rochester, Minnesota, responsible for the AS400, was already there. In the previous year, as I recall the orders of magnitude, the proprietary AS400 had delivered no less than \$14 billion of revenue to IBM and \$10 billion of operating cash flow. The RS6000, identified as a threat to the monopoly profits of the AS400, was dead on arrival. Heller's career at IBM ended when he resigned to turn venture capitalist himself.

Whatever its apparent vulnerabilities, for a generation IBM had conditioned the marketplace about what to expect from an enterprise-class computing system. It was clear that if the open technologies being delivered by a host of innovative vendors were to be successfully sold and deployed on IBM's turf, they would need to deliver the mainframe levels of scalability, reliability, availability and security (collectively known in the trade as the "-ilities") that IBM's customers had come to take for granted. It was in this context that I renewed an acquaintance with a remarkable sales executive out of the heart of the commercial computing universe.

Mike Fields never went to college. The son of West Indian immigrants, Mike had discovered early on that he was a killer salesperson. He advanced from Burroughs to Applied Data Research (ADR),

<sup>6</sup> For a thorough analysis of how IBM became stuck, see P. Carroll, *Big Blues: The Unmaking of IBM* (New York: Crown, 1993).

one of the many companies selling software tools for IBM mainframes. Mike and I first met when he was leading a team of second-tier ADR executives on a quixotic quest for funding to enable a management buyout. I was particularly impressed that in doing so he was directly competing with his boss and the other top-tier executives who were trying to put together their own deal as the company was in the process of being divested by Ameritech.

As it turned out, ADR was purchased not by one of its competing management teams but by Computer Associates. Mike moved to Oracle. In 1992, he approached me with a very interesting idea, one that matched the lessons I had been absorbing. The proliferation of computing systems outside the corporate datacenter was creating both a major business problem and a major investment opportunity. Initially installed in sales offices and subsidiary production and distribution facilities to provide local managers with timely reports, they were increasingly being devoted to doing real work – that is, to managing business processes that involved cash obligations and receipts. At the core of these computer systems were the relational databases that Oracle and its competitors sold. These had been developed as flexible report generators. But they were maturing – somewhat haphazardly, as IMI had discovered – into software platforms for business applications that captured transactions of all kinds.

Distributed not merely in technical terms but also across business geographies, these client–server systems were barely visible to central IT management staff, let alone subject to their disciplined management. Moreover, the increasingly standard operating system running the hardware underneath the database was some variant of UNIX, developed in AT&T’s Bell Labs and licensed widely in line with the rules according to which AT&T had been allowed to maintain its monopoly in telecommunications. UNIX itself was maturing as an alternative to IBM’s proprietary systems software but was alien to the expertise of IBM-centric staff. And the client–server architecture that linked servers and PCs across networks was entirely different from the centralized mainframe supporting arrays of dumb terminals. Finally, all of these hardware components and the software that ran on them came from a variety of vendors who neither in principle nor in practice could deliver the seamless integration of IBM.

Addressing the need for “distributed systems management,” as Mike laid it out, required building a business from the assembly of two

types of components. The first comprised software: products that would deliver the sort of utility functions, like data back-up and recovery, that were taken for granted in the mainframe world. On this score, my mantra was apt; there was indeed more technology around than anyone knew what to do with. Every vendor of computing hardware that was competing around the periphery of IBM's empire was providing all sorts of ancillary systems software to support its version of UNIX. In addition, numerous start-ups were entering the various niches in the emergent market. The availability of relevant technology was not the constraint.

What was also required was a new sort of dedicated sales force. The mainframe systems software industry had grown up in symbiotic relationship with IBM and had enjoyed easy access to its customers. With corporate computing resources concentrated in the datacenter, finding the customer had been so easy that vendors of the simpler sort of tools relied on telephone representatives dialing for dollars to generate leads and close sales. But the new distributed computing systems were just that: distributed. Oracle made the most widely adopted database and application platform, one that could run on just about every computer in production anywhere in the world. Its sales force had a unique ability to find the target customers.

## OpenVision Technologies

In simplest form, Mike's proposition was to acquire a portfolio of systems management products to feed a direct sales force that he would recruit largely, of course, from Oracle. In June 1992, Warburg Pincus agreed to back Mike and his immediate team, and we launched OpenVision Technologies with a commitment to fund up to \$25 million on terms agreed in advance. If this "line of equity" were fully drawn, we would own a share of the company determined up front, the founders would own their agreed share, and both would be diluted by a pool of stock options reserved in advance for future employees.

The structure was an innovation, constructed in direct contrast to the traditional venture capital funding model of multiple rounds of investments with multiple firms investing per round. The conventional model was rationally designed to spread risk across investing firms and through time. At start-up, typically, two or more funds would invest in

the A Round, with no contractual commitment to make a follow-on investment. Each subsequent round would be priced on the basis of then-current conditions: both internal progress against benchmarks, such as product development and customer acquisition, and the state of the external economic and financial environment. And each round would be open to new investors, although preemptive rights to invest would likely have been secured by the venture capitalists in previous rounds. Furthermore, some degree of protection against dilution by subsequent funds coming in at lower prices would almost always be in place.<sup>7</sup>

The standard model had multiple flaws relative to the strategy we were adopting. Designed to fund the development and commercial launch of a new product, an essentially linear process, it mapped poorly to a hybrid strategy that contemplated opportunistic acquisitions from the start. From management's point of view, the ability to execute such a strategy would be radically compromised if every initiative had to wait on a successful exercise in incremental fundraising. In addition, given my own education in the value of control, I was uncomfortable with its distribution across different tiers of investors, each with a different cost base of investment. This source of potential conflict was compounded by the fact that each venture firm was bound to be at a different phase in the life-cycle of its own fund and firm. In today's environment, characterized by an IPO market that is hardly accessible to any ventures that actually need the money but supported by Unicorn-style funding from unconventional sources, the relevance of a venture strategy whose focus is the achievement of positive cash flow at the earliest possible date will again become obvious.

Warburg Pincus had the cash to fund a venture such as OpenVision, but it only made sense to do so if we had unequivocal control. Delivery of funds under our commitment had to be entirely at our discretion. Our approach did give up the external market test represented by the willingness of other firms to invest, but it was subject to the regular scrutiny of all of the partners of the firm, each of whom had a keen economic interest in the state of play.

As is common among venture capital firms, but vanishingly rare among private equity firms, all Warburg Pincus partners eat off the same

<sup>7</sup> The canonical text that documents and analyzes the conventional venture capital model is P. Gompers and J. Lerner, *The Venture Capital Cycle*, 2nd edn. (Cambridge, MA: MIT Press, 2004).

plate. That is to say, each partner's interest in the firm applies to all of the investments the firm makes: a 1 percent partner based in New York and investing in healthcare, for example, has the same 1 percent interest in IT deals in Silicon Valley and energy deals in Texas. This structure motivates and rewards a culture of collaboration; it also provides a powerful incentive across the partnership to monitor the portfolio. In the case of OpenVision, strict scrutiny would be exercised at the time of each additional funding decision and not less often than quarterly.

By the summer of 1994, two years into the investment, three facts were clear, relative to the hypotheses on which OpenVision had been founded. The first two were positive at first blush. There was indeed a surfeit of software tools to acquire from the indicated sources. OpenVision had bought no fewer than eighteen of them, too many for its technical team to integrate and support. And the perceived market for the sort of utilities OpenVision was created to provide was evident and growing, but the company's ability to serve the market effectively was undermined by the distractingly large and unintegrated product portfolio. Along a third critical dimension, operational integration of the acquired business and products, OpenVision's performance was worse than inadequate.

By this time, Warburg Pincus had fully funded its original \$25 million commitment and had spent some \$15 million more to finance both acquisitions and operating losses. Moreover, the investment banking firm of Alex. Brown had placed an additional \$25 million of convertible preferred stock with institutional investors, at a price pleasingly above our cost, in the sort of post-venture private placement that we had pioneered at Eberstadt. But the company was bleeding cash.

I recall sitting on the floor of the "telephone room" in the house my wife and I then rented on the downeast coast of Maine, participating in a board of directors' conference call in August 1994. The news was not quite as dire as what I had learned over the back fence about the state of play at BRL some dozen years earlier. Most importantly, there was no question about where authority lay to act in response to the news. And, in opportune fashion, Mike Fields had already introduced me to an exceptional candidate to step in as war leader in the struggle for business and investment survival.

In parallel fashion to Mike, Geoff Squire had dropped out of high school in his native country of England when he was fifteen to program computers for Gloucestershire County Council. Subsequently

employed by the British subsidiary of CACI, a US consulting firm, he had discovered that his employer had acquired the UK license for the Oracle database software but had no interest in trying to learn how to sell a software product. So Geoff left CACI with the right to bring Oracle to market in the United Kingdom. His success there led to his joining Oracle in order to build out its business across Europe, country by country, and then to Japan and the rest of Asia. In each geography he bootstrapped the business by selectively selling limited distribution rights to fund the recruitment of sales and service professionals. In less than a decade he had built a \$1 billion, highly profitable business, drawing no capital from Oracle's headquarters in Silicon Valley.

Geoff had been liberated from Oracle early in 1994 when Larry Ellison, Oracle's founder and controlling shareholder, decided that Geoff's decentralized model, which endowed strong local managers with the mandate and the resources to meet local market needs, had to yield to a centrally directed, integrated organization designed to serve global customers. Geoff had agreed to advise Mike on OpenVision's European operations, but he was understandably committed to an extended period of recuperation. I hung up on the conference call and reached Geoff in England. He agreed to get directly involved as soon as he returned from a long-planned cruise.

Geoff was on the job by Labor Day to conduct an exhaustive analysis of the company and soon laid out a turnaround plan for John Vogelstein and me. John asked him how much more cash he would need: the answer was about \$10 million. John said we would reserve an incremental \$15 million. In November, with Mike's enthusiastic support, Geoff signed on as CEO. It was the smoothest transition in which I have ever played a role. This time all three elements were in place to execute an effective hedge against the unanticipated: cash, control, and effective new leadership.

The remainder of the story has two parts: building a great business and reacting to the market's valuation of it. For the former, within twelve months, Geoff had reduced head count by one-third and doubled revenues. He did it by determining which products were actually being bought, closing down those that were not, and concentrating all resources behind those that were. The key technology, acquired from a second-tier computer company, Control Data, managed the efficient back-up of data across computer networks whose scale and complexity were growing with the business significance of the exploding number of



applications running on them. By the spring of 1996, OpenVision was solidly profitable and growing fast: an initial public offering at an attractive valuation followed. Six months later, the process that led to the most successful merger in the history of enterprise software began.

## The OpenVision/VERITAS Merger

Compared to the arduous path we pursued through OpenVision's birth and rebirth, Mark Leslie, a technical expert with sales and marketing experience, had created a significant business in utterly inverse fashion. He had been recruited to try to save a failed computer company, Tolerant Systems, whose lead venture capital investor was none other than Fred Adler. Mark's death-bed diagnosis identified two pieces of software for managing data efficiently and reliably within the confines of a discrete computer. They had been developed to give Tolerant's machines a competitive edge but potentially had wider application in the world of UNIX systems. Mark and his team, having renamed the company VERITAS, turned the proprietary code into stand-alone products. The commercial breakthrough came when Sun Microsystems contracted to embed the VERITAS File System and the VERITAS Volume Manager into its version of UNIX. Other vendors of workstations and servers followed. By 1996, VERITAS also was a publicly traded, highly profitable, fast-growing systems software company.

That autumn I received a phone call from Steve Brooks, a director of VERITAS whom I had known for years as a shrewd and knowledgeable technology investment banker. The purpose of the call was to introduce the idea of bringing VERITAS and OpenVision together. The complementarity appeared to be extraordinary. VERITAS's products managed data at the level of the computer operating system. Its channel to market was through original equipment manufacturers who incorporated the software into their own systems and paid royalties to VERITAS for the privilege. OpenVision's major product backed up and restored data across large-scale networks of computers. It appeared likely that the two technologies could be integrated to provide unique functionality for managing data. At least as valuable an asset was OpenVision's direct channel to enterprise customers through its own sales force.

Each company was on target to achieve somewhat more than \$30 million in annual revenues, and both companies were generating

cash, although VERITAS's business model was inherently more profitable. My response was to suggest that Geoff Squire and Mark Leslie meet. The outcome was expressed with characteristic crisp precision by Geoff when he called me immediately after the meeting: "We have to put these two companies together, and you should know that Mark will run it."

We agreed on the terms of trade by the end of 1996, and the merger was completed in the following April, with VERITAS as the surviving entity. One incident along the way illustrates yet again the inherent uncertainty of economic life and the relevance of that one conjoint hedge – Cash and Control – available to mitigate it. Just as the terms of the merger were being documented for shareholder approvals, the outstanding head of the OpenVision sales force advised Geoff that he had received an offer he could not refuse to become CEO of a start-up. The venture backers who were recruiting him had convinced him that the worst imaginable outcome would yield him \$1 million.

Having lived through the ups and downs and ups of OpenVision, the head of sales was all but committed to the new opportunity, and his wife was supporting the move. So I flew to San Francisco to meet with the two of them in a private room next to the American Airlines Admirals Club, having had a brief conversation with John Vogelstein before I left New York. In the course of two hours, I managed to convince them that Warburg Pincus would reserve \$1 million as a back-up insurance policy in case the merger with VERITAS did not pay off personally in equivalent or greater amount. The ability to seal that agreement with a handshake represented the outward and visible authority conferred by Warburg Pincus. I subsequently learned from Mark that he considered the head of sales crucial to the success of the merger: his loss would have killed the deal.

Which would have been expensive! The OpenVision/VERITAS merger closed as the great dotcom/telecom boom and bubble were beginning to gather force. The two companies, which had separately recorded sales of \$36 million each in 1996, combined to generate \$1.2 billion of sales in 2000, augmented by one additional acquisition. The market value of VERITAS peaked in 2001 at more than \$40 billion. In response to the emergent bubble, and driven by the mutually reinforcing effect of John Vogelstein's study of the equity markets through the ages and my own direct education at Cambridge in the market history of 1929, we began to distribute our shares to our limited partners in the

summer of 1998. By October 1999, we had fully distributed our investment position for a cumulative value of \$750 million, measured as of the date of each distribution, versus a total cost of \$55 million. Those shares, priced in aggregate at the peak of the bubble, were worth \$4 billion. Bernard Baruch, the legendary stock market speculator and presidential advisor, is said to have remarked that he had made all his money by “selling too soon.”

Building OpenVision and merging it with VERITAS completed an accelerated education in the magnitude of the opportunity opened up by IBM’s loss of environmental control of commercial computing. That education extended back from the dynamics of the marketplace to define an investment strategy and to prove a business model jointly crafted to exploit the opportunity at high speed and at large scale. Along all of these dimensions, OpenVision proved to be the dress rehearsal for the launch of BEA Systems.<sup>8</sup>

<sup>8</sup> VERITAS was subsequently acquired by Symantec in 2004. A dozen years later, Symantec sold VERITAS to the private equity firm Carlyle which recruited as CEO none other than Bill Coleman, founder of BEA Systems, whose story is told in the following chapter.