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WILLIAM F. ACHTMEYER
CENTER FOR
GLOBAL LEADERSHIP

Infosys: New Service Launch[1]

Computer programmers often are most inspired in the early stages of a software development project, when the opportunities for creative breakthroughs are greatest. The same programmers may grit their teeth and tie themselves to their chairs to get through that project's final stages, when they face the difficult, tedious task of fully testing the software and eliminating errors. Searching for errors can feel like a needle-in-a-haystack search, and it is difficult to know at any given point just how close to error free a program has become. Even the best programmers create bugs. Computers are finicky, and a single-character error in a program with tens of thousands of lines can cause an unexpected crash.

The debut and growth of the Internet raised the degree of difficulty for testing and debugging. Software became more complex and more interconnected, leading to unexpected interactions and undesired results. Then, corporations began creating software, such as e-commerce applications, with Internet interfaces. Fully trained and supervised employees no longer were the only users. Customers, complete strangers with unknown computer skills, also used the software. The programmer's ideal of "idiot proof" software assumed new meaning.

Mainstream programmers anticipated giant headaches. But one experienced leader at Infosys saw something altogether different—an explosive growth opportunity.

Inspiration

Arun Ramu arrived at Infosys late in 2000 with 18 years of software experience. In just his first six months as a software development manager at Infosys, however, he found himself placating angry customers twice, both times because testing projects had gone awry. Mr. Ramu initiated a thorough postmortem to determine what went wrong. It did not take long. The projects failed because people on his team either were not interested in doing testing or did not know how to do it properly. Further digging revealed that Infosys's new employee training program, which lasted 90 days, included only nine *hours* of training on testing.

Soon after Mr. Ramu's investigation, one of Infosys's biggest customers, a major bank, asked Infosys to develop a more formal approach to testing. Mr. Ramu used the

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[1] In writing this case, the author assumed familiarity with the content of a related case, "Infosys: Maintaining an Edge."

opportunity to question the bank officers about why they were looking so hard at testing. The conversation intrigued Mr. Ramu and inspired him to further examine the testing market. He spoke with more customers. He also spoke with about 15 Infosys colleagues who were running testing projects, and he pieced together a broader understanding of how testing needs were evolving. It seemed clear that testing was becoming both more important and more complex.

Mr. Ramu was inspired to take the next step. With help from his colleagues, using time all managers of his seniority could allocate to innovative projects of their own inspiration, he compiled a presentation for the senior management team. He proposed that Infosys launch and that he lead the development of a new business unit offering independent testing services. (*Testing* consisted only of *finding* errors in software. The task of *fixing* the errors, a process known as *debugging,* was tackled by the programmers of the software application.) Before presenting to the senior management team, Mr. Ramu solicited the feedback of one member of it: Srinath Batni, head of western North America, the unit of which Mr. Ramu's group was a part. At the time, senior managers were in the midst of a major initiative to expand their business. They had previously made an open request to the company for business ideas and had been examining several for some time, to the point where they were ready to launch. Although they felt Mr. Ramu's proposal had merit, they declined. They had already placed their bets.

Mr. Ramu was disheartened by the senior management team's response. Primarily, he was disappointed because he perceived senior management held the view that testing was somewhat trivial. He recalled,

> Testing always had a very low perception. If you didn't know programming, then you became a tester. Testing was a dirty word that no programmer wanted to hear.

Mr. Batni, however, did not want to pass on the opportunity. He was well acquainted with the banking customer that had asked for an improved testing approach, and he anticipated many more customers soon would be asking for the same. Because launching a testing service appeared to require only limited capital, Mr. Batni chose to support the new service launch within his own unit. The senior management team did not explicitly agree with the decision but felt it was Mr. Batni's risk to take. Mr. Ramu's new business, independent validation services (IVS), launched in July 2001.

Building a Business

Meanwhile, Infosys's senior management team was busy with other new business launches and had initiated the organizational change that created enterprise capability units (ECUs), including enterprise services and infrastructure management services. In the transition, Mr. Batni redefined Mr. Ramu's role, in line with his business plan, and had Mr. Ramu report directly to him. Mr. Batni also helped Mr. Ramu persuade Kris Gopalakrishnan, the senior management team member responsible for Infosys's IT infrastructure, to approve

an investment of approximately $1 million to purchase new hardware and software dedicated to testing.

Mr. Ramu worked to formally define IVS's services. He planned to offer customers the reassurance of complete, thorough, and professional certification methodologies conducted by testing specialists rather than the programmers themselves. The testing protocols would examine any possible mistake a user might make, validate the ability of a software application to simultaneously handle hundreds or even thousands of users, and ensure that the software was not vulnerable to hackers. IVS would test both custom-developed software and packaged software applications that customers had modified to meet their own needs.

In his business plan, Mr. Ramu specified a one-year period to construct the new business unit and prove there was demand for testing and that testing could be profitable. He had a lot of work to do.

To build a team quickly, Mr. Ramu recruited a few of the project managers with whom he had worked closely during his brief tenure at Infosys. Shishank Gupta, Anand Iyer, and Poornima Harekrishna had assisted Mr. Ramu in preparing his business plan, and all of them followed him.

Mr. Gupta had enjoyed working on the business plan and respected Mr. Ramu. He recalled,

> We worked *together* on the business plan. Mr. Ramu did not just come up with something and say, "Here it is." He focused our effort but gave us some freedom. He is very open, transparent, and approachable. He is willing to take risks and he makes decisions quickly.

Mr. Ramu also transferred to IVS a few employees who were particularly adept at testing and hired a few college graduates, building a team of nearly 20 within just a few months. Roughly half had come from outside Infosys. Mr. Ramu had developed ideas about how the unit would be organized when writing the business plan, defining four testing subspecialties: functionality, performance, security, and compatibility.

IVS benefited from being a part of Mr. Batni's business unit in several ways. First, Mr. Batni provided capital to cover operating losses during the startup phase. He also enabled assistance from existing support functions, including finance and human resources. In fact, without help from the existing recruiting engine, it would have been nearly impossible for IVS to hire so quickly. Furthermore, Mr. Batni shifted some testing work from project leaders within his business unit to Mr. Ramu's team. IVS was serving clients right away. Finally, to mitigate the risk of making speculative hires ahead of demand, Mr. Batni allowed Mr. Ramu access to his business unit's *bench*—programmers who were between applications development projects. Typically, Infosys had a utilization rate of 70 to 80 percent. While on the bench, programmers typically worked on internal projects or underwent training.

Still, Mr. Ramu felt that his team lacked a crucial element—a leader with a sales and marketing focus. In October 2001, Mr. Ramu found the perfect candidate in Anuradha "Anu" Biswas, an experienced manager from outside Infosys who had set up two testing services for her previous employers. Ms. Biswas was the first "career tester" to join the team. Mr. Gupta reflected,

> Anu was able to bring in a lot of insight about how a testing organization should be structured, about typical challenges faced by testing organizations, and about how to market and brand a testing service.

With the core team in place, Mr. Ramu and his leadership team began developing aspirations among their team—aspirations to careers in testing, traditionally not a popular career path. Ms. Biswas recalled,

> Our people, straight out of college, saw their peers working on Java code or learning about the latest Microsoft technologies and they felt they were losing out.

The IVS management team developed a set of case studies and customer testimonials to elevate the perception of testing. Renganathan Rajagopal, who joined the team about one year after founding and was leading an IVS division by 2007, described some of his own motivations:

> There was no special financial motivation to join, but there certainly was an opportunity for rapid career growth that a mature business unit could not offer. That was a key motivation for many people.

The team also faced the challenge of building expertise in testing. Through public sources, team members researched best practices in testing as thoroughly as possible. Then, they codified their knowledge and expertise in training materials for their new hires. In its early stages, IVS engaged Infosys's QA team to help solidify core processes and procedures for testing. IVS also tested several of Infosys's internal IT systems. Mr. Gupta reflected,

> We worked very well with our internal information systems team. We were able to find a lot of defects. It was a good experience, and it gave us a lot of insight into how we would engage with clients.

Selling

Mr. Ramu and his colleagues began organizing their efforts to stimulate demand. Mr. Ramu did not intend to build his own sales team. Instead, he intended to sell to Infosys's existing client base through the existing account managers. Since these account managers did not have a specific sales target for testing, Mr. Ramu had to motivate them by convincing them that selling testing work could be easier and more profitable than selling Infosys's other services. That was no easy task. Mr. Ramu recalled,

> We had to convince account managers that testing is something you can readily sell. But their quick reaction, even without talking to their customers, often was

> "Hey, my customer is not going to listen to this!" Convincing them that testing was important required an uphill climb.

Low perceptions of testing continued to rankle, but the IVS team persisted. Ms. Biswas led the effort to prepare several sales kits, and IVS set up a "road show" to reach as many account managers and project delivery managers as possible. The IVS leadership group networked tirelessly within the company. Almost every IVS employee contributed at least part-time to the effort to sell internally while working on the first few testing projects for clients. As time allowed, Mr. Batni also contributed to the internal communications effort. The work soon paid off. Mr. Ramu recalled,

> At first, we only convinced a couple of people. But then we had a few case studies and it became easier and easier for us to build momentum.

Early Results

Mr. Batni conducted routine business reviews with Mr. Ramu, comparing actual outcomes to the business plan, including milestones (see Figure 1) and cash flows (see Figure 2). Results lagged the plan, but Mr. Batni was impressed by the rate at which IVS was building testing expertise and by positive feedback from early customers. As a result, he requested a special slot for Mr. Ramu's unit during the senior management team's quarterly business reviews. Mr. Ramu was given 15 minutes each quarter to present IVS's progress.

The senior management team evaluated IVS much the same way as they evaluated the other new services, watching many of the same metrics, such as revenues, margins, customer satisfaction, and employee satisfaction. During the startup phase, the senior management team primarily expected positive trends and progress towards milestones and allowed that new units could not be held as strictly to plan as more mature units.

As Mr. Ramu had anticipated, IVS proved ideally suited to the global delivery model. Little direct interaction with clients was needed. In some cases, there were complications. Testing was best done with live data and real databases, for example, and privacy laws sometimes prohibited moving data offshore. IVS found work-arounds, such as building software to generate test databases. IVS conducted nearly 80 percent of its work offshore, and this made for handsome margins. Though early results were encouraging, there remained several unknowns. In steady state, what would be the cost to sell a project? Would IVS margins compare favorably to margins for the rest of Infosys? How much money (and aggravation) could IVS really save clients?

Refining the Organizational Model

As Infosys launched new services, its organization became more complex. At both managerial and operational levels, the company confronted the challenge of identifying, motivating, and managing the right new cross-unit interactions. IVS, along with the

leadership teams of the other new services, set up frameworks and processes for collaboration with IBUs.

As suggested by the unit's name, however, the IVS leaders aspired to operate as independently as possible. The best testing was conducted by independent testers. Interaction with other Infosys units was critical in sales and important in ensuring good handoffs as applications development projects entered the testing phase, but otherwise IVS intended to operate in isolation.

That was not possible at first. Mr. Ramu and his colleagues saw that the best testing teams contained expertise in both testing and the operational realities of the industry they were serving. Ms. Biswas explained the importance of industry familiarity:

> Testers must look at both the big picture of any business and the nuances of each software function. They must understand from the user's perspective what constitutes "good" and "bad" software. Without that frame of mind, a tester cannot understand how to "break the code" and find problems.

Infosys's many business units held deep expertise in a wide range of industries, but nascent IVS did not. To gain experience with bigger and more difficult accounts, particularly commercial banks and investment banks, IVS adopted an approach of working as "shadow testers" behind the existing Infosys applications development team. In that way, the IVS team learned about the complexities of the IT systems underpinning the banking world and, eventually, was ready to tackle testing assignments in that industry. Internal transfers to IVS, and even temporary assignments to IVS from the bench, helped build industry-specific expertise within IVS.

Otherwise, in continuing to build the IVS staff, Mr. Ramu did not significantly depart from Infosys norms. IVS mostly hired individuals straight out of college and provided the same compensation package as other Infosys units. The unit's culture was similar to that of Infosys, with a special emphasis on the importance of testing. And, like other business units, it attempted to retain employees as long as possible to gain the benefits of experience.

Acceleration

In January 2003, Mr. Ramu won formal recognition of IVS as a distinct business unit from the senior management team. IVS had its own projections and its own budget to present, distinct from Mr. Batni's. Shortly thereafter, Mr. Ramu reported $5 million in revenues for fiscal 2003—behind plan, but trends were positive.

Formal recognition from the senior management team brought a new level of support to IVS. For example, access to a deeper bench, enabled by support from the top and Mr. Ramu's internal networking, made it easier for the IVS staff to build expertise in unfamiliar industries. Rotations through testing also gave programmers a new understanding of, and new respect for, the challenge of testing. Revenues doubled in fiscal 2004. IVS was designated an ECU and built its own dedicated support functions.

Perhaps even more important than the deeper bench was that account managers throughout Infosys began hearing from the most-senior executives at Infosys that testing should be treated as a separate and independent service and that it was one with dramatic potential for growth and profitability. Infosys's senior management team wanted to augment client perceptions of the importance of testing by clearly branding it as a separate and distinct service, not just the last step in software development.

While some account managers were happy to have a new service to sell and grateful to be relieved of the burden of motivating their programmers to focus on testing, others resisted. Shifting testing work to IVS also shifted revenues away from their own business unit. Ms. Biswas recalled that this conflict was where senior management team support was most critical. Before long, Infosys settled on the approach of double counting revenues in internal reports, giving both the relevant ECU and IBU credit for work delivered by an ECU. The company also adopted a system of establishing interlocking sales targets, designated by account. IBUs couldn't just focus on the overall target; they had to hit sub-targets for each ECU. The company also redoubled its effort to reinforce a One Infy culture.

Across all of its new service launches, Infosys's senior management team understood the danger of leaving new units to sink or swim on their own. Chief Executive Nandan Nilekani elaborated:

> When new services were launched, there were a lot of skeptics. Until they made money, somebody had to give them patronage. Otherwise, they got killed.

The push from the senior management team seemingly opened floodgates. Before long, IVS was finding support throughout the company and was overwhelmed with more projects than it could staff. Ms. Biswas reflected on how the experience compared to the two companies that employed her previously:

> One of the organizations I worked for was a services company, not that different from Infosys but much smaller. It was much more difficult to establish a market presence for testing because the company as a whole was still trying to establish a presence for itself. The company simply could not lend the same level of management support we received here at Infosys. The other organization I worked for was a products company. The concept of selling services was new to the management team and the needs of services businesses were unfamiliar; there was a lot of conflict. We did not face that here.

Mr. Ramu later reflected that the acceleration of company-wide recognition that IVS was an important and potentially high-growth, high-margin business was the crucial turning point in IVS's development.

As the unit matured, performance expectations hardened. By 2005, IVS was expected to stand on its own, free of the need for support from more established business units.

Although each of the new ECUs had unique expectations, in setting goals the ECU leaders pushed each other in friendly competition.

To sustain growth and a strong market position, IVS updated its services to keep up with the latest security threats and regulatory requirements. It also invested in automated testing tools. In fact, "fraction of testing automated" became a closely watched metric. "Defect leakage rate" was another, as it was closely tied to customer satisfaction.

IVS sustained rapid growth in both 2005 and 2006, reaching $77 million in revenues and 2,000 employees in 2006. Mr. Ramu could boast high growth, strong margins, and one of the highest employee-satisfaction scores within Infosys. In addition, the new IVS Academy was training nearly 500 new hires per quarter, ensuring that every Infosys employee understood testing basics.

Despite such impact, Mr. Ramu was not yet satisfied and planned to grow IVS to 10 percent of Infosys's revenues before considering a new challenge. That would take some time. With IVS larger and standing on its own, its growth rate was limited by how quickly it could hire and train new employees.

Mr. Gupta reflected on the IVS experience:

> I wouldn't change anything. We built a great team, and I learned a tremendous amount from being involved in starting a new unit. I had to learn about every function—from sales to marketing to HR. When you are part of a business at steady state, you have a much tighter focus. It was a tremendously satisfying experience.

Infosys's other service launches around the time IVS launched also were successful. Taken together, they accounted for roughly 40 percent of Infosys's revenues in 2006. (The ECUs did not start from 0 because Infosys had provided the services to some extent even before they were formalized as ECUs and given a distinct growth mandate.) Mr. Gopalakrishnan reflected on the 100 percent success rate:

> We don't go that far out on a limb. We were not investing in basic research. In fact, we expected the new services to hit the same margin targets as our established services businesses within just one to three years.

Mr. Nilekani wanted to push harder.

> While we have been successful in launching new services, I think we can do much better. We can get to market faster and we should be ready to shoot for even bigger successes.

Exhibit 1: Milestones in the IVS Business Plan

Major Activities	Setup Phase Jun–Aug '01	Buildup Phase Sep '01–Mar '02	Steady State April '02 onwards
People Setup	• Advertise for people • Recruit people • Train people on concepts and techniques • Set up operations links with other groups and units	• Form groups • Assign targets • Train people on test tools • Execute projects	• Normal cycle ad-recruit-train-utilize • Check out outsourcing agencies
Lab Setup	• Prioritize purchase • Get quotes • Place orders	• Get space assigned • Set up hardware, software, network, tools • Set up for projects	• Analyze the need to upgrade on a qtrly basis • Upgrade lab • Create new labs worldwide
Process Setup	• Set up basic processes for various services • Set up standards and guidelines • Set up training material	• Train people on the processes • Pilot processes and improve them • Set up process capability baselines	• Continuous improvement
Sales & Mktg	• Build collateral • Set up pricing • Set up sales strategy • Train sales team • Set up alliances and partnerships	• Approach existing customers • Open a few key accounts • Follow up with partner and alliances	• Offer testing services worldwide • Consider dedicated sales managers

Exhibit 2: Cash Flow Projections in the IVS Business Plan

		Financial Figures in '000 USD	
Items	2001–02	2002–03	2003–04
	(6 months)		
Revenues	$ 2,049	$ 10,288	$ 25,576
Expenses	$ 736	$ 3,411	$ 8,508
Contribution	$ 1,313	$ 6,877	$ 17,068
Percentage	64	67	67
Investment	$ 1,164	$ 300	$ 500
Contribution After Investment	$ 149	$ 6,577	$ 16,568
Percentage	7	64	65
Resource Person Months	317	1,389	3,205
Resource Mix - Onsite %	20	20	20
Revenue Productivity - Blended (Excluding Lab Charges)	$ 6.316	$ 7.200	$ 7.800