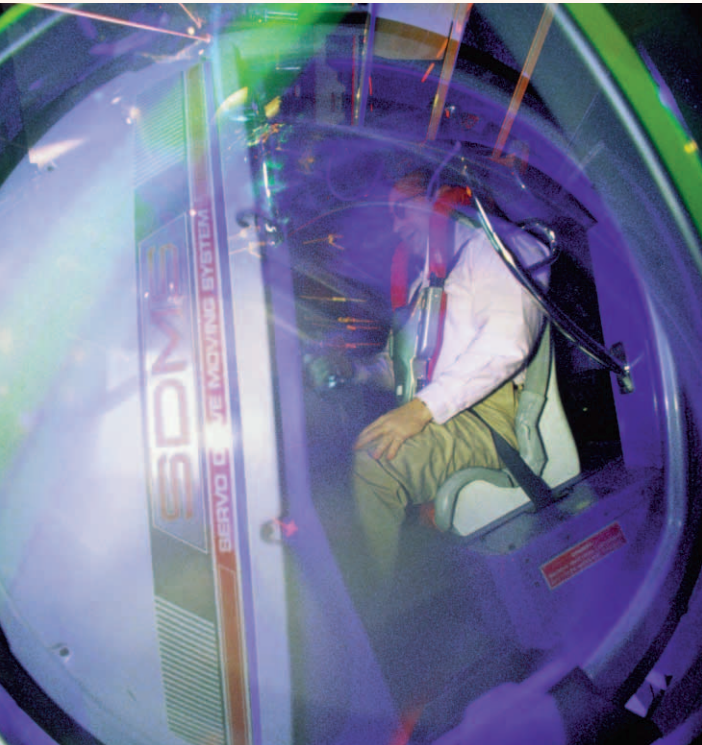


# Information Technology

PART

## II



### **Case II: Play-it-Again Arcade Games, Inc.**

Jerry Smith remembered the first summer he played *Space Games* at his favorite arcade. It was over 20 years ago, and he and his friends couldn't spend enough time immersed in their favorite sport. Each spent hours sitting in an enclosed booth, wearing a helmet headset that played high-fidelity sound and had 360-degree wraparound visual projection. As everyone's first experience with total immersion video games, *Space Games* was a huge hit. And here Smith was 20 years later, the new CEO of Play-it-Again Arcade Games, Inc., the wildly successful manufacturer of the 3-D virtual reality *Space Games*, *Megaraptor 2000*, and *Flight Sim* arcade video games. Smith was thrilled to be part of the company that had fed his childhood fantasies.

He was also pleased to see that from a financial viewpoint, the company was in great shape. Over the previous 20 years, it continually produced innovative products and grew to 100 times its original size, with current annual revenues of over \$40 million. The company's success was not the result of a master plan. It happened because the company's founders had perfect timing. They hit the market with what was then a unique product and, at the same time, discovered some innovative ways to produce their new product inexpensively.

It quickly became clear to Smith that while Play-it-Again produced high-tech products, its business operations were anything but high-tech. In fact, the company handled most of its operations—sales, marketing, accounting, and the like—as if it had only



its original 15 employees instead of the current 313. Departments performed tasks manually that should have been done using a computer. Even when they used computers for some isolated tasks, departments never coordinated with each other, despite the fact that they sometimes used or created exactly the same information. In fact, every department seemed to have evolved its own unique way of doing things, with little understanding of, or interest in, how the rest of the company operated. Not surprisingly, efficiency was low and employee frustration was high.

As an outsider, Smith saw that the firm remained in business thanks to the ingenuity of its products, not because of its operational efficiency. Moreover, he saw the competition approaching with its own innovations and cost-saving techniques. And he saw that sales representatives lost customers because they lacked the tools they needed to provide the necessary support. Although the company remained financially strong, Smith saw that the bottom line was slowly turning downward. He faced a challenge: to take a basically successful company operating in an out-of-date, inefficient manner and turn it into an even more successful company. His goal was threefold: (1) to make basic business functions (such as accounting and payroll) more efficient, (2) to provide employees with the modern tools they needed to do their jobs well, and (3) to make all the information people wanted available when they wanted it. Smith knew no one in the company was qualified to take on this project, so he called his friend Benjamin Streier, an information systems consultant, and posed his problem. Streier explained that the solution involved several elements: hardware, software, networking, telecommunications, and data sharing.

### **From Pinballs to Videos**

In 1970, Play-it-Again Pinball, Inc. (a manufacturer of pinball machines) became Play-it-Again Arcade Games, Inc. Its founder, Jim Smoler, purchased the rights to three games that introduced three-dimensional video gaming to arcades. He then found a new way to cut

production costs dramatically: purchasing parts and services in some Asian countries and then assembling the equipment in the U.S. Sales boomed. However, while Smoler pursued innovative cost savings in his manufacturing operation, he ignored the growing complexity of the company's business operations. Within five years, the new company had branches doing business all over the world:

- Corporate headquarters were located in Minneapolis, Minnesota. In the main plant located outside the city, the machine casings and mechanical elements were assembled and quality assurance was conducted.
- Video game software was developed and tested in India.
- Electronic chips into which the software was etched were manufactured in Taiwan.
- Parts for arcade machines were purchased from manufacturers in Europe, Canada, the U.S., and the Far East.

### **The Gathering Storm**

In the first decades of its booming growth, with sales growing and cash flow high, Play-it-Again continued to pay almost no attention to its day-to-day operation. Success also blinded the company's leaders to the growing challenge of competitors, who were entering the market with their own high-tech games and had also learned to keep costs down by using overseas talent and materials. And so, Smith sat at his desk with a collection of memos he had received over the past month.

*Every department expressed dissatisfaction and frustration with its individual operations:*

- Accounting complained about having to manually key each invoice into its computer system, reading information from handwritten faxes sent by the field sales force. Bills backed up, especially when most summer arcade outfits placed their rental requests. Sometimes accounting took weeks to issue an invoice to a customer. Orders often couldn't be located, with faxed order sheets getting lost or being attached to other faxed correspondence.



- Salespeople were unhappy that it took sometimes five or six telephone calls to determine their orders' status. And they were very unhappy with the tools they had—or didn't have—to keep customers happy and commissions credited in time. No cell phones, no beepers, no laptop computers. Also, placing an order was highly inefficient. To place their orders, the sales force had to fax preprinted forms (rather than send them via e-mail as most of their competitors did).
- The marketing department had its own frustrations. Because its computer system was incompatible with the billing department's, marketing could create reports only by manually keying sales figures into a spreadsheet from the billing department's printouts. Lacking the tools to manipulate the appropriate data, marketing people couldn't expand sales to locations other than arcades. They couldn't even productively use their own customer lists. They still sent most direct-mail promotions using lists purchased from other companies, an expensive and wasteful practice.
- Customers waiting for deliveries were most frustrated. To win sales, Play-it-Again often promised to install new video games by a certain date and then disappointed customers by delivering late.

Smith saw that the complaints and frustrations all fell into the same categories:

- The entire staff—whether in accounting, sales, marketing, or finance—was tired of wasting time on unproductive work, especially clerical tasks of entering the same information from paper into the computer over and over again.
- Almost across the board, departments believed their computer systems were too slow and their programs were incapable of doing what they wanted.
- Also, from his vantage point, Smith saw that many departments used and created the same information, which was inefficient and wasteful.

Smith knew the company employed very creative people. Its products continued to excel. However, he also realized that daily operations could run the company into the ground. Smith's predecessors all had

followed the rule “if it isn't broken, don't fix it.” Smith didn't accept that. He knew he had to computerize the company's operations if there was to be any chance of continued success.

### Time for a Change

Smith called a meeting. He asked each vice-president to create a wish list. He didn't want a list of computers and software and gadgets that each wanted. He wanted to know how the VPs wanted their departments to operate, *if they could do anything they wished*. Smith told the VPs that the meeting would also provide an opportunity to voice their frustrations to him and to each other. Here's what they said.

### Product Development

Rebecca Santini, Ellen O'Grady, and Isaac Brown headed product development. As college students, they had all worked in the same multimedia lab, where they had a chance to work with wild graphics and seamless human/machine interaction. At Play-it-Again, they and 15 programmers worked in a development lab on the twentieth floor in the headquarters building. The lab's job was to come up with ideas for new games and specifications on how to build both the hardware and software. They usually created a one-of-a-kind sample. Then estimates were put together to determine the cost of producing, marketing, and selling the new game; prices were set; production created an assembly process; and the lab turned actual game creation over to shops in India and manufacturing plants in the Far East and the U.S. For the most part, the product development staff was more satisfied than most of the company's operations. They operated relatively independently and were free to purchase whatever high-tech equipment they needed to design the company's best-selling products. They did complain about the lack of telecommunications technology at Play-it-Again, which made communicating with off-site game designers and testers inefficient.



## Sales

Phil Stone, vice-president of sales and marketing, said that for at least a year the sales force had received a *lot* of complaints from customers. Some complaints came up repeatedly: Play-it-Again consistently takes six weeks to fulfill an order while other companies deliver in only 10 days. Play-it-Again takes days to estimate costs for special orders—such as volume discounts, handicapped modifications, or special controls, instead of the few-hour turnaround provided by other companies.

Frustrated, Phil wanted to know why his people had to fax “ridiculous” paper forms to place orders. Processing the forms cost him thousands of dollars per year. Why couldn’t his people fill out sales forms online during meetings with customers, just as other sales forces did that he had overseen? Stone knew of sales forces that didn’t even have to type. Instead, salespeople “talked” to their computers or used special styluses to “write” on the screen, to fill out orders or estimate forms. Another of Phil’s major problems was that his salespeople had no cell phones or beepers, so customers couldn’t reach them easily.

## Finance and Accounting

Mark Matlin from accounting and Brijinder Abala from finance were almost jumping out of their seats. Finally, Mark interrupted and turned to Smith: “If we could get orders by e-mail and had a way to use keyed information in our invoices, we could turn them around immediately.” Jerry looked skeptical: immediately? “Pretty much,” Mark said. Plus, he could automate the follow-up invoicing for unpaid bills. These changes could improve his department’s efficiency dramatically. Mark didn’t have first-hand experience. But in professional journals he had read about systems that automatically generate invoices using key information entered on-screen. “And, by the way, then I could do away with *my* preprinted invoice forms, on which I also spend a fortune,” Mark said. “With the current system, just getting an order into the system the first time sometimes takes a

week.” Mark knew that wasn’t good for the company, but until this meeting, he couldn’t see a solution.

## Marketing

“If sales and accounting can share information,” Kelly Luckett, Phil Stone’s marketing manager, said, “why can’t the same information be put into a computer system that marketing could use as well? In fact, why couldn’t the sales force gather *other* useful information for marketing, even if a deal wasn’t closed?” Kelly could see that if the sales force gathered names, addresses, phone numbers, and e-mail addresses in the field, marketing could do much to support the field sales force through direct mail and electronic means.

## Manufacturing

After listening to Phil (the sales manager) complain about long turnaround times, both Chuck Billingsley and Margarita Rodriguez (heads of manufacturing) felt a bit defensive. A number of factors caused their delays. “We don’t have quick and easy access to pricing information for all materials and parts we buy, so we don’t even know if we get the best prices; we often don’t receive word of orders until seven to ten days after they were placed, so we are starting behind. We have no information about sales force plans, so we can’t plan ahead ourselves. As a result, planning manufacturing cycles is virtually impossible. Only with phone calls and faxes across time zones, sometimes as much as 12 hours apart, do we get a snapshot of the manufacturing status of ordered parts, and we only get that once a day, at best. If we had ongoing access to what product orders are in the pipeline, what parts have been shipped, and when to expect various parts, *then* we could give much more accurate delivery dates and sales would stop complaining.”

## Human Resources

Richard Brandeis was responsible for what most companies call human resources. He researched benefits agreements, kept all employee review information, and handled any employee problems. With over 300 employees and only a single assistant working with a

five-year-old PC loaded with a word processor, Brandeis often threw up his hands in frustration. There was absolutely no method to his operation, but tracking performance reviews and benefits left him almost no time to deal with anything else, such as training or standardizing employee evaluations.

### **A New Game At Play-It-Again**

The more he listened, the clearer Smith saw the picture; it was one of chaos. Obviously, the seemingly different complaints all grew from the same problem: the company had no handle on key information. Smith had to calm everybody down and figure out how to solve the problems at hand.

Benjamin Streier, Smith's consulting friend, was thrilled to receive Smith's call to take on the project. He started by meeting with the company's key players and following the entire business cycle, from marketing, through securing a sale, through manufacturing, to delivery. Streier knew what lay ahead: many hours of speaking to employees, researching and recommending new hardware, software, and networking systems that would work for each department and for the whole company. He had seen such situations before; he knew that the key to resolving Play-it-Again's difficulties was to put information in the hands of decision makers when they needed it, in the form they needed it.