S&V Consultoria e Tecnologia (B)

In late January 2003, Fredy Valente and Penido Stahlberg smiled at each other as they admired their picture and article about S&V in the most recent *Examé* magazine (Brazil’s equivalent of *The Economist*). At only around 30 employees, S&V was an extremely small company to be profiled in such a prominent Brazilian magazine. As a result of the article, the two had become minor celebrities in their small university town of São Carlos. In fact, they had just completed an interview with their local TV news crew, who was doing a story on the two professors making it big against larger corporate competitors. Their expressions, bright with smiles while the cameras were on, quickly turned pensive as they contemplated the future. Despite S&V’s tremendous success in the past year, Fredy and Penido knew that they faced numerous challenges in the coming year.

Early on, S&V was able to generate positive word-of-mouth for the quality and timeliness of its work. While both actively sought out sales leads, Fredy and Penido were also frequently contacted by potential clients, often referred by other customers. Exactly one year ago, the two were faced with the decision about whether to pursue a course of steady growth or rapid expansion. While they ultimately chose steady growth, the increased publicity surrounding the print and TV media resulted in S&V’s pipeline being as full as it ever had been. In fact, by the end of its first month of 2003, S&V had signed contracts worth more than their entire revenues from the previous year. In addition, the company was close to signing several other contracts that were the largest in the company’s history. S&V’s success was self-reinforcing: the better work the company performed, the more projects came their way.

But how long could this last? Fredy and Penido both knew they were fortunate to be in their situation, but were also keenly aware of the dangers of scale. Unless S&V was able to build the infrastructure to support their exponential growth, the seemingly positive momentum could ultimately be self-destructive. As the two contemplated S&V’s situation, they identified the following areas as critical:

- **Finance.** Can S&V’s current financial system handle a 10X (or greater) increase in business?
- **HR / Organization.** Is S&V’s infrastructure (people, systems, processes) adequate and prepared for this level of growth?
- **Strategy.** Finally, assuming S&V is able to develop its infrastructure to keep pace with business, how will the company maintain its lofty growth rates?

Fredy & Penido flashed knowing glances at each other: S&V was no longer the start-up they once bootstrapped with family savings and all-nighters. They knew that if they continued to make the right moves, the company had the potential to become one of Brazil’s technology success stories, and reach their goal of being known as the Hewlett and Packard of the smart card industry.
The Need for a Robust Financial and ERP System

The first issue surrounding S&V’s scalability addressed the company’s financial systems, reporting capabilities and budgeting functionality. In 2002, S&V’s existing system encompassed a patchwork of disconnected applications, such as a “home grown” project management and invoice system, Microsoft Excel spreadsheets of financial data, and paper records from suppliers. This simple system had served the company adequately in the past, but as S&V’s revenues continued to skyrocket, it became clear that it had outgrown this rudimentary configuration.

To address this situation, Fredy and Penido, with the help of some external consultants, carefully mapped out the business requirements of a new system. Collectively, the group identified the following three key requirements of a financial/ERP system:

1. **Internal Controls.** As the company acquired more customers and hired more employees, it became paramount to have internal controls in place. As a small company consisting of 30 individuals and having just a few large customers, it was practical for management to have a feel for how much time and money was invested in each aspect of the business. However, as the company scaled, management required a more systematic means of tracking, monitoring and controlling how much was spent on component systems, customer visits, research, etc.

2. **Reporting.** In order to manage growth and make educated business decisions going forward, management needed to have a better sense of the financial performance of its business in a timely manner. The current system simply could not produce vital financial reports such as project profitability reports, customer profitability reports, consolidated financials and labor tracking. Such information was critical and needed to be available to help influence the company’s decisions such as its pricing strategy and its hiring rate.

3. **Budgeting.** To manage scale, management needed to carefully plan ahead for cash flows, working capital requirements and hiring needs. “Playing it by ear” was no longer feasible. It order to control and prepare for sustained growth, Fredy and Penido required access to a financial system that facilitated budgeting.

As the team discussed these key requirements for a financial system, management proposed an interesting option. Typically, a company in S&V’s situation would mainly consider purchasing a third-party’s financial software package, but S&V presently employed a team of outstanding software developers. Fredy and Penido were confident that their developers were capable of creating software that could meet all of the company’s financial system needs for the foreseeable future. In fact, S&V’s software developers had written the code for the two internal systems that had been in use for years and had served the company well during the company’s early stages of growth. With the possibility for internal development in mind, management and the consultants considered three broad categories of solutions.

The first option was nicknamed a “band aid” solution. Here, S&V’s software staff would perform a limited amount of development and partially integrate the existing software systems. Basic controls, financial reporting and budgeting capabilities would be established, with very limited functionality. Some manual work would still be needed to generate useful reports, but the company would have significantly more information at its fingertips than what was available in the past. This solution would enable the company to buy time until it had a better understanding of its growth path and its long-term finance system requirements.

The second option was to scrap the existing systems and have S&V’s software developers essentially start from scratch to build a robust, customized finance and ERP system. Fredy and
Penido believed that its software engineers had adequate bandwidth to complete such a project within three to six months.

The third option was to purchase a third-party finance/ERP solution. After researching available packages, the external consultants discovered that several software solutions were available in the Brazilian market from vendors such as Microsiga, DataSul, MasterMaq, and RM Sistemas. These scaleable, fully tested solutions were targeted towards small and mid-sized companies like S&V and had the advantage of automatically calculating tax liabilities within the highly complicated Brazilian tax system. The purchase price and maintenance fees of each system were deemed acceptable by management, and Penido had a very strong relationship with the CEO of Microsiga which could potentially lead to a “good deal”.

As management considered these three broad options, many questions came to mind. Could the S&V software developers, who lacked financial training, learn enough about a proper financial system’s architecture to build a robust, in-house system? As the company considered raising venture capital funds in the future, would potential investors question the credibility and reliability of an in-house system? Would a third-party system meet S&V’s needs as well as a fully customized, home grown solution?

Additional implementation and post-implementation issues were raised by the team as well. Since, no S&V employee had formal accounting or finance training, did the company have the proper staff in place to make the most of a new finance system? Was implementation of a third-party system as simple as the salespeople claimed it would be? What internal control policies should be put in place and what rules should be created to allocate revenues and expenses in a way which yielded the most useful financial reports? Who within the company would have access to the financials of the company and the salaries of the employees?

It was clear that S&V’s financial systems need to be expanded or replaced in order to scale effectively; however it was difficult for management to determine which option to pursue and how to address these numerous issues.

**Organizational Issues**

The next group of issues for S&V to address were human resource and organizational-related. Just as their existing financial system was insufficient for their expected growth, S&V’s current organizational infrastructure would need to be changed. Minor problems, easily dealt with when S&V was small, were starting to become magnified as the number of projects increased dramatically. In particular, S&V faced challenges within its Hardware group, and with the company’s knowledge management practices.

**Hardware Group**

During the past year, Fredy & Penido encountered a challenging, yet not atypical, situation for successful young businesses: they had to let go one of their partners, whose performance was adversely affecting the hardware department he managed. In his place, much of the extra work had to be undertaken by the already over-extended project managers (“PMs”) and, at times, software product managers. While the departure had a positive impact on morale, it also highlighted many of the problems inherent in the hardware department, which were the cause of most of S&V’s project delays.

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*This case was prepared by Christina Grijalva, Jennifer Koop, Richard Lee and Craig Rottenberg under the supervision of Professor Richard Locke as a basis for class discussion. This case is derived from the students’ experience in their Global E-lab engagement.*
All of the delays could be attributed to purchasing, inventory management, and assembly/installation. However, since each of those stages are chronological, any delay in one compounded with further delays in subsequent steps. (See Appendix 1 for Flowchart of S&V Hardware Purchasing/Assembly Process). Like most bootstrapped firms, S&V had a culture of delaying purchases until the last possible minute for cash conservation purposes. PMs individually ordered parts for their own project only when they needed it, without regard to other simultaneous projects which usually required similar parts. As a result, S&V’s order sizes were small and the company often paid higher prices for not reaching minimum order quantities. Since they typically ordered parts at the last-minute, S&V was often subject to rush-order fees in order to install their systems on time.

Penido jokingly described S&V’s inventory system as “Just-In-Time”, which was a euphemism for “we don’t keep ANY inventory on-hand”. Unlike other companies that employ JIT, S&V clearly did not possess the relationships with its suppliers whereby they would receive orders within hours of placing them. On the contrary, many of S&V’s orders took several weeks to arrive from their international destinations. Since most of S&V’s projects involved their SVSS system, they each required a high number of commonly-used parts (which take up minimal storage space).

Aside from inventory, delays from assembly and installation of hardware was also common. Without a leader, hardware resources were pulled in many directions because project priorities were not set. Often, assemblies were started and stopped several times, resulting in inefficiencies and significant delays.

Each of these delays could be easily solved with improved coordination and communication. While S&V had been able to create “patchwork” answers (such as installing unfinished hardware to meet a client deadline, with full knowledge that a costly rework would be necessary), those same solutions would be detrimental as the number of S&V’s projects scales quickly. It was clear that S&V would need a central point person within the hardware group to take on the following responsibilities:

- Proactively initiate the purchasing process as early as the proposal stage (but by the statement of work at the latest);
- Coordinate purchasing across multiple projects;
- Monitor and manage work-in-progress and finished goods inventory; and
- Coordinate and develop hardware employees.

In order to be successful, this individual would require the following attributes:

- **Highly organized and forward-looking.** Implementing an inventory planning system, particularly for a project-based firm, and coordinating purchasing across numerous projects in various stages of development is challenging; this individual must deal well with chaos;
- **Knowledge of the current project management process.** In order to properly coordinate and prioritize hardware resources among the many projects, this individual must understand how typical projects are managed, i.e. understanding of purchase requirements of certain projects and knowledge of which steps can be postponed without delaying the overall project; and
• **Strong reputation among the Project Managers.** Like in any firm, every PM feels that their projects are the most important; therefore, this individual must be able to prioritize (independently, or jointly with the PMs) his resources among the various projects.

Describing their “ideal” candidate was the easy part; the challenge would be in finding this person. Given the need for someone who understood S&V’s project management process and also had the respect of the PMs, should the candidate be one of their PMs? What impact would re-allocating one of their PMs have on the others (especially given that there were only four PMs in the entire firm)? If they looked outside, how long would it identify the right candidate, and more importantly, how long would it take to train him / her?

**Information Sharing**

S&V was facing a related problem: too much critical information was known by certain individuals, but not documented or formally shared. Information about clients, products and processes was lost or forgotten due to insufficient documentation. This problem became all too clear when the hardware manager was let go. Project managers found themselves in the difficult situation of having to reinvent certain processes of assembly and installation.

S&V had created a software application for documenting client, product and process information, which they called S&V Docs. S&V Docs had the capabilities that the company needed to store, and retrieve vital information, but the system was not being actively used. Employees realized its importance, but their priorities were elsewhere. If information was not entered into the system regularly and consistently, others could not retrieve it, rendering the application useless.

In addition, a new ERP system would be able to handle financial, client, purchasing and project management information. This type of system, used in conjunction with S&V Docs, could accommodate S&V’s knowledge management needs for the next few years.

With these two systems available, Fredy and Penido had many unanswered questions on how to proceed: How could they motivate employees to record and use information on both knowledge management systems? What types of processes and practices should be institutionalized to aid knowledge management? Fredy and Penido also realized it was important to reach a correct balance such that effective knowledge management was achieved, while not detracting from S&V’s core business through excessive time spent on documentation and training.

**Evolving Roles of Founders**

Another source of project delays resulted from the fact that either Fredy or Penido had to authorize every purchase order. This practice made sense when S&V worked on one or two projects at a time, but with the imminent flood of clients and Fredy and Penido traveling more frequently for sales calls, the practice was becoming more of a bottleneck than a control in the project management process.

This was just one example of S&V outgrowing its original management structure and organization. As founders, Fredy, Penido, and Penido’s wife, Neny Stahlberg, had worn multiple hats and performed overlapping functions as they worked to grow S&V. Since the company’s founding in 1997, both Fredy & Penido focused on sales, R&D, project management, operations, finance, human resources, as well as corporate strategy issues. Neny had been largely responsible for S&V’s finances, teaching herself along the way. With the company growing rapidly, Fredy and Penido saw the need for more-defined roles and responsibilities of S&V’s leadership, as well...
as the need to develop future leaders of the company, ultimately delegating more responsibility to them. S&V would need a CEO, CTO, CFO and heads of sales, operations, and project management.

Strategy and Industry Considerations

New Applications and Industries

S&V’s access control solutions had met great success in the Brazilian market, and the expected growth resulting was tremendous. S&V had developed a reputation among its customers for advanced technology, high quality, and on-time delivery. Customers also appreciated the extensive customization that S&V offered. However, Fredy and Penido were not content basking in the glory of their current success. They were already actively considering where the next phase of growth should come from. They had several ideas.

One route Fredy and Penido were exploring was the development of S&V’s existing technology into new applications such as supply chain management, payment, and fleet tracking. The concept was based on adding applications to S&V’s access control systems so that one smart card could be used for multiple applications. There were several companies already active in these types of applications, but Fredy and Penido felt that their technology was unique because it provided the ability to use an off-line platform to transfer data from a smart card to reader or vice versa. In addition, they believed that offering a modular solution whereby customers could pick and choose various applications (or opt for the integrated comprehensive systems with all applications) would set their system apart from competitors.

Fredy and Penido were also looking into new industries to target for future sales of S&V’s access control systems and new offerings. With around 80% of the Brazilian steel industry using SVSS, the market potential was almost fully exhausted. S&V had sold some systems in the oil & gas, paper, and education industries, but had not yet seen the rapid diffusion that had occurred in the steel industry.

The problem for S&V was not a lack of opportunities, but rather choosing the right opportunities and the best strategy for exploiting them. Fredy and Penido wanted to both expand S&V’s technology and enter new industries, but pursue this in a way that would ensure S&V retain its competitive edge. They also wondered how partnerships could fit into S&V’s strategy going forward.

Pricing

In the past, S&V calculated prices based on an estimate of project cost and a guess at what the potential customer was willing to pay. As the company grew, Fredy & Penido realized they needed a more systematic process for pricing. In their business, negotiation was an essential part of the deal and it was therefore impossible to apply a formulaic method and set standard prices. However, having a baseline price based on some methodology as a starting point would certainly be helpful. What sort of pricing methodologies were commonly used? Which was the most appropriate for S&V’s business?

Conclusion

Fredy and Penido were clearly excited about S&V’s strong opportunities for growth, but they were cautious as well. They knew that in order to scale, S&V would need to transition from a
loosely organized and managed structure to an organization with systems and procedures to support continued growth. They had a number of finance, organizational, and strategic issues to address. As the blazing sun disappeared behind a cloud and raindrops began to pelt against the window (characteristic of Sao Carlos’ chameleon-like weather), Fredy and Penido planned for the future.

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