

VINSUN INFRA ENGINEERING: ERP ON PREMISE OR ON CLOUD

Sumedha Chauhan and Sangeeta Shah Bharadwaj wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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On October 11, 2010, Sunil Satav, the managing director of India's VINSUN Infra Engineering Pvt. Ltd. (VINSUN), reached his home after a town hall meeting¹ at his company. The company's growth had led to challenges in terms of information overload and had made information management difficult. During the previous month when the company had been bidding for a civil electrification project, Satav had found that data related to input costs had not been readily available. Indeed, gathering all the data from different sources had required enormous effort. In addition, although the company had won the bid, Satav discovered that some of the costs included in the calculations were outdated by as much as a full year. Subsequent analysis had shown that this was going to result in a negative net present value (NPV)² for the project.

The regular occurrence of situations like this one prompted Satav to try to find a way to access accurate information more rapidly. He firmly believed that VINSUN had to become more competitive if it was going to keep growing. The company was using Microsoft (MS) Office Excel to process the information for its day-to-day activities. With the passage of time, this had led to the accumulation of a large number of Excel files across the company. Employees regularly encountered problems with a lack of data integrity, redundancy and incompleteness. Also, data backup was not being properly maintained.

Satav had always sought the opinions of all of the company's stakeholders before making important decisions. This was why he had organized a town hall meeting to discuss this specific issue. The solutions discussed in the meeting included the implementation of enterprise resource planning (ERP) on premise or on cloud (see Exhibit 1). Some employees were enthusiastic about ERP, while others expressed their reservations. The mixed reactions left Satav with a dilemma.

COMPANY BACKGROUND

VINSUN had been providing electrical and civil services across India for a decade. It offered electrification solutions and services for a variety of production and service industries, telecommunication

¹ A town hall meeting is an informal meeting in which all those who attend discuss an issue or concern.

² NPV = the present value of a project's cash inflow — the present value of its cost. NPV indicates how much a project contributes to a shareholder's wealth. The larger the value of the NPV, the more wealth it adds.

companies, commercial buildings, institutional campuses, residences and hospitals. The company's annual turnover had almost tripled in the previous five years (see Exhibit 2).

Satav was born in a small village in the Betul district of the state of Madhya Pradesh, the second largest state in India. It has traditionally had an agrarian economy, but recently its gross domestic product (GDP) has grown rapidly to above the national average.³ Interested in becoming an entrepreneur since childhood, Satav had moved to Indore, Madhya Pradesh, to pursue a degree in electrical engineering at one of the most highly regarded institutes in India. He started working part time to gain practical experience in addition to his studies. Working as an electrical engineer at a cold storage plant in the city helped him put aside some money so that he could start his own business. With only very humble savings, he rented an office in the city and started working as a consultant for the cold storage plant. He founded VINSUN in 2002, and it had grown from a small start-up into a small- and medium-sized enterprise (SME) with 60 employees. The organization had a mix of onsite and office employees (see Exhibit 3). Satav planned to double the employee base over the next three years to fulfill the growing demands of his company's customers.

VINSUN was largely focused around Indore and serviced approximately 40 per cent of the cold storage plants in the area. With stability in its existing business and the capability to build on this, the company had made forays into civil engineering projects such as building mobile phone towers and undertaking exchange installation projects. More recently, VINSUN had also diversified into electrical work for commercial complexes and was planning to enter into unexplored segments of the industry.

For his exemplary work, Satav received the Rashtriya Udyog Ratna Award from the National Education and Human Resource Development Organization in 2010 and an Excellence Service Award from Bharti Airtel Ltd., Tata Teleservice Ltd. and Flexituff Industries in 2008.

SEARCH FOR AN IT SOLUTION

VINSUN's chief information officer (CIO), Ruchira Kulkarni, had some previous experience working with an information technology (IT) company, so Satav discussed data management issues with her. When Kulkarni told him that ERP solutions could help to resolve these issues, Satav asked her to investigate further.

Kulkarni started investigating various ERP solutions and the vendors who could implement them. She had two alternatives in mind: ERP on premises or ERP on cloud. After an extensive search, she zeroed in on and invited quotations from Bluechip Corporation (Bluechip), one of the major ERP solution providers, and a start-up called Codeautomations. She analyzed the costs of all available options, keeping in mind that there would be two laptop users and six users at workstations.

Bluechip's ERP on premise solution appeared to be very versatile and completely suited to the company's needs. At the same time, however, this product offered functions such as fixed asset management and fleet management, which VINSUN would not need at any time in the near future. Also, although Bluechip had a track record of successful implementations and had various customization options to produce a product that included only the required modules, the cost of customizing it somewhat offset the savings. Kulkarni felt that the product was quite useful but that it would put stress on the company's IT budget (see Exhibit 4).

³ http://articles.timesofindia.indiatimes.com/2012-06-29/india/32471751_1_growth-rate-agriculture-growth-negative-growth, accessed on January 10, 2013.

Codeautomations provided quotations for both ERP on premise and ERP on cloud (see Exhibits 5 and 6). Network costs are provided in Exhibit 7.

TOWN HALL MEETING

Satav organized a small meeting at 4 p.m. on October 11, 2010, to be held before everybody left for home, and presented the information he had obtained about these options. The following are excerpts from the meeting:

Satav: As you know, the past few years have been very good for our company. We have grown tremendously. However, our needs for maintaining and processing information are also growing very rapidly. Our current information management system is dependent on individual employees since we maintain our data on local computers and search manually when we are required to access it. Since our workstations are not connected to each other, we collate the information for our projects manually from a number of different sources. This approach worked well for the company when it was small. However, with the increase in size and the growing complexity of the work we will undertake in the future, we must find a way to provide greater efficiency. I have convened this meeting to discuss what we should do about this.

I asked Kulkarni to propose some options, and she has gathered information regarding various ERP systems. I would like to hear your views after she has explained the benefits of ERP.

Kulkarni: Implementing ERP systems will help us to overcome our limitations. It will be a good strategy that will allow us to focus more on our core activities and to get real-time data. Rather than maintaining multiple redundant copies, data will be stored safely on a database, and we will be able to retrieve it any time that we want by using programs that are faster and more accurate than what we currently have. More importantly, ERP will help us to adopt best practices within our industry.

Rajesh Lokhande (project manager): ERP is indeed helpful and does assist organizations in some cases. However, we have heard about too many cases where companies have invested a lot of resources into ERP implementation and ended up with zero results. In some cases, it has even led to a decrease in efficiency. Many of our users are not technology savvy, and it will be very difficult to train them on ERP. Are we sure that we can implement ERP successfully?

Subhash Deshmukh (assistant manager): I agree that we are facing problems with our current system, but if we implement an ERP system, this will change the way we work and may ultimately render us less productive, as Lokhande has pointed out. Our business processes will be changed, and it will take a significant amount of time to learn to use and become comfortable with the new system. Keeping these factors in mind, a customized solution would seem to be a better option. This solution must be exactly like our current system, but automated. Since our work practices and processes will not change, this appears to be a less risky option.

Kanika Sharma (project manager): I realize that all of you are comfortable with the current system and am, therefore, in favour of a customized solution. However, ERP could become a game changer for us. Once we have become comfortable with it, we would reap greater benefits from it, just as other companies worldwide have done. Also, my personal opinion is that we should go for ERP on cloud. This would save us the huge initial investment cost. We would also be able to start

working on solutions immediately and the entire operational risk would be transferred to the service provider.

THE DILEMMA

After the meeting, Satav contemplated his course of action. The meeting had not gone well; this was evident from the reactions of some of the employees who had attended. Satav was able to gauge their moods, and many of them seemed strongly opposed to the proposed changes. He was about to take a major decision, and he knew that such a change could lead to failure, especially if the organization did not accept the change wholeheartedly. If he now went ahead, he would have to do the heavy lifting by convincing people of its merits. He thought about possible ways he could promote the efficacy and necessity of making this change.

His other decision concerned which solution to select. A customized solution did seem to be the easiest choice for solving the company's problem for the time being while also satisfying the employees. However, this was tantamount to sweeping dust under the carpet. This information system would not be significantly better than the existing one since it offered no interconnectivity between the functions.

After a thorough analysis, Satav determined that he could set aside a budget of around 2 to 3 per cent of the company's annual revenue for IT expansion. With respect to ERP, he was concerned that the cost of Bluechip's ERP solutions would be substantially higher than this. However, Codeautomations' lack of experience was a negative point since one small mistake could jeopardize his entire investment. Satav also had to make a choice about whether to go for ERP on premise or on cloud. Contrary to popular opinion, cloud might prove to be costlier over the long term; indeed, he was confused about why cloud was considered to be less costly. Security would be the primary concern in the case of ERP on cloud because the company's data would be stored on the service provider's database. He and his employees would have to build trust and receive assurances from the vendor regarding that important consideration. However, ERP on cloud would be accessible from anywhere through the Internet. This would provide the flexibility to work from virtually any location. Yet, if any issues arose about the speed and connectivity of the Internet, ERP on cloud would not work properly while ERP on premise would not require Internet reliability if the users accessed the software from inside the VINSUN network. Satav pondered what action he should take.

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EXHIBIT 1: CLOUD COMPUTING

"Cloud computing is a model for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction."⁴ In cloud computing model, IT services are distributed. These services can be accessed over the Internet or intranet. Cloud providers, rather than the organizations, have control over services and resources in this case. Cloud has three service models: cloud software as a service (SaaS), cloud platform as a service (PaaS) and cloud infrastructure as a service (IaaS).

Though these services are adopted for different purposes, they have a common business model in which the computing resources are provided on rent. SaaS is the software application that is delivered over the Internet. PaaS provides an application development environment that facilitates developers to access the resources for application development. IaaS provides a large set of virtual computing infrastructure resources to customers via the Internet.

Sources: M. Armbrust, A. Fox, R. Griffith, A.D. Joseph, R. Katz, A. Konwinski, G. Lee, D. Patterson, A. Rabkin, I. Stoica and M. Zaharia, "A View of Cloud Computing," *Communications of the ACM*, 53.4, 2010, pp. 50–58; A. Lin and N.-C. Chen, "Cloud Computing as an Innovation: Perception, Attitude and Adoption," *International Journal of Information Management* 32.6, 2012, pp. 533–40.

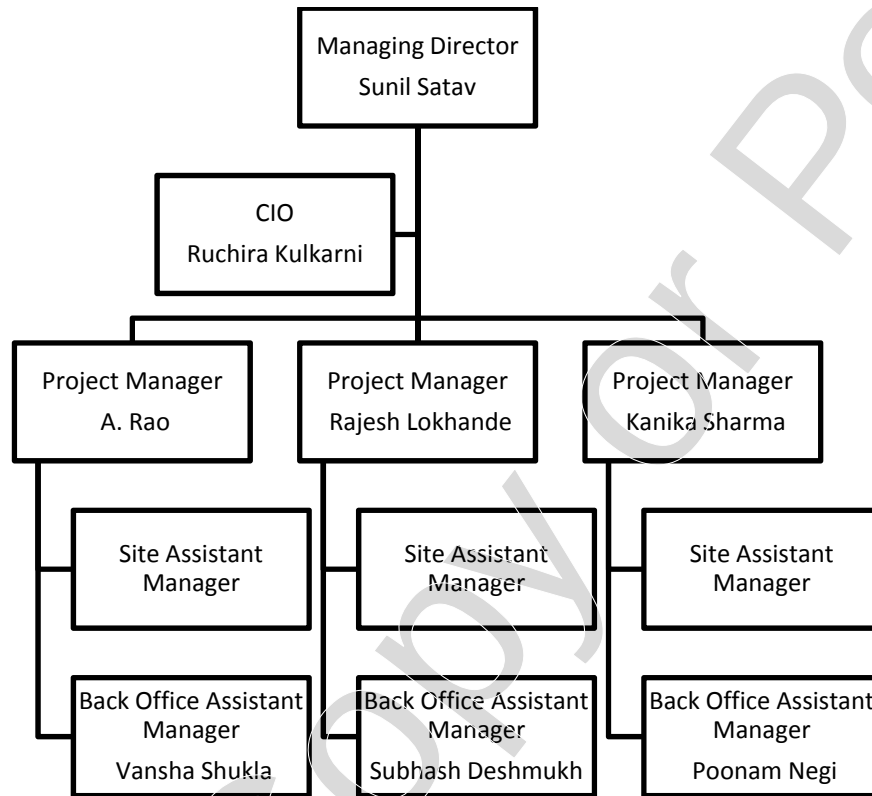
EXHIBIT 2: ANNUAL TURNOVER OF THE COMPANY

Year	Turnover (in million units of currency)
2000–01	2.4
2001–02	4.5
2002–03	6.5
2003–04	8.2
2004–05	10.1
2005–06	15.9
2006–07	22.5
2007–08	31.5
2008–09	21.0
2009–10	40.0 (Work Order In Hand And Work In Progress)
2010–11	45.1 (Work Order In Hand And Work In Progress)

Source: VINSUN internal documents, 2011.

⁴ Lee Badger, Tim Grance, Robert Patt-Corner and Jeff Voas, "Draft Cloud Computing Synopsis and Recommendations," *NIST Special Publication*, pp. 800–146, 2011.

EXHIBIT 3: ORGANIZATIONAL CHART FOR VINSUN



Source: Interview with VINSUN.

EXHIBIT 4: COSTS FOR BLUECHIP CORPORATION'S ERP ON PREMISE SOLUTION

Cost Component	Cost (in units of currency)	Detail
Initial Hardware Cost per Item		
Workstations	34,950	HCL Beanstalk AD1V0028 All-in-one (six workstations required)
Workstation UPS	3,715	MICROTEK 1 KVA (six workstation UPS required)
Laptops	66,244	Dell Latitude E6430 Premier laptop (two laptops required)
Server	100,000	Bluechip's ERP server
Back-up Server	100,000	Bluechip's ERP back-up server
Server UPS Systems	3,875	MICROTEK/LUMINUS 1 KVA (two server UPS systems required)
Ongoing Hardware Cost		
Hardware Maintenance	Yearly average maintenance rate: 10% of initial hardware cost	
Initial Software Cost		
ERP Application Software	120,000	Per user initial licence cost (eight licences required)
Consulting	80,000	One-time stand-alone consulting expenditure (Includes business process and fit, gap analysis, requirement analysis, implementation planning and configuration)
Deployment cost	520,000	
Training	180,000	
Ongoing Software Cost		
Software Maintenance	Yearly average maintenance rate: 18% of initial licence cost	

*Note: Network Costs are presented in Exhibit 7.
Source: Interview with VINSUN.*

EXHIBIT 5: COSTS FOR CODEAUTOMATIONS' ERP ON PREMISE SOLUTION

Cost Component	Cost (in units of currency)	Detail
Initial Hardware Cost per Item		
Workstations	34,950	HCL Beanstalk AD1V0028 All-in-one (six workstations required)
Workstation UPS	3,715	MICROTEK 1 KVA (six workstation UPS required)
Laptops	66,244	Dell Latitude E6430 Premier laptop (two laptops required)
Server	70,000	Hp Server ML 330G6
Back-up server	70,000	Hp Server ML 330G6
Server UPS Systems	3,875	MICROTEK/LUMINUS 1 KVA (two server UPS systems required)
Ongoing Hardware Cost		
Hardware Maintenance	Yearly average maintenance rate: 10% of initial hardware cost	
Initial Software Cost		
ERP Application Software	30,000	Per user licence cost (eight licences required)
Installation cost	200,000	
Ongoing Software Cost		
Software Maintenance	Yearly average maintenance rate: 15% of initial licence cost	

Note: Network Costs are presented in Exhibit 7.

Source: Interview with VINSUN.

EXHIBIT 6: COSTS FOR CODEAUTOMATIONS' ERP ON CLOUD SOLUTION

Cost Component	Cost (in units of currency)	Detail
Initial Hardware Cost		
Workstations	34,950	HCL Beanstalk AD1V0028 All-in-one (six workstations required)
Workstation UPS	3,715	MICROTEK 1 KVA (six workstation UPS required)
Laptops	66,244	Dell Latitude E6430 Premier laptop (two laptops required)
Ongoing Hardware Cost		
Hardware Maintenance	Yearly average maintenance rate: 10% of initial hardware cost	
Ongoing Software Cost		
Servicing fee	2,000	Per user per month (required for eight users)
Storage Costs (IaaS)		
Data Storage Cost	60,000	Annual cost (It is assumed that this cost will increase by 10% every year as the business will grow dynamically.)

Source: Interview with VINSUN.

EXHIBIT 7: NETWORK COSTS

Cost Component	Cost (in units of currency)	Detail
Initial Network Cost		
Router	15,479	RV082 Model (one router required)
Network Infrastructure set-up cost	120,000	
Ongoing Network Cost		
Router Maintenance	Yearly average maintenance rate: 10% of initial equipment cost	
Network Infrastructure Maintenance	Yearly average maintenance rate: 10% of initial infrastructure cost	
2 Mbps Internet line	999	Monthly cost of shared Internet line.

Note: ERP on Cloud will not require network infrastructure setup.

Source: Interview with VINSUN.