Graduate School of Business **S-SM-48**
STANFORD UNIVERSITY **05/26/98**

SIMVOICE CORPORATION

On the evening of May 20th, 1994, Robert Crusoe, while driving to his home on the outskirts of Denver, was slowly recovering from the day's unpleasant surprise. He had presided over a board meeting that had gone out of control and had turned rather frustrating and hostile. What had happened? Why were his investors so upset with him? And how should he handle the situation from this point forward?

History of SimVoice Corporation (SVC)

In April 1991 Robert Crusoe (29), while completing his MBA at the University of Colorado in Denver, conceived of the idea to transmit voice and data simultaneously over a single telephone line. By that summer he had assembled a team of business and engineering students at the University of Colorado in Denver to explore the market and technical feasibility. He co-founded the company with John Selkirk (31), who was also completing his MBA and he had teamed up with Steve Thurston (32) and Harmon Satchell (44), both engineers at Boeing. Robert met Steve in a business planning course at the University of Colorado in Denver, who recruited Harmon from his previous work at Boeing. (Appendix A contains additional biographical information.)

The company originally was founded on the idea of 'telewriting,' the ability to exchange handwritten messages with voice across phone lines. The market need was supported by a preliminary survey among local firms included in the company's first official 'Business Plan' in December 1991. Patent searches indicated that the area of technology had little coverage with respect to digital technologies. Early attempts to produce products in this market had failed due to outdated analog technology, price and low data throughput. The team felt that advanced digital technology would enable much higher data throughput with better voice quality.

The key to obtaining funding was for the team to develop a working prototype. The fastest PC at the time was a 386, 33 MHz, which was not fast enough to process the enormous amount voice compression code in real-time. The company's challenge was to develop software for high-speed digital signal processing chips, which required custom circuit boards for interfacing to the real world. By the spring of 1992, Steve and Harmon

Prepared by the founder of SimVoice Corporation, with the help Assistant Professor Thomas Hellmann, and the other team members of SimVoice Corporation. The name of the company and the names of the people involved, as well as some of the locations have been disguised. This case is intended as a basis for classroom discussion, rather than to illuminate either effective or ineffective handling of an administrative situation.

led a top secret university development team that produced a simple working model using prototyping boards. At that time the team was convinced that the project was technically feasible.

Robert and John spent the summer of 1992 developing the company's first business plan with the mission to "develop a family of telecommunications protocols which enable the exchange of text or graphics during a normal phone conversation." That same month, after weeks of nervous deliberations the team received letters from Boeing's ethics advisors indicating that they were free to pursue the project. Now with the green light, the team committed 'full overtime' (evenings and weekends) to developing a working prototype of sufficient quality.

The company made it's first presentation to private investors in November 1992, seeking $1 million. The plan identified several market opportunities, but identified the Nintendo Game Boy market as the first. Game Boy, with over $1.2 billion in revenues, had an installed base of 2-player software, and its customers were always hungry for new product features. The Game Boy platform forced the company to design for low cost and high performance. The team had also managed to find a mentor at Nintendo. Responding to difficult questions, the investors gave the team it's first impression of the high expectations of these private investors. The meeting ended with an assurance that funding could be found if the investors could see a working prototype.

In January 1993 the company filed its first patent and started approaching Nintendo and Sega. By March, Steve and Harmon had demonstrated a working prototype of Game Boy and was in discussions with a potential investor who wanted to work with the team. When Nintendo refused to sign a non-disclosure agreement, the team went to Sega. In April the team made demonstration to Sega. Unknown to the team, there were negotiations with AT&T in the room next door.

In June 1993, the founders attended the Consumer Electronics Show in Chicago with an eerie feeling: for the first time a major telecommunications company had announced their entry into the gaming business. The team was shocked to learn that Sega and AT&T had announced a partnership to deliver 'The Edge', a simultaneous voice and data modem targeted to the gaming market. Closer inspection of the booth and materials revealed that AT&T had developed the 'voice' connection to their modem product at the last minute. Brochures prepared weeks earlier, however showed no hint of a telephone for allowing players to talk while playing. In the minds of SVC, Sega had presented the concept to AT&T who agreed to add voice as a part of the closing of their deal.

In the spring of 1993, Robert had become frustrated by his potential investor's last offer of $20k for 20% of the company. He set out to attract private financing differently. With the help of one of his mentors, he reserved a room at a fine Athletic Club and started inviting executives to attend private presentations. Meanwhile Robert had been seeking a CEO candidate through the services of a local executive recruiter. That month he was introduced to a senior executive departing from US West Cellular named Dan Jameson.

Dan visited a presentation at the athletic club and immediately saw the potential for the company's technology. Soon after that, Dan started working with the team to refine their business plan and by the end of summer identified a group of three investors interested in funding the company's startup. Dan introduced the team to Duke Weymouth, a successful real estate broker who referred the deal on to William Dampier and Richard Steele for due diligence. Dan didn't know William or Richard.

Duke was the son of a prominent local investment banker. He was recognized for his tenacity and shrewd deal making ability and quickly became one of the most successful young commercial real estate brokers in the region. As a Denver native, his personal network ran deep and included several local millionaires among his personal friends. As a private investor, Duke's primary interest was to create a quick return on investment. He indicated that he would want to take a more passive role in the company.

William was viewed as a tough "high tech" executive with a Harvard MBA. In his current position as a CEO of a high fidelity consumer audio components company he faced a turn around situation that involved a substantial amount of downsizing. His first position as a CEO had been with a company that designed mud flaps for trucks. In 1986 he became president of a software company that he sold to its competitor in 1989. This company had been one of the state's largest software companies. It grew to 70 employees with 1989 sales of about $7 million, claiming 35% of the low-end computer-aided design (CAD) market. He had also founded a screen saver company that he later sold quite successfully.

Richard was the co-founder of a successful software company that provided shrink wrap connectivity tools. He had gained an estimated $20 million with his company, making him the wealthiest of the three investors. He had led their sales and marketing efforts, which grew steadily every year in a company that never required outside equity or debt financing. In 1993, Richard's company had sales of about $67 million, but many people wondered whether the market had reached its saturation point, as growth had begun to stagnate. Richard had a great sense of humor, which made it obvious why he had been so successful in growing sales. He was also particularly fond of golf and he inquired whether SVC's product could allow for simulated golf on the PC over the phone lines. Unknown to most people at this time, Richard was preparing to leave his company due to disagreements with his partners. Some people also admitted in private that he was past his prime and that he was not entirely up to the challenge of taking his company to the next level.

The team first presented to this new set of investors in August 1993. They answered questions that were not nearly as difficult as the previous investor meetings. Within four weeks, the investors had entered into due diligence and by mid-September a deal was in the works.

During that time Steve and Harmon were facing increasing family pressures due to spending nearly all of their spare time for the past two years with a startup that couldn't raise capital. From the experiences of all of the previous investor meetings, their spouses

were very skeptical that this investor group was really going to work out. They drew a line in the sand, insisting that if funding didn't occur by Thanksgiving, they would get their husbands back and thus the project would die.

By early November, eight weeks after the last exchange of term sheets, the investor group still had not produced a deal for the team to review. The company had lived off the personal contributions of the team and had little cash left. With Thanksgiving approaching fast, the team was getting very nervous. Calls to the investors' attorney revealed that the deal had been sitting in an in-basket for six weeks. The attorney was busy doing a $100 million bond deal and neglected to pass it on to a junior attorney for processing. Robert called William, the lead investor who responded that 'these things take time.' But William called their attorney who handed it off to a subordinate and the deal was completed within a week. The company agreed to sell 25% of the company for $250k at $0.75 per share, giving a pre-money valuation of $750,000. The accompanying employment agreement included a clause that the company had the right to buy back the founder's share at a price of 1 cent in case that the founders did not meet certain technological milestones. See Appendix B for some excerpts from the term sheet and the employment agreement. Robert picked up the checks as team members gave their employer two weeks notices. Richard even inquired about his involvement as VP of marketing for the company, which Robert took as a compliment, but hesitated to respond.

With the financing in place, the company was now set to go. In order to conserve cash the team set up offices in everyone's homes. In January 1994 the team attended the winter CES trade show and saw working models of the AT&T products. In a major media blitz the CEOs of AT&T and Sega played each other while talking across the convention center using standard telephone lines. The market for DSVD seemed to be heating up.

Robert spent half his time working as a technician to Harmon, procuring parts and developing circuit boards. The major task was to develop a successful working prototype, the primary milestone established at the closing of the first round. Robert spent his remaining time doing market research and working with John on the business plan that would be expected once the milestones were completed. Robert and John also sought advice from various mentors on how to hold the first official board meeting, which was scheduled later in the month.

The first official board meeting held on January 12, 1994 was awkward. The board consisted of Robert and John, William, Richard, and Dan. Duke attended as an investor without board seat. Robert and John met some of their investors/board members for the first time in Duke's office. The meeting voted in the directors, and reviewed the current expenditures, budget forecast, and milestones. Robert was elected Chairman of the Board and moved to discuss the role of board. The investors/board members decided that the board's role was to "1) to steer the strategic direction of the company, 2) to be involved in major decisions, 3) to challenge the thought process in the general course of operations."

Throughout the next two months the team worked day and night to complete the prototype which had suffered delays from late part shipments from vendors. In addition, the software complexity had grown to a point where it had reached maximum capacity within the microcontroller chip. This had major ramifications as the team had to find a solution or abandon the code created over the past twelve months for a new development system. A board meeting at Robert's home informed investors of the issues and they started to grow impatient, with one expressing a decrease in confidence. At the same time cash was burning at a rate of $22k per month, giving the team until August (Figure 1).

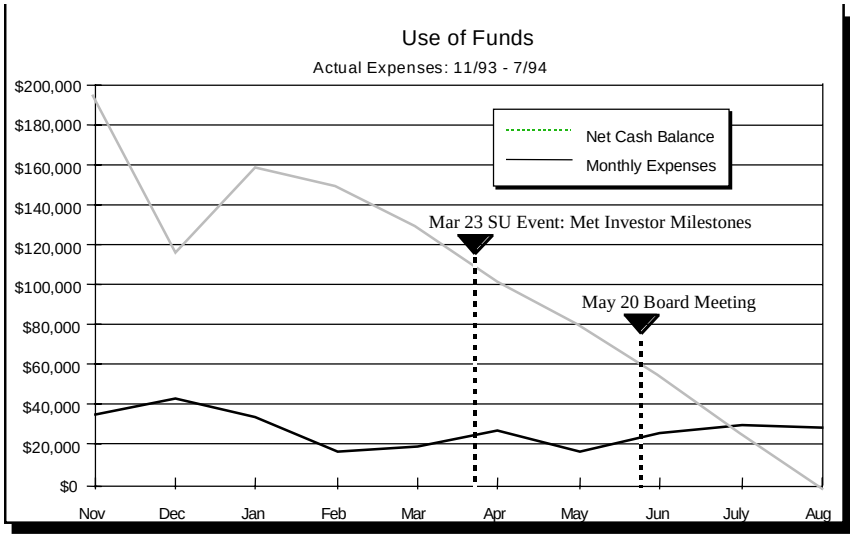


Figure 1: Use of Funds and Cash Balance

With cash in the bank for another six months, Robert and John aggressively worked on the next round business plan, investing more than two hundred hours between February and mid-March alone. They recognized that there were many holes in the marketing plan regarding segmentation and pricing and they sought advice from their investors/board members. On several occasions after the board meeting, Robert had met with Richard to discuss his involvement in assisting with the marketing plan. When a business plan draft was available in early March, Robert met with Richard. Richard took the plan, weighed it in his hands, flipped a few pages and said: "All I know is that it's wrong." But Richard was able to help in a few brief office visits where he would place a call to an old friend and offer an introduction. Robert's requests for CEO and investor introductions to assist in bridge financing, however, went unanswered. Richard's interest was also diverted by the startup of his daughter's cookie business. As a consequence the founders felt that they were somewhat on their own when it came to developing the business model and seeking out potential customers.

Initially the company had focused its effort on a large volume sale to Sega or Nintendo, but in early 1994 the lack of progress lead the founder to shift their focus to the PC. To better market it, SVC had named their protocol "Mirra." The use of the Mirra name was meant to be analogous to the use of "Dolby" in records and stereo equipment. By using it on both hardware and compatible software, the company figured it would simplify the

purchasing decision by consumers as both sides of the telephone connection required a compatible device.

At the CES trade show in Chicago in January 1994, SVC also had met some people at ThrustMaster. ThrustMaster Inc. was the primary supplier of hardware accessories to the simulation market. These accessories include flight control systems, weapons control systems, rudder pedals, special circuit cards and even full-size cockpit mockups (Figures 2a and b). ThrustMaster had gotten its start in 1990 by developing a high end joystick for PC-based flight simulation game software. As games became more sophisticated, ThrustMaster developed cooperative relationships with game developers to ensure that games would support the controls for the ThrustMaster joysticks. Sales took off as users demand rapidly grew for increased realism using the ThrustMaster joystick. ThrustMaster was perceived as the innovator and had the greatest share of the flight simulator market. At the time, no modem suppliers had developed any products targeted specifically at this market segment.

Figure 2a Flight Control System ($99.95)

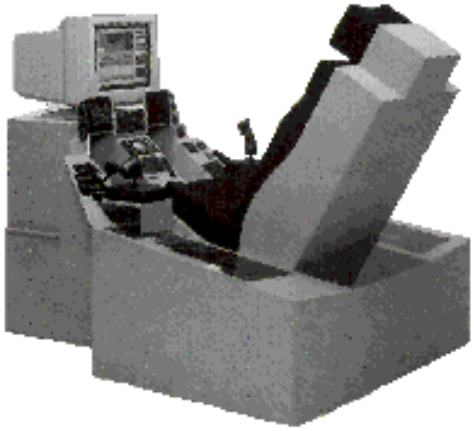


Figure 2b Flight Sim Cockpit ($1022)

To SVC, ThrustMaster appeared to be an attractive potential customer and it seemed to be an attractive back door to the lucrative PC gaming industry. In the month to follow, the team made several trips to the company's headquarters in Portland to demonstrate their prototype and discuss product design.

During that time, Steve managed to solve some of the software issues. Harmon, however, was still unable to get a stable modem connection. In February the team traveled to Silicon Valley to meet with the modem chipset vendor, Phylon, for technical assistance and to explore a potential partnership. In an all night session, the team solved the technical glitches and within a week the prototype was functional.

Robert rushed back to set up a meeting for staging the announcement. Investors and advisors were relieved given the enormous effort by everyone. The event was to be a low budget, classy reception where everyone could have drinks, mingle and take photos. On March 23, the company hosted a private meeting for shareholders and guests at University of Colorado in Denver to review the prototype. Robert presented an early

version of the business plan, highlighting the market potential for the technology, and purposely omitting any financial projections. The meeting ended with everyone in high spirits and investors felt reassured that this company 'really had something.' While everyone attended, to the team's amazement none of the investors actually tried the prototype at the meeting.

By this time Phylon still had not figured out what SVC was developing and traveled to Denver on April 12 to demonstrate a new voice-data modem they were about to announce. Both prototypes were set up in Robert's home with SVC demonstrating superior quality over Phylon's. Phylon was excited, since the SVC product used their chips and generated the feeling that a partnership was possible. Phylon invited the APS team to present their prototype in an upcoming meeting for the TR-30 modem standards committee in New Orleans in May. The TR-30 committee recommended standards for manufacturers of modem-related products worldwide. Members of TR-30 are mostly modem companies, including AT&T labs, Hayes, US Robotics and Phylon.

Robert and Harmon attended the TR-30 ad hoc meeting on May 17, 1994, sitting quietly as about thirty representatives of the industry giants sat around a large table discussing technical babble. After the meeting AT&T announced a happy hour in their suite for anyone who was interested in viewing their VoiceSpan modem.

Robert and Harmon set up their prototype in their own little hotel room before heading over to the AT&T happy hour. There, they were greeted warmly and soon recognized that they were amongst some of the world experts in modern modem technology. When the beer ran out, Robert and Harmon decided to host a 'small demo' in their modest hotel room. With curious enthusiasm, nearly 20 people crammed into the humble room to witness SVC's prototype.

One by one, the industry experts looked at each other and smiled. Most had never heard a voice compression algorithm so good and certainly not with simultaneous data. For more than an hour, the scientists and senior managers took turns playing a racing game between two laptops across the bed. After the demonstration, the group asked Robert and Harmon to join them for dinner. After this demonstration SVC felt recognized for truly being on the cutting edge of DSVD.

The Market for DSVD

In their initial market research the founders uncovered a little known market of devices called telewriting terminals. These devices used pressure-sensitive graphics drawing tablets to display images on a separate black and white monitor for transmission over regular phone lines. These devices used a simple communications method that exchanged either voice or data, but not both simultaneously. Earliest designs were on the market in Japan in the mid-1980s. They were produced by Shimadzu, NTT, and NEC, and they

were about the size and weight of a large typewriter. Most were targeted to hearing-impaired users and cost $6400 a pair.

At the core of SVC's solution was a communications protocol, i.e. unique software that directs the flow of information across networks. By the fall of 1992, SVC wrote their patent "Method and Apparatus for Establishing a Full-Duplex, Concurrent, Voice/Non-Voice Connection Between Two Sites," which was eventually granted in October 1995 (Patent No.: 5,463,616). While the company was still deliberating in what way they would sell their technology, they defined their market as the market for modems and they considered modem manufacturers such as AT&T, Hayes Communications, Data General or Phylon as their most likely competition.

Standard modems were commodity products where prices frequently dropped 50% a year. Margins typically ranged between 10 and 15 percent. Modem makers jockeyed for fractional share points by adding incremental features to their modems. The company's business plan on September 21, 1994 read:

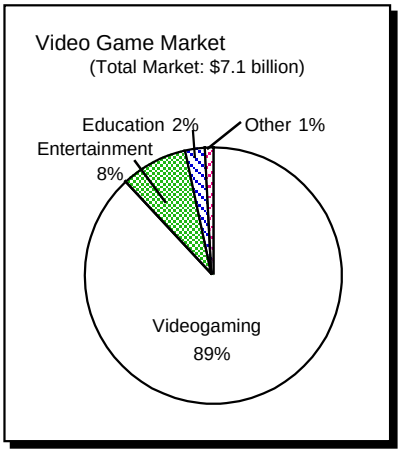
The U.S. modem market is expected to double from $845 million in 1993 to nearly $2.1 billion by the year 2000, growing at a 14% compound annual rate. Growth in this decade will be driven primarily by demand for high-speed, high-performance dial-up modems and pocket-sized modems according to a report prepared by Market Intelligence.

In 1998, dial-up modems will account for 98.5% of modem revenue, or $2.7 billion, up from 78% in 1993. Leased line modems, with 20% of 1993 sales will decline into virtual extinction. International Data Corp. predicts that PCMCIA modems will account for 73 percent of the modems used in portable computers worldwide by 1995. The mobile-computing market is expected to top 35 percent in compound annual growth through 1999, according to Frost & Sullivan. That means the mobile market will generate almost $70 billion in worldwide sales.

In 1994, industry experts projected DSVD modems would have a 33% penetration into all modems shipped in 1996, and nearly total penetration by 1998.

Within the market for modems, SVC decided to target specifically the entertainment market, focussing especially on PC-based flight simulation. The following are some excerpts from the company's business plan that describe the state of the market at the time.

Within the $7.1 billion video game industry is the $573 million PC Entertainment market niche (Figure 3a). PC-based interactive entertainment software is a market estimated to exceed $573 million with a growth rate of about 20% each year. Flight simulation software made up about $250 million (45%) of the PC-based total in 1993 (Figure 3b).



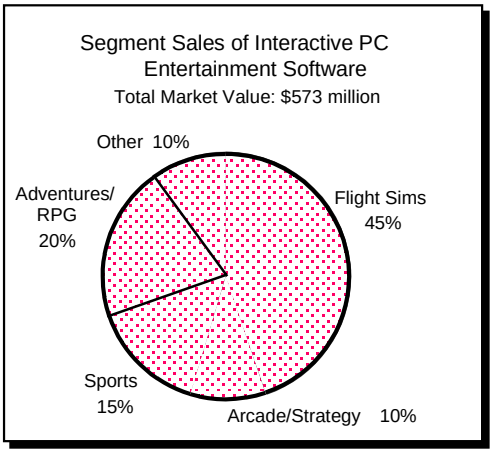
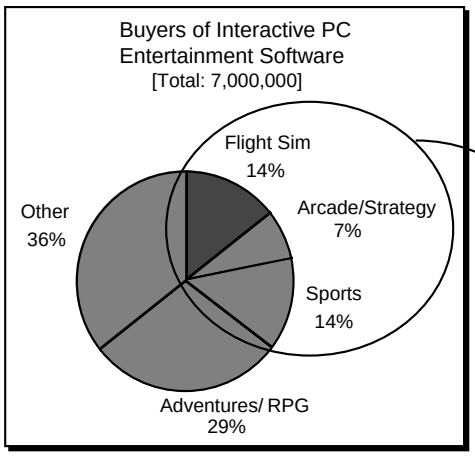


Figure 3a: 1994 Video Game Market Figure 3b: PC-Based Entertainment Software

Software revenues are generated by about 7 million people whose primary segment interests are shown in Figure 3c. Of these 7 million buyers, approximately 106,000 use modems for interactive point-to-point simulation over telephone networks (Figure 3d). Roughly 75% of these modem users use their modems for point-to-point flight simulations. The opportunity for market growth is significant. Approximately 10 million pilots are targeted by the flight simulation market. Additionally, as awareness of networking and interactivity increases, consumers are demanding simpler, more user-friendly equipment. Manufacturers are responding with new "multimedia" computers and accessories that require minimal computer knowledge to set-up and use. This is attracting more people to the market and enlarging the potential customer base for simulation software.



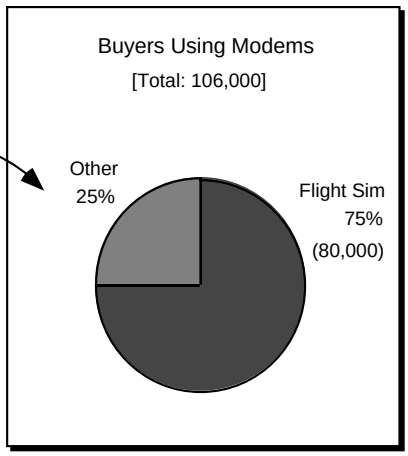


Figure 3c: Buyers of Interactive Software Figure 3d: Buyers Using Modems

There are over 100 simulation games available for the PC, while less than a dozen are available for Macintosh machines. However, many simulation makers have recognized this opportunity and are porting their software to the Macintosh platform. Microsoft has the top selling product in the segment with Microsoft Flight Simulator (MFS). Microsoft has sold over 2 million copies to date. Early versions were not capable of network play

over telephone lines. Today, approximately 25%, or 500,000 copies of MFS are capable of modem play.

Spectrum HoloByte leads the field in military flight simulations and in network compatible units sold. Spectrum's Falcon flight simulator is preferred by game enthusiasts due the greater depth of realism and performance. The Falcon family has sold over 500,000 copies since its introduction, and grows its installed base each year by about 200,000 units worldwide. Total sales of Spectrum HoloByte simulation products top 1 million units. Enhancements to Falcon provide "adventures" and are expected to sell between 50,000 and 100,000 units within 2 months of release. A product similar to Falcon, called F-15 Strike Eagle, by Microprose, last year grew its installed base of approximately 500,000 units by another 250,000 units.

The number of network compatible titles is expected to increase to further differentiate product lines. New features that can be enhanced by MIRRA include tower control, ground crew communications and radio frequency selection. Overall, growth in the PC-based flight simulation segment is forecast at 20% annually through 1997 (Figure 3e).

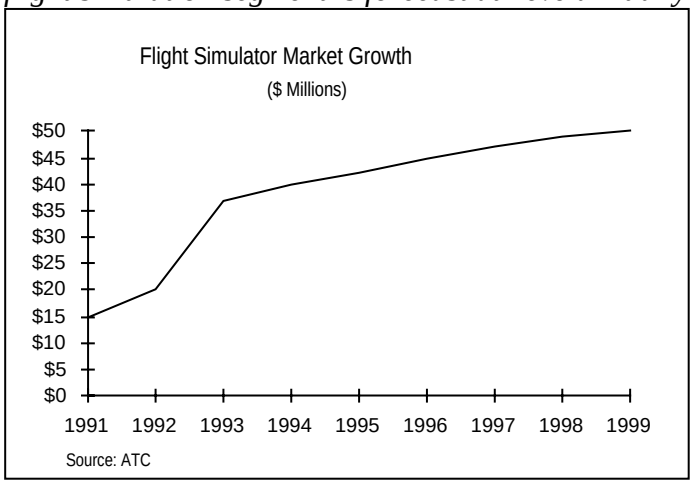


Figure 3e: Projected Flight Simulator Software Market

Users of simulator packages range from grade school boys to former fighter pilots. They spend large amounts of money on simulation accessories. Some even purchase "cockpits" with joysticks from actual fighter jets. Particularly appealing about this market niche is their loyalty to the products. Dozens of user groups have sprung up around the country where players come together over networks, forming teams and competitions. One group even has its own annual conference, called SIMCON [Flight "Simulation Conference"]. The combination of a large installed user base, disposable income, and loyalty makes PC-based simulators a most logical entry point for adding concurrent voice capability.

Key points in defining the market segment are age, discretionary income, lifestyle, computer literacy, and simulator products already in use. Typical purchasers of concurrent voice modems are males between the ages of 12 and 44 who have influence among their peers (Figure 3f). According to Spectrum HoloByte, approximately 80% of

the installed base meets this profile, having an average age of approximately 38 years old.

Figure 3f: Typical Consumer Profile

Adolescents and Young Adults:	
Age:	*12-44*
Discretionary Income:	*High*
Sex:	*Male*
Family:	*Middle class and above*
Geographic:	*Suburban, some rural.*
Attitude:	*Innovator, adventurer, gamer, leader*

The Choice of the Business Model

The business model decision was the most critical decision the company faced. SVC could potentially pursue four very different strategies, which they classified as follows.

Model A: Sell shrink-wrap applications (i.e. floppy disk software)
Model B: Sell compiled object code for embedded applications (i.e. chip sets)
Model C: Sell a PC adapter card
Model D: Sell a complete solution that incorporates a PC adapter card

Model A: Sell shrink wrap software licenses

With shrink-wrap software, the manufacturer (in this case SVC) sells a single-use license directly to the channel or customer. Before the customer can actually use the software, they must agree to the "license and warranty" terms in fine print on a sealed disk envelope. These terms essentially restricts the customer from making unnecessary copies of code and documentation, and using unauthorized versions.

Companies that sell large volumes of shrink-wrap software, such as Microsoft, often subcontract the manufacture of their products using "gold masters." Some subcontractors have direct relationships with distribution channels and can act as sales agents for the manufacturer. In this case, the subcontractor produces the necessary product to meet demand and, through a third-party accounting system, remits the manufacturer for the number of "licenses" produced and sold. This business model resulted in significant cost savings to the manufacturer in setting up infrastructure and distribution channels.

To fit this software business model, the shrink wrap application must freely run on the PC without the need for extraneous hardware. The SVC solution, however, required fairly

intensive processing. At the time, voice compression algorithms would run extremely slowly on the available 386/486 PC processors. SVC had developed a solution that handled the voice processing component on an auxiliary chip that fit in the expansion bay, thus freeing the computer to run other applications without slowing down its performance. In 1994, SVC's technology required such a hardware component to make its software run. As the processing power of PCs continued to increase, the founder felt that a software-only model might become feasible in the future, but not necessarily in the near future.

Model B: Sell chip sets

This business model was the hardware licensing equivalent of Model A. In this model, technology was created in a software form that was burned into chips instead of "floppy disks." See figure 4. Chipset sales would be made mainly to major hardware OEMs, who would make royalty payments based on the number of times they burned the compiled object code into their chipsets. This strategy emulated the Dolby licensing model and involved royalty payments for each chip the OEM installed.

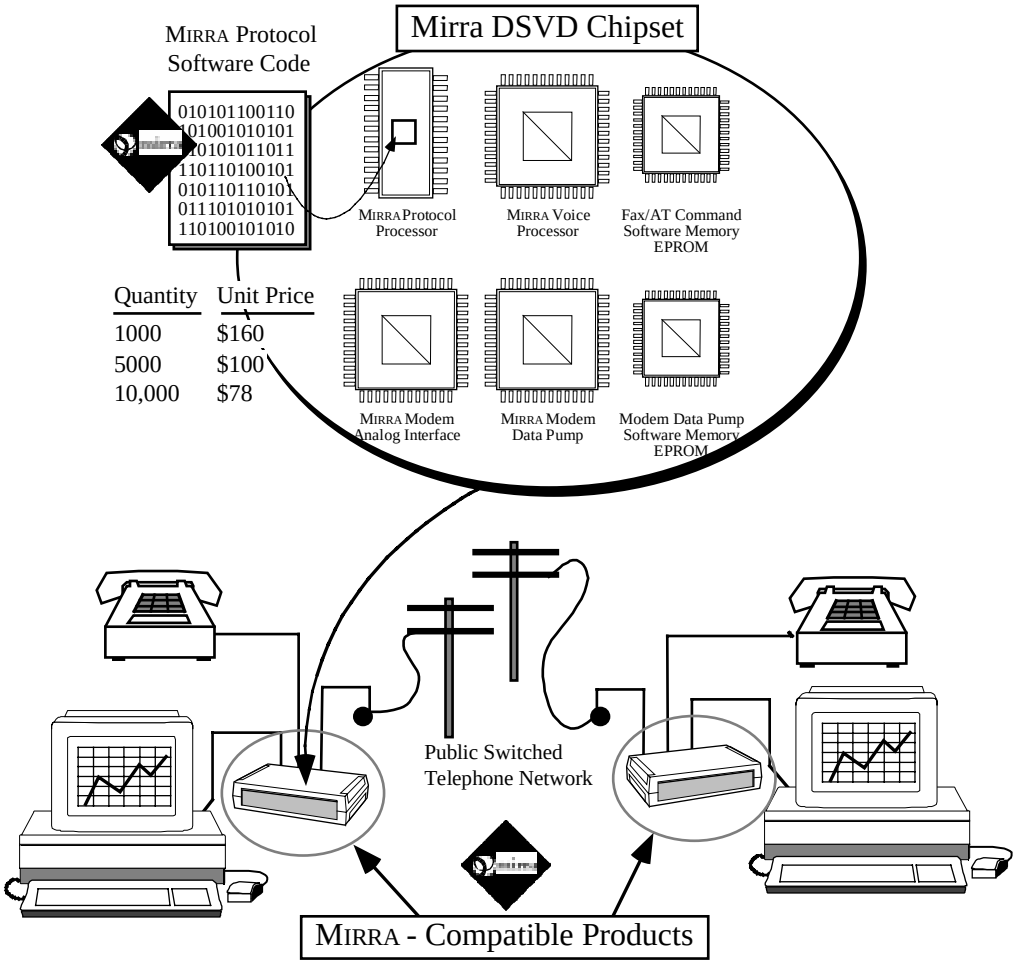


Figure 4: SVC Protocol Chipset & Product Line

Figure 5 describes SVC's potential distribution channels, with the accompanying explanation from the original business plan at the time.

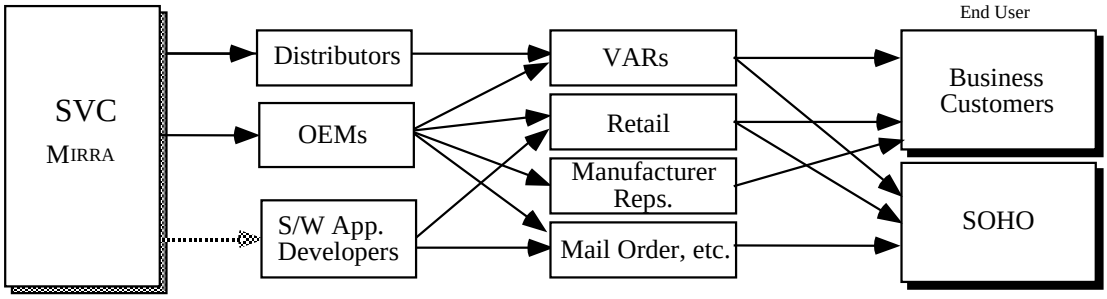


Figure 5: SVC Distribution of MIRRA™

Distributors

Primary distributors of computer-related accessories are Tech Data, Ingram Micro and Merisel. These distributors service large corporate accounts and the multitude of VARs and system integrators across the country.

Original Equipment Manufacturers (OEMs)

Hardware manufacturers play a critical role in the business model. In addition to their manufacturing, marketing and support prowess, SVC must consider the OEM's relationships with software developers in the target segment. Close ties will encourage high quality compatible software. Great software will, in turn, pull the hardware through the channels and result in higher sales. OEMs will purchase product directly from SVC for incorporation into the manufacturer's equipment. SVC will continue to seek relationships with OEM manufacturers who wish to enhance and differentiate their products by building in concurrent voice capability.

Software Application Developers

As in the flight sim market, software developers in follow-on markets are key to rapid adoption. SVC will provide a specification describing the "hooks" required to create compatibility with MIRRA. Additionally, as new and revised operating systems are developed, SVC will seek to have compatibility built directly into the operating system. In many vertical markets, unique needs frequently require specially designed, often proprietary software. This software is developed by value-added resellers specializing in software solutions. These resellers will achieve compatibility with MIRRA by including the "hooks" described in the SVC specification.

Value Added Resellers (VARs)

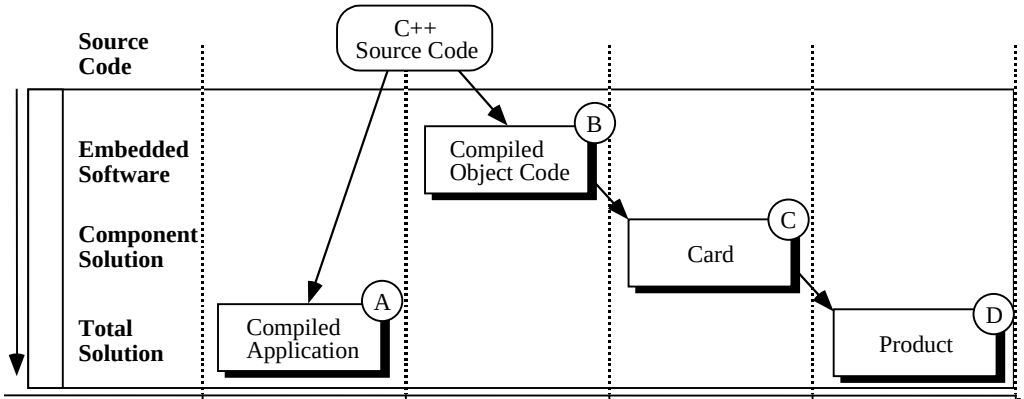
Value Added Resellers (VARs) are defined as those who integrate system components into a final solution. VARs will be instrumental in interfacing to the dozens of vertical markets

for interactive software. SVC will support VARs to ensure that they are up-to-date with protocol guidelines and other product possibilities.

Models C & D: Sell Products (Circuit Cards & Solutions)

The company's original intent was to sell products enabling it to perfect quality control, protect its intellectual property, and develop direct customer relationships while testing demand. All manufacturing would be subcontracted, as is typical in the industry. Through the use of "Just-in-Time" manufacturing, only finished goods would be stored on company premises until delivery to end users. The company would initially employ a direct sales model, which would transition to distribution and retail partners once sales volume, demand and profitability was proven. The difference between the models C and D was mainly the extent to which the company would deliver the key component, namely the PC adapter card, or an entire solution.

Figure 6 summarizes the main aspects of these four business models.



Product	"Floppy Disk" Application Software	Embedded Chip Object Code	"Plug n' Play" Circuit Card	"Plug n' Play" Box
Host Processor: Effectiveness:	Platform: 486 PC Runs too Slow!	Platform: DSP Ideal	Platform: DSP Ideal	Platform: DSP Ideal
Price/COGS Volume Potential	$49/$10 1k's per Distributor	$3/$2 100k's per OEM	$249/$150 1k's per Distributor	$299/$210 1k's per Distributor
Customer	End Users: - Gamers - Telecommuters	OEMs: - Hayes, Supra - Intel, Motorola	Power Users System Integrators Developers	Power Users Consumers Developers
Sales Cycle	3 months	6-9 months	3-6 months	3-6 months
Pro's	Mass Distribution "Plug n Play" Customer Knowledge	Mass Distribution Instant Standard	Customer Knowledge "Plug n Play"\	Customer Knowledge "Plug n Play"
Con's	Not an option - Runs too Slow	OEM Drives Margins Difficult to Account No Direct Customer	Requires Installation Must Carry Inventory Requires Major VC$	Must Carry Inventory Requires Major VC$

Figure 6: SVC Business Model Options

The May 20, 1994 Board Meeting

On May 20th, just days after the successful demonstration at the TR-30 ad hoc meeting in New Orleans, SVC held its next board meeting. Resolutions included removing some buyback provisions for the founders, since they had met their milestone of building an operational prototype. The board's questions centered on the business plan and the next round of investment. The team produced a proposal to Atari and the agenda for a presentation with ThrustMaster a week later. The proposals combined with the positive feedback from the TR-30 delegates generated significant enthusiasm in the board meeting.

However, when it came to the presentation of the financials, the board expressed strong disappointment and frustration. See Figure 7 and Appendix C. For the next round of financing, the founders proposed a price of $3 per share. William, instead, recommended a $1/share valuation citing "we don't have a going concern yet."

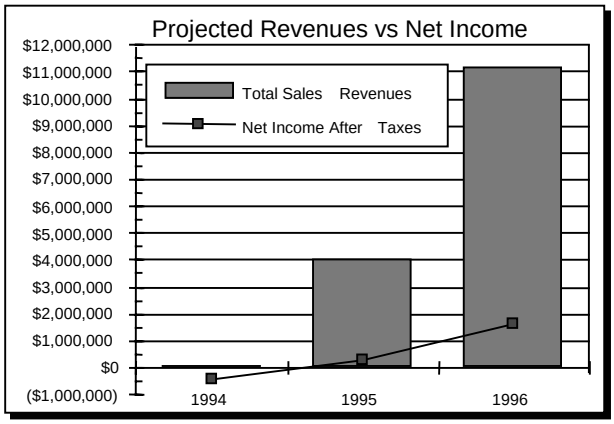


Figure 7: Financials Presented May 20, 1994

The investors also started questioning the business model once again. William was "not interested in investing in a product company" and insisted that the company revise the plan to reflect a traditional software licensing model. The founders strongly felt that the software licensing model would be appropriate for a later phase but not at the time. They advocated that the company would either sell pre-coded chipsets, or that it would sell complete products, possibly outsourcing some of the manufacturing. The board had severe reservations about establishing any manufacturing and maintaining inventory. They thought that the expenses of operating and the challenges of managing such an enterprise would be beyond what this company could handle.

Duke, one of the non-voting 'passive' investors in the room requested again that the company seek to hire a new CEO. Robert requested the assistance of a local recruiter in identifying candidates, but this was rejected because of the high fees (around 20% of first year's executive salary). Instead, the investors/board members offered to contact some of their sources as executive candidates. Other board members thought that Robert was

doing a good job managing a complex set of technical and marketing issues, thus saving the company the expense of a highly paid CEO.

The meeting adjourned without a resolution of these differences.

Appendix A: The Management Team

The following are summaries of the founding team's experience and functional responsibilities at SVC as of August 1994:

ROBERT CRUSOE, PRESIDENT, CO-INVENTOR

Robert has a Bachelor of Science degree in Electrical Engineering from Bradley University and has one course remaining to obtain an MBA degree from the University of Colorado in Denver. His background includes over five years in technical project management, multimedia system development, programming, systems analysis and integration. Robert is published in the field of computed tomography imaging. For SVC, Robert has written numerous business plans, detailed internal reports and has performed extensive marketing research documenting the technological developments and market trends in key technologies. He has also developed multimedia software projects and presentations.

Robert has had responsibility for the overall direction of the company for the past three years. Robert concentrates on identifying strategic relationships, focusing product strategy, managing investor relations and identifying candidates for key executive positions.

JOHN SELKIRK, OPERATIONS, CORPORATE SECRETARY

John has a Bachelor of Arts degree in Mathematics, a Bachelor of Science degree in Mechanical Engineering and has four courses remaining to complete his MBA degree at the University of Colorado in Denver. John's background includes nearly nine years troubleshooting system problems on commercial jet aircraft. John is also familiar with speech compression algorithms, digital signal processing, software development, and modem technology. He has co-written business plans and has performed extensive market research documenting the developments and trends in these technologies. John demonstrates keen attention to detail and a natural ability to negotiate in high pressure situations. John has been with SVC for three years.

John has responsibilities coordinating operations and as corporate secretary. His focus is currently on the internal operations and administration of the company. Once SVC is sufficiently funded, John will share responsibilities managing personnel and financial resources as well as supporting sales and marketing. Additionally, John is involved in strategic planning, negotiations, and in identifying key personnel.

HARMON SATCHELL, SYSTEMS ENGINEERING, CO-INVENTOR

Harmon has Bachelor of Science degrees in Applied Science & Engineering from Portland State University and in Psychology from the University of Oregon. Harmon's background includes over eleven years in engineering, design, and implementation of microcomputers and network interfaces to a variety of architectures [i.e., 68000, VAX, Gould SEL, Z8000]. Harmon also has extensive experience developing and implementing protocols for avionics data networks. He has designed and implemented large memory mapped interfaces to support multicast, content addressable data transmission systems. Harmon has published papers on two-way data link protocols and data compression in Radio Technical Commission for Aeronautics (RTCA). Harmon has been with SVC for over three years.

Harmon is responsible for systems engineering. This involves managing the transition of hardware and software prototypes to a robust pre-production engineering design. He also supplies protocol engineering support to product development. Harmon has developed the recommended components specification to be used by SVC customers for implementation. He participates in new product development, technical sales, customer product definition and support.

STEVE THURSTON, PRODUCT DEVELOPMENT, CO-INVENTOR

Steve has a Bachelor of Science degree in Electrical Engineering from the University of Idaho and a Masters of Science in Software Engineering from the University of Colorado in Denver. He has more than twelve years programming experience using DOS and 'C' programming languages and is intimately familiar with programming on DSP platforms. He has implemented systems using data protocols including DIS and TCP/IP. Steve has valuable experience actively participating on protocol standards committees. Tom also has a strong background in PBX systems and other telecommunication areas. He has applied this unique and comprehensive background by co-developing and implementing the original SVC protocol format. Steve has been with SVC for over three years.

Steve is responsible for product development, including continued protocol design, software engineering and software quality control. He works closely with DSP engineers and consultants and supports systems engineering in design implementation and customer support. Steve is responsible for specification definition and all necessary software documentation. Steve also participates in prototype design and implementation including contractor development.

Appendix B

Series A Preferred Stock Agreement - Key Terms

Section 3c. Voting Rights. Holders of series A and common shall vote as separate classes. Series A shall elect 2 members to the board of directors. Common shall elect 2 members to the board of directors. The fifth director shall be jointly nominated by majority vote of the four directors elected above. A unanimous vote of both Series A and common shall be required to change the number of directors of the company from five directors.

Section 3d. Voting Rights. The voting provisions of Section 3c shall remain in effect until such time as the company has raised an additional equity amount of $500,000 or greater. At and after such time, the holders of shares of Series A stock shall have the right to nominate and elect two members of the board of directors. All other directors shall be nominated and elected by the holders of shares of Common Stock voting as a class. In addition, the number of members of the Board of Directors may be increased or decreased by the Board of directors or by the majority vote of the holders of shares of common stock.

Section 6a. Liquidation Rights. Upon liquidation, dissolution, or winding up of the company which occurs on or before September 30, 1998, and if the amount available for distribution to shareholder is less than $10,000,000, no distribution shall be made to holders of shares of stock ranking junior to the Series A unless the holders have received $0.75 per share (Series A liquidation preference) adjusted as set forth in Section 6d to reflect stock splits, dividends, and recapitalizations. Following the payment of the full amount of the Series A liquidation preference in respect of all outstanding shares, series A and holders of common stock shall receive their ratable and proportionate share of the remaining assets.

Section 10. Anti-Dilution Provisions. If at anytime the company sells shares of common stock at a price less than $0.75 per share, then the holders of the Series A preferred shares shall be issued additional shares of Series A by multiplying the number of Series A stock by 0.75 and then dividing such product by the price at which the Common Stock or other equity securities were sold. The difference between the quotient so obtained and the number of shares of Series A stock owned by the holder thereof shall be issued to the holder without additional consideration.

Section 11. Preemptive Rights. The holders of Series A shall have preemptive rights to acquire unissued shares of common stock or securities convertible into common stock in order to maintain its percentage ownership in the company.

Composition of ownership

New Ownership Scenario:	No. Shares	Share Value	% Ownership
Rob Crusoe	557,900	$409,418	40.94%
John Selkirk	110,000	$80,724	8.07%
Harmon Satchell	120,000	$88,063	8.81%
Steve Thurston	185,000	$135,763	13.58%
Total Founders	972,900	$713,968	71.40%
Bill Thomas	15,000	$11,008	1.10%
Dan Jameson	34,100	$25,024	2.50%
Total Common	1,022,000	750,000	75.00%
Series A Investors			
Richard Steele	136,267	*$100,000*	10.00%
William Dampier	102,200	*$75,000*	7.50%
Duke Weymouth	102,200	*$75,000*	7.50%
Total Series A	340,667	$250,000	25.00%
Total Outstanding Shares	1,362,667	1,000,000	100.00%

Employee Agreement - Key Terms

Section 2. Term. This agreement is for 2 years.

Section 3. Compensation. Salary is fixed at each person's rate ($40k - $50k) during the term.

Section 5. Performance Benchmarks. A key factor in the compensation being paid is keeping the key employee group intact during the development of a marketable prototype. Therefore, in the event that I voluntarily terminate my employment to the earlier of the benchmarks set forth below, the company shall have the right to repurchase shares of the company's common stock owned by me at the price of $0.01 per share payable in cash.

Benchmark:	% of Stock to be Repurchased
Achievement of 2-way modem link	75%
Achievement of 2-way voice link	50%
Achievement of 2-way voice & data link	25%
Completion of an additional equity funding of $500k or greater, or 2 years from the date of this agreement, whichever is greater	0%

Section 6. Non-Competition, confidentiality, non-raiding of employees, and company ownership of all inventions for a period of 2 years after termination of employment.

Appendix C: Financials

Income Statement Projections

The following projections were presented to the Board on May 20, 1994.

Fiscal Year Ending Dec. 31, 1994:	**1993**	**1994**	**1995**	**1996**
Sales Revenues	**$ 0**	**$244,860**	**$4,435,500**	**$11,189,000**
Cost of Sales	0	165,525	2,614,640	6,992,000
Gross Profit on Sales	$ 0	$ 79,335	$1,820,860	$ 4,197,000
Gross Profit Percentage		32.40%	41.05%	37.51%
Interest Income	1,070	13,828	15,086	49,685
Operating Expenses	78,950	454,718	1,088,270	1,570,467
Net Income Before Taxes	(77,880)	(361,556)	747,676	2,676,219
Taxes	0	0	104,218	909,877
Net Income After Taxes	**($77,880)**	**($361,556)**	**$ 643,458**	**$ 1,766,342**

1.1 Balance Sheet Projections

Assets	**1993**	**1994**	**1995**	**1996**
Current Assets				
Cash Total	$115,722	$470,171	$671,505	$2,010,361
Accounts Receivable	0	114,676	820,800	1,704,285
Loan to Shareholder	75,680	0	0	0
Finished Goods Inventory	0	94,640	80,000	72,000
Equipment	17,503	49,908	74,908	94,908
Patents/Trademarks (Org. Costs)	10,492	28,992	40,992	52,992
Accumulated Depreciation	(22,475)	(73,380)	(110,380)	(142,380)
Total Assets	**$196,922**	**$685,007**	**$1,577,825**	**$3,792,166**
Liabilities & Owner Equity				
Accounts Payable	$0	$ 94,640	$ 344,000	$ 792,000
Shareholder Loans	17,500	15,000	15,000	15,000
Total Liabilities	**$17,500**	**$109,640**	**$ 359,000**	**$ 807,000**
Owner/Stockholder Equity				
Preferred A stock @ 0.75/Share	250,000	257,500	257,500	257,500
Preferred B Stock	0	750,000	750,000	750,000
Common Stock @ 0.01/share Par	10,220	10,220	10,220	10,220
Paid-in Capital	13,490	13,490	13,490	13,490
Retained Earnings (deficit)	(94,288)	(455,844)	187,614	1,953,956
Total Stockholders Equity	$179,422	$575,367	$1,218,825	$2,985,166
Total Liabilities & Equity	**$196,922**	**$685,007**	**$1,577,825**	**$3,792,166**