

Face Off: Technology Strategy vs. Organizational Culture

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April 2013: The Chairman and Executive Officer (CEO) of XY Power Ltd.¹ was going through the morning newspaper in his chamber. He still had an hour's time before the meeting he had called for to discuss the power distribution situation in the state. Once again highlighting the poor distribution system in the State, a quality report on India's 35 electricity distribution companies, initiated by the Union ministry of power, had ranked XY Power Ltd at 23. The report had been prepared by rating agencies like ICRA and CARE and had put the state distribution company in 'B' category, 'C' being the lowest. Distribution companies from state GT occupied the top four slots with A+ rating.²

As a result of the various technological initiatives taken, XY Power Ltd. had been able to reduce the AT&C losses from about 40% in 1990s to 24% in 2010-11 and aimed to reduce it further. But the CEO knew that the state's power minister's claim that "the reforms initiated by the state discom will surely take them to the top slot" was easier said than done.

The CEO was a concerned man. Last summer the city had witnessed riots after a nightlong power outage. Residents had vandalized power sub-stations, beaten up officials, held some of them hostage and blocked roads in some parts of the city. The winter situation too had been bleak with newspapers carrying reports of water crisis in various sectors due to irregular power supply. As reflected by the numbers in Exhibit 9 and Exhibit 10, power distribution companies in the adjoining state, a public private partnership, had fared better than XY Power Ltd. He knew that he would have to raise a few tough questions in the meeting. 1.) Will XY Power Ltd. be able

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¹ The name of the company and different characters have been disguised for the purpose of the case

² Saini, M. Quality report puts discoms in lower rung. The Times of India, April 2, 2013, Pg.7.

to meet the customers and ministry's expectation this summer? 2.) What were the bottlenecks being faced? 3.) Were they working as a committed team to successfully implement the technology path they had charted out for themselves or should they succumb to the Government and agree for private sector participation?

About the Company

XY Power Ltd. emerged from the erstwhile State Electricity Board in 1999, and is engaged in the distribution of power in the southern zone of the state covering ten districts, catering to around 24 lakhs customers. It is one of the distribution companies that were formed when the State Electricity Board was reorganized into four different companies – two distribution companies, one transmission and one generation company. The company is committed to set new benchmarks in standards of corporate performance through pursuit of operational and financial excellence. It aspires to be the best distribution utility in India by enhancing its technological leadership and consumer satisfaction.³

At present, XY Power Ltd. has 147 numbers of 33 kV substations along with 1937.05 kms. of associated 33 kV lines; 262 numbers of power transformers with an installed capacity of 1824 MVA and 37745.85 kms. of 11 kV line and 52729.14 kms of LT line. There are approximately 1.01 lakhs distribution transformers having an installed capacity of 6165 MVA which are catering to the load requirements of consumers. Exhibits 2, 3, 4, 5 and 6 give details of the operational scope of the company.

Challenges for XY Power Ltd.

At the time of formation of the company, the immediate challenge was to sustain the losses. The State Electricity Regulatory Commission (SERC) lay down guidelines that the utilities should make efforts to reduce Aggregate Technical and Commercial Losses (AT&C) losses by around 2% per year. According to interviewees, the growth of power demand in the state on an average

³ Vision. Retrieved from <http://www...../main/aboutus/vision.htm> on December 30, 2009

had been of the order of 7% to 8% from 1995 to 2000-01, but since 2001-02, it had been in the range of 10% - 12% for the state as a whole. In certain cities and other industrial belts, this rate during the past 4-5 years had touched a high level of 25%. The aspirations of the consumers, their paying capacities, their expectations and electrical equipment available for consumer use had contributed to a rate of growth, higher than what existed a few years back. Taking into account the power load growth, and also envisaging the growth in the future, resorting to various technological initiatives for augmenting its network as well as to improve the efficiency of its operations, was the only available option for the utility. As one senior executive engineer, said, "Biggest issue before all utilities – is how to bring down losses and become financially sustainable. Government is gradually withdrawing support. The amount of subsidy is reducing. It is not a matter of competition. It is a matter of survival. At least should be able to get some returns on my investment so that my company can run without any Government support." The Government in order to introduce competition, in various states, had also distributed license to private players on the condition that the AT&C would be reduced.

System Augmentation and Improvement

The company made a comprehensive distribution expansion programme at an estimated cost of Rs.3413.60 crores during the 11th 5-Year plan. According to associate general manager, sub-divisional office, "Main driver has been the Government policies. Under the Accelerated Power Development and Reform Programme (APDRP), we keep on getting additional aid from the Central Government." Through the investment the company planned to reduce losses and also deliver adequate and quality power to consumers.

Driving the Network Technological Initiatives

The company strengthened the power system both at the sub-transmission and distribution ends through creation of new 33 kV substations, augmentation of existing ones, bifurcation of overloaded feeders and strengthening of LT distribution system.

Mentioned below are the initiatives taken by the company to, not only improve the distribution network but also increase the efficiency of operating the network.

Selective Implementation of HVDS (High Voltage Distribution System) and Low Voltage Transmission Network.

In slum and rural areas, theft of power was rampant. The HVDS system warranted to bring down losses as small service cables from transformers to the consumer premises had to be set up, thereby replacing naked cables. The company went for selective implementation of the HVDS system. The areas where possibility of theft from nearby low transmission (LT) lines was there were selected for implementation of HVDS lines. The High Voltage Cables were procured from vendors within India. According to senior executive engineer, "Cost is very high. HVDS is a costly affair because small transformers have to be put for few customers. Initiatives like HVDS are to solve immediate business problems."

After implementation of HVDS system, apart from improvement in voltage levels, the company noticed an increase in the number of registered consumers.

In rural areas loss of electricity due to hooking from bare conductors was a rampant problem. Not having a very good experience of implementation of Arial Bunch Cables, wherein people would cut through the insulation too, the company had been very cautious with respect to revamp of the low voltage transmission network. Arial Bunch Cables had been implemented only in selective rural areas.

Efficient Isolation of Faulty Section.

Oil breakers were old technology and the maintenance cost was very high. After 1996, with increase in load growth, the number of tripping increased and the number of fire incidents was high. Vacuum breakers were not very expensive and were safe in operation. According to a senior executive engineer, vacuum breakers were available within India and the company started using vacuum breakers in 1998 / 99.

The company procured breakers from vendors and replaced the breakers on need basis with no specific strategy followed. In this context a senior executive engineer said, "If some sub-station developed fault and breaker was found to be totally useless and had to be replaced, we went for a vacuum breaker. Slowly at all sub-stations breakers were replaced."

According to official estimate the number of total feeder tripping reduced from 690 in 2006-07 to 65 in 2009 whereas the total duration of feeder tripping has reduced from 684.76 hours in 2006-07 to 68.50 hours in 2009.

Better Metering of Electricity Consumed.

The mechanical meters installed at all the consumer premises were not sensitive to record very low energy consumption. According to a senior executive engineer, "Electronic meters were much more sensitive. It was the inherent design that mechanical meter would start recording only after a minimum load level."

Tampering was rampant in mechanical meters, which was leading to a lot of commercial loss. Additionally, the regulator had also passed a law for replacement of mechanical meters. The company decided to replace all mechanical meters with electronic meters. The electronic meters, also, recorded a lot of data which could be used to analyze load conditions. Tampering could be recorded better and theft prevented in case of electronic meters.

Electronic meters with optical ports, being a costly technology, were implemented by the company only for HT consumers, that is, consumers having a load of more than 30kW. In this context a senior executive engineer said, "Downloadable meter technology had not developed in India. Whosoever had that kind of facility was asking for a very high price. It was very costly. Because HT consumers are high paying consumers, downloadable type meter was installed only for HT consumers." The company procured meters for the HT consumers from reliable suppliers.

The company, when replacing mechanical meters with electronic meters, targeted the feeders that were recording the highest losses. The company metered around 97% of consumers with only 61% of the agricultural consumers been metered.⁴

Meter readings were downloaded on a Common Meter Reading Instrument through the port. For the rest of the consumers, although electronic meters were installed, the readers read them manually and wrote down the readings in a log book.

The company re-located the meters of consumers to outside the premises, either on the pole or onto the main gate, so as to eliminate meter tampering and pilferage of electricity. Relocation also prevented the meter readers from giving excuse of premises being locked. According to an executive engineer, "Weather proof boxes were used to reduce chances of meters getting spoilt." This led to an increase in percentage of billing and hence greater revenue.

In 2013 the company planned to build an advanced metering infrastructure for its high-consumption connections, that is, the region's industrial and commercial users. Under this scheme, all connections utilizing more than 10 kilowatts of power would be linked up with 'advanced' or smart meters, handy not just for accurate billing, but also equipped with voltage control functionalities. According to a company official, "Once meters are installed, consumers will be able to keep an eye on their daily power consumption and tariff and adjust accordingly." The new meters would also make monitoring work easier at the discoms' (distribution company's) end.

Better Monitoring of Electricity Consumed and Energy Audit.

Erstwhile the State Electricity Board had lacked a proper system of energy audit. The company installed energy meters on all transformers with the purpose of keeping track of the difference between incoming units of energy and the units of energy billed for the customers. The company also hoped to balance load on all the phases supplied by a transformer. According to a

⁴ SERC-Well begun but more to be done. Powerline, 14(4), December, 2009.

senior executive engineer, although 90% of transformers in the city were meter enabled “the system of evaluation was lacking. Time of taking consumer readings did not coincide with the time of taking readings from DT meters.”

The company prioritized high loss feeders and installed energy meters procured from meter vendors, on all transformers lying on those feeders.

The company started with the metering of all the 11 kV feeders before leading to the metering of the distribution transformers. According to report by Powerline, by December 2009, only 15% of the distribution transformers had been metered.

Remote Control over Network.

Remote monitoring units were installed on feeders which would help the company remotely get information about the load on feeders. Remote operations were however not possible. Although devices had been installed on 2500 11kV feeders, it was a scalable system. The company in future planned to go for a complete Supervisory Control and Data Acquisition System (SCADA) system which permitted remote operations. The company purchased license for the data acquisition system from NLC Ltd. and even outsourced the installation of the units onto the feeders to NLC Ltd.

The company in future also planned to remotely control the distribution network in the city, through distribution automation. Manual control would be done away with. In this context a senior executive engineer said, “If in future the gap between demand and supply is bridged and, if there is a breakdown due to a fault, the government would be losing revenue. It is the thinking of the government and management that the city is the highest revenue earning district and maximum 10kW customers are here.” The company felt that with distribution automation not only would outages reduce but all reliability criteria would be met, thereby leading to increased customer satisfaction. After a failed attempt at installing the Geographical Information System (GIS), the company planned to give another try under the APDRP scheme.

As depicted in Exhibit 7, the company has over the years reduced the transmission and distribution losses.

Driving the Process Improvement Initiatives

According to a senior executive engineer, “Commercial losses were due to various reasons. There were defective meters, reading was not proper, consumers were not billed, consumers who went out of the network were still getting the bills.” The company realized that to make the company commercially viable, it was essential for the customers to be satisfied. It was therefore necessary to take initiatives which would improve the efficiency of operations and have uniformity in rules and operations. As a senior executive engineer said, “Main aim is to do away with arbitrariness and that norms of SREC are also followed.” The company took a large number of initiatives primarily in billing, metering and revenue collections, initiatives targeted for increasing customer centricity and customer responsiveness. And also to have correct data available at all times.

To start with automation, the company planned to focus at the sub-divisional level where most of the customer interactions took place. The company opted for customized software. According to senior executive manager, IT, “Standard ERP /module always have a standard format which was not gelling in with my user, my existing manpower. So we went in for something where the user would have to do customized solution.” The company started with in-house software, billing system wherein all customers were brought onto a common platform. The software development was outsourced to small-timers which left the company with lot of deficiencies in the system. Thereafter the company decided to go for an integrated solution for IT which was customized according to the needs of the users. It was decided to outsource the activity. Justifying their decision the senior executive engineer, IT, said, “It was the industry policy that the company would focus on its core competency. IT is never a distribution company’s core competency, so we outsourced that activity.”

The company decided to follow a methodology wherein the implementer too would be having a stake in the implementation. Software development was outsourced on BOOT (Build-Own-Operate-Transfer) model for the entire project cycle. According to senior executive engineer, IT, it was the prime responsibility of the implementer company to depute one person at the XY Power's site who would be responsible for operations and training. Evening times were devoted to training.

The customized solution was topped by a standard ERP solution, SAP, for financial controlling, material management, quality control, projects system & plant maintenance. Apart from the employees having become more computer literate after working on the customized solution, it was more cost-effective. In this context senior executive engineer, IT said, "This was thought to be a cost effective solution. Standard software comes in as user license based. Custom software was on enterprise base. We took care of –minimal IT expenditure. So all our sub-divisions were on a customized platform and over that ERP was implemented. The number of licenses reduced. I have 113 sub-divisions which are controlled by 23 operational divisions."

The implementation of SAP and the development of customized technology solution were handed over to TC Ltd. It was a Government company and coordinated the implementation of IT projects. TC Ltd. transferred the development work to H Technologies which had the experience of handling big IT projects. After doing an in-house study of XY's processes it customized the processes according to its requirement. In the first stage of implementation all the manual handling of processes was replaced by a computerized system, with no change in processes. In this context senior executive engineer, IT said, "No processes have changed. I call it the 3 layered implementation approach wherein at the first instance we just need to bring manual system onto an IT platform. It is only after that can go in for re-engineering, adoption of best practices etc."

The company had a phased implementation of the automation system. Because urban areas promised a higher quantum of revenue and greater customer satisfaction, they were chosen for the first stage of implementation. Among the urban areas the solution was first rolled out in

city H. In this context senior executive engineer, IT, said, “The solution was first rolled out in city H. The IT department was there and any problem could have been easily solved. Then it was rolled out in cities F & G where, not only is the revenue more but customers are also more vocal. Customer satisfaction would be acknowledged better in the urban areas.”

The start of the automation project was accompanied by restructuring of some of the urban sub-divisions. Internet connectivity between all the touch-points was provided by BS Ltd. and the 13 sub-divisions automated, were hosted on the server at H Technologies.

According to senior executive engineer, IT, till 2009 out of a customer base of around 25 lakh customers, 5 lakh customers had been put on the system.

In addition to initiatives take in metering and billing, the company automated the application of connection for new meter. Mentioned below are the initiatives taken by the company to improve its processes so as to increase customer satisfaction through efficient internal working.

Automation in Monitoring of Complaints and Automation in Billing Amendments.

The company lacked an efficient system of tracking customer complaints and handling of billing related issues. With automation a unique customer id was created against each customer request and any person at the sub-division could log in to view the status of the request. The customer had the option of lodging complaint through three modes. He could lodge complaint on the web-site. The complaint went to their head-office, in city H which distributed the complaints to the associated sub-division office. He could personally go to the office and lodge a complaint at the counter or give a call to the call centre. The efficiency of handling customer complaints improved, with complaint resolution that initially took around six hours now taking less than one hour.

The “Saujanya” counter module set up by the company dealt with consumer grievance issues like grievance registration, grievance summary, complaints registration, complaint type summary and request escalation.

Automation in Inventory Management.

The management of inventory at XY Power was outsourced to Department of Electronics and Computers. It was an off-line system where manual inventory records maintained by XY Power, were fed into the system by the Department at the end of the month. The maintenance of inventory records prevented employees from playing around with numbers because material received had to be entered into the system and issued against a request. However, with such a system it was difficult to keep on-line track of inventory in stores. According to senior executive engineer, IT, “We could only get status of inventory from reports generated at the end of previous month.”

The company in future planned to connect all the stores and implement SAP which would enable to keep on-line track of inventory at different stores.

Automation in Metering to Billing Cycle and Enforcements. According to senior executive engineer, IT, the metering to billing cycle at XY Power, since 1989-90, had been outsourced to an agency HT Corporation. The meter reader went to customer premises and noted down the readings on a customer blank. The customer blank was sent to the agency who fed all the readings on to the billing engine. With automation of the sub-divisions, separate software was created by H Technologies. The sub-divisions transported all the billing information to the sub-division automation system. The sub-divisions not automated till date, have their bills generated through the readings fed into the HT Corporation’s billing engine. The printing of bills was outsourced to HT Corporation. The automation of the metering to billing cycle helped the company have integrated software linked to the other modules.

Billing was also linked to enforcement module developed by H Technologies to keep track of enforcement activity. If there was drastic dip in consumption, triggers were sent from the Billing module to the enforcement module.

Automation in Recovery and Payments Collections. The company lacked a proper system of maintaining records of payments received. When a customer came with payment a manual receipt was given to him. The receipt was manually fed into the ledger, and consumer only after a couple of months was told of his account status.

The company outsourced the development of Payments module, which would keep a computerized record of all payments received against the bills due, to TC Ltd. who handed over the development work to H Technologies. On receipt of payment from customer at the sub-division collection counter, the cashier logged into the system and posted the record in the customer's account. The automation in payments collection led to automatic update of the customer account and according to an executive engineer, "the consumer was then and there told of his account status." The consumer was given a receipt on the backside of the bill.

The company in future also planned to launch a payment gateway linking the bank with the sub-division automation system so that a customer could make payment of his bills through the web-site and payment gateway. The collection of payments from customer premises was outsourced to agencies run by State Ex-Servicemen League while company tied up with external agencies for the setting up of easy-bill counters in shops, malls etc. According to the senior executive engineer, IT, " These agencies have been given access to the XY Power system through user id and password. They can go to the nearest sub-division and key in the details. These agencies deposit cheque and cash into the XY Power's account and hand-over the pay-in slip, MIS report etc. We get a statement from bank also, which facilitates reconciliation."

After automation in recovery and collections system, as depicted in Exhibit 8, the collection efficiency of the company improved.

Better Storage and Retrieval of Documents.

Initially customer care initiatives being poor, the company maintained hard copies of customer files. Tracing these files was a problem in case of need. The document management system was developed to store the scanned documents of the consumers. Automation of storage and retrieval of documents permitted easy retrieval of the documents. This helped in improved customer care. According to a sub-divisional officer, "Currently hard copies as well as electronic copies of documents are maintained."

The automation of processes not only improved working of the sub-divisions but also helped in generation of MIS reports. According to associate general manager, sub-divisional office, "Previously everything was done manually. I had lot of ledgers lying with me and would do correction in them. Now I can do it in seconds on the system. I have data available for 3 years. I can retrieve any information. Any officer can log onto the system and find out at one glance what the overall position of a particular sub-division is."

Driving the Customer Service Improvement Initiatives

Focus of the company was earlier not customer oriented. The company realized that to make the company commercially viable along with efforts being made to bring down losses it was essential to improve the customer services.

According to reports the company in addition to taking various technological initiatives had opened 6 fully computerized customer care centers, connected to the common network, to increase the comfort level of the customers. This section describes the various technological initiatives taken to improve customer services and interface with the customers.

Comprehensive and Well-Defined Company Web Site.

The company developed its web-site. The web-site through gate-way connected to the central database, allowed retrieval of pertinent customer information. The consumer could see his current bill, past consumption pattern and payment details for last one year on the web-site.

According to senior executive engineer, IT “We have also enabled a complaint tracking model on the web-site and have created a link to the main system.” The company also enabled a system wherein the customer could from anywhere log into the system and submit his request on the basis of a created request number. As the senior executive engineer, IT, “The customer need not go to the sub-division to lodge a complaint.”

The development of web-site was out-sourced to HT Corporation initially in 2003 / 04 but in 2006 maintenance was shifted in-house. In this context senior executive engineer, IT said, “Any change in web-site had to be coordinated with HT Corporation. As a result there was a lapse in system. Now with in-house maintenance we can immediately do the required changes.”

Routing of Complaints through Call Centre.

The individual complaint centers had manual registers. Customers either called up on the landline number or went to the complaint centre to lodge complaints. The complaints were manually written in the complaint register by the person at the landline number. To increase customer convenience the company set up distributed call centres, ‘ Bijli Suvidha Kendra’ at the circle level. There were 5 or 6 numbers on which the customers could call. For no power complaints, calls from that area were made to respective Bijli Suvidha Kendra. In 13 locations where the sub-division automation system had been rolled out, call centers were connected to the company network. All the complaints were fed into the computerized system. In locations where manual system was there, the call centres had a stand-alone system for lodging complaints. Next day MIS was sent to the sub-division office regarding the number of complaints and their status. The company gave mobile phones to linesmen at the complaint centre. According to a senior executive, “When a customer makes a complaint, the person in the complaint centre transfers the complaint to people on the site. Consumer is not required to go physically to the complaint centre.” Customer also received calls from Bijli Suvidha Kendra, first informing how long the complaint would take to be addressed and then enquiring if the fault had been rectified. According to a sub-divisional officer, “Our aim is to look into complaints within shortest possible time. Previously, it used to take months for any complaint

resolution. Nowadays complaint is resolved within 2/ 3 days.” The integrated system also allowed the sub-divisional officer to check on-line the status of the complaints.

Longer Payment Collection Option.

The company introduced Any Time Payment Machines (ATPMs) for payment of bills in urban areas. In rural areas payment was received only during the harvesting season, collection of which was outsourced to the ex-servicemen league. These machines were operational from 8 a.m. to 8 p.m. and accepted both cash and cheque. Due to problems of connectivity the company has launched off-line ATPMs. With generation of billing, data was sent to the ATPM Company which would load the data onto the machine. According to the senior executive engineer, IT, “Any consumer can, thereafter go and enquire about his bill and make payment. At the end of the day user interface is created between the ATPM Company and its system where they upload the information onto the XYZ Power’s automation system.”

Generation of bills on the spot. There were errors in noting down the meter readings and there were complaints regarding customers not getting the bills on time. The company launched spot billing in prominent cities of the state. Hand held machines, 6 to 8 inches in size, with 100GB of memory storing customer details of around 200 customers were carried by the meter readers. The meters had bar codes, scanning which, the meter reader got all the consumer details. Bill was printed from the machine and the consumer had the option of making payment then and there by cheque. He was also given a receipt for the payment made. According to an executive engineer, “In a day not more than 100 bills are generated. After bills for all the consumers are generated, the information is fed onto the computer and then new records are uploaded on the machine.” This updated the records on the main server for bill reconciliation and MIS.

The company outsourced the entire activity to State Ex-servicemen League. An executive engineer justifying the decision to outsource said, “We do not have labour. There is Government policy that we cannot hire more people.”

Spot billing reduced the chances of faulty bills being generated as the customer could check the readings and the bill at his premises before making payment. According to an outsourced employee from the State Ex-servicemen League, “If there has been a mistake then the incorrect bill is cancelled and correct bill is raised.” The system apart from reducing the billing cycle which used to be three months, has also assured that the person went on site to take down readings.

The company also launched successfully the system of sending bills to consumers through SMS and also planned to provide bills through email to all those consumers who would get themselves registered with XY Power to avail of the facility.⁵

The company through all initiatives planned to reduce AT&C loss levels to 15% by 2014. According to associate general manager, Sub-divisional office, “Initially we were able to give electricity supply for 19 hours. In the past 5 years there has been a five times increase in load and we are able to meet load. It means that there has been an improvement.” Exhibit 8 gives details on financial performance of the company.

THE ORGANIZATIONAL CULTURE

HR Policies - Building Employee Expertise and Motivation Level of Employees.

Formal training sessions held for employees was not a common feature at XYZ Power. This is evident from what an employee had to say, “In my tenure of 25 years with the company I have attended two to three trainings.” According to a senior executive engineer involved in trainings, “Previously, there was no system of sending employees for training. There was a committee formed to assess the training needs of the employees. It was found that most of the people had not gone for any training in the last 25 years.” However, he was also of the opinion that employees in the past had mis-used the training programmes. They started using these programmes as an excuse for sight-seeing. But over the years the attitude had changed with “lower level staff being more enthusiastic about these trainings because they are not used to it.”

⁵ Times of India, 31st December 2011

The company recently set up training centers in cities G and H where regular trainings were held. Trainings were given as per the level of employees. Clerical, computer, technical trainings were given. According to senior executive engineer, "Regular 4 courses for lower category staff are organized for three days, four times in a month." People from outside are also called to give lectures. According to an employee although the trainings are compulsory on paper but "if work is more and the boss asks not to go, we do not go." He however, agreed that through trainings they came to know of various new things. As he said, "Otherwise things are very rigid here. They go on same way for years."

According to an employee there was nothing of the sort where employees could suggest new ideas. Most of the meetings were attended by the officers who were encouraged to suggest improvements. In this context he said, "Officer level people know better about rewards for new ideas and suggestions. I have not received any reward, nor have I made any suggestion." Another employee, too, gave a non-enthusiastic response with respect to suggestions for improvement given by them. The company had a hierarchical structure with things being very rigid. All decisions were taken at the management level. According to an employee, at times comments are given by employees regarding progress made. According to senior executive engineer, IT, "As we are a bureaucratic organization, everything has been written and laid down. So we just had to automate those, so that particular quality of data, better governing and better control is possible."

According to associate general manager, sub-divisional office, the company had off-late opened a site at head-office, 'My Nigam-My Suggestions' where employees were encouraged to send suggestions.

Internal / External Communication and Importance of a Learning Climate.

Lots of meetings were held on various issues and minutes of meeting prepared. These meetings were however restricted to the level of sub-divisional officers. A senior executive engineer said, "Once in a month meeting is held in the Superintendent's office where regular employees are

invited". This was countered by an employee, "Formal sessions between officers and lower level employees are not a rampant practice in the organization. Meetings with lower level employees is, only need-based, if the officers feel it is required for commercial, billing etc. We come to know about important decisions and matters through minutes of meetings. Only trainings are meant for lower level staff." Weekly, fortnightly progress is demanded from employees on the basis of minutes of meetings distributed in all offices.

The management at XY Power visit different utilities to get an idea about different initiatives taken by them. Technical consultants were also appointed to advise the utility on various initiatives.

The company deputed customer care advisors who met customers and pensioners. The company had started energy conservation programs wherein public was educated regarding less use of electricity. My Nigam-My Suggestions site also encouraged suggestions from the public. According to associate general manager, sub-divisional office, "We invite people from the city; listen to their problems and suggestions and also implement them. In case something is not possible we tell them in the meeting."

Benchmarking

Being a Government owned company, internal benchmarks were set by the company on the basis of standards set by State Regulatory Electricity Commission with respect to load shedding, hours within which power had to be restored. Each sub-divisional office had displayed the various regulatory standards for operation. In this context a senior executive engineer said, "The power sector is government owned and is a monopolistic market. Every company has an independent role, but normally the board approves of those schemes which are according to the guidelines laid down by Ministry of Power."

THE WAY AHEAD FOR XY POWER

The Chairman and Managing Director knew that the rankings had been done on the basis of absolute and relative improvement in operational and financial performance parameters. Financial performance parameters carried the maximum weightage of about 60%. Efficient regulatory practices were the second most important factor having 15% weightage. XY Power Ltd. inspite of taking various technological initiatives had fallen flat on the face with respect to performance parameters. It was lagging behind most of the other distribution utilities. It had not been able to tackle the gap between demand and supply of power. He also feared that based on the company's deteriorating financial performance the Government might plan to privatize it. He knew that the company had to make one last effort to revive itself. The task was to identify the gaps in the power distribution value chain which could be addressed through more advanced innovations. Also the strategy with respect to acquisition and deployment of technology had to be deliberated upon. Additionally he felt that as CEO he had failed to take note of various critical factors that promote an organizational culture conducive for successful implementation of strategy.

Case Review Questions

1. Identify the different types of innovations done at XY Power to turnaround the power distribution scenario. Categorize them into incremental and radical giving a logical explanation for the same.
2. Has XY Power followed the different stages of the innovation process? Comment.
3. Each innovation at XY Power is backed up by technology acquisition and deployment decisions which comprise its technology strategy. Identify the technology decisions taken by XY Power and the rationale for taking those decisions.
4. What has been the effect of the various innovation initiatives on XY Power's performance?
5. Comment on how various organizational factors have inhibited the various improvement initiatives at XY Power.

EXHIBIT 1 - ORGANIZATION CHART

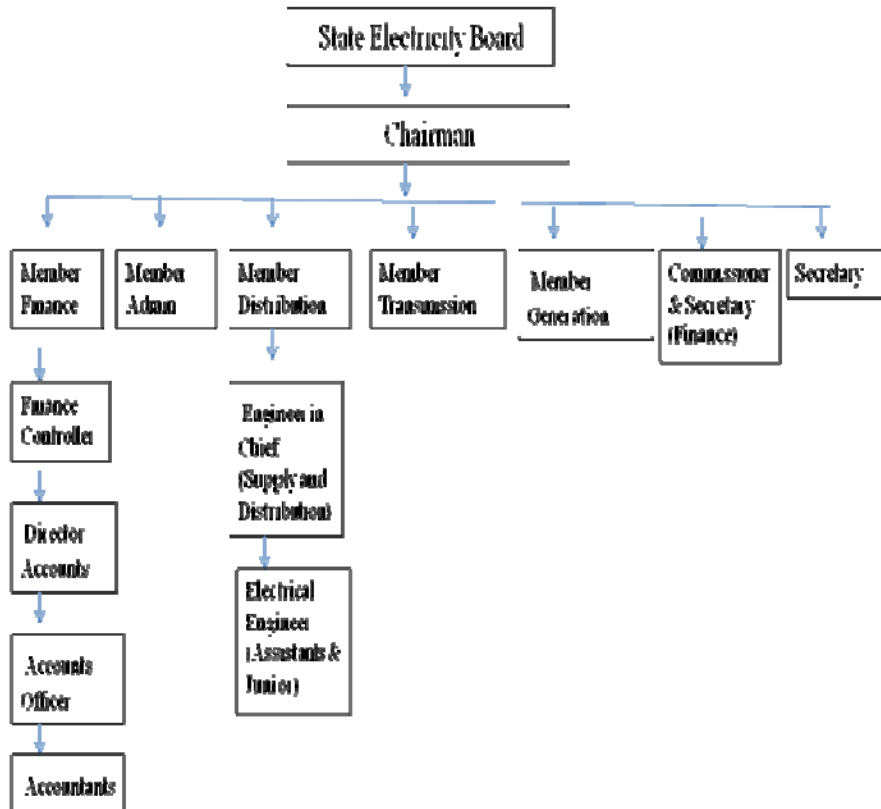


EXHIBIT 2- DETAILS OF OPERATIONAL AREA UNDER XY POWER

S.No.	Particulars	
1.	No. of districts	10
2.	No. of towns	50
3.	No. of villages	3348
4.	No. of 11 kV rural feeders	1050
5.	No. of 11 kV urban and mixed urban feeders	432
6.	No. of 11 kV Industrial/ Independent feeders	394
7.	No. of substation feeders	255
8.	Installed capacity of 33 kV substations	1824 MVA
9.	No. of distribution transformers installed	1,01,974
10.	Capacity of distribution transformers	6165 MVA
11.	Total no. of connections	20,24,254
12.	Total connected load	7,125 MW
13.	Peak Demand (FY 2008-09)	2326 MW

Source: Published data on company

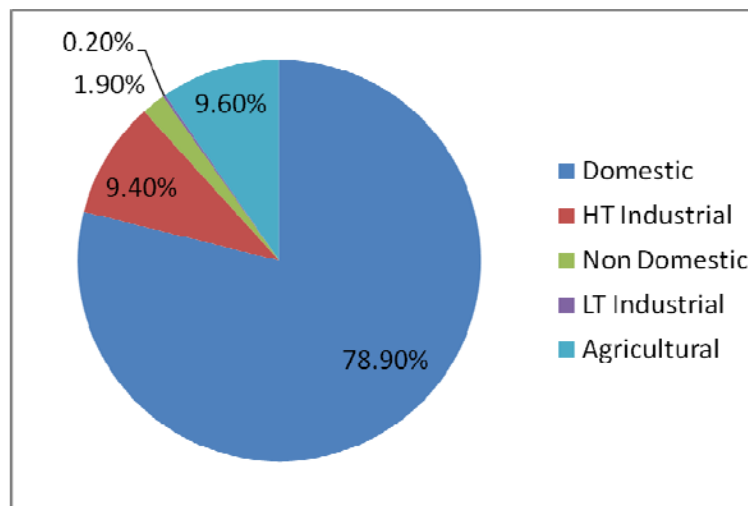
EXHIBIT 3 - MIX OF CONSUMERS UNDER XY POWER (as on March 2012)

EXHIBIT 4 - NUMBER OF CONNECTIONS OF XY POWER LTD. ENDING 01/2013

SI.No.	CATEGORY	NUMBER
	Low Transmission Connection	
1.	Domestic Supply	1926243
2.	Non Domestic Supply	227048
3.	Agriculture	
	Metered	157646
	Un metered	79728
4.	Street Light	771
5.	LT Public Water Works	9428
6.	LT Industrial	44003
	High Transmission Connections	
1.	HT Industrial	5769
2.	Bulk Supply	475
3.	Railway Traction	2
4.	HT Public Waterworks	46
5.	OTHERS	21000
	Total	2472159

EXHIBIT 5: LOAD MIX (in %)

	2006	2007	2008	2009	2010	2011	2012
Domestic	29.6	29.2	28.5	29.1	28.5	29.1	28
Non-Domestic	5.0	5.3	5.8	6.5	6.9	6.1	6.2
LT-Industrial	10.9	10.4	10.2	9.4	8.8	8.4	8.1
HT-Industrial	25.5	25.5	25.8	26	25.4	25.4	25.5
Agriculture	22	22.2	22.5	22.8	23.0	22.4	22.5
Others	7.1	7.4	7.2	6.1	7.1	7.7	8.0

EXHIBIT 6: HISTORICAL SALES MIX (in %)

	2006	2007	2008	2009	2010	2011	2012
Domestic	19.5	19.1	19.6	20.8	20.6	21.8	21.4
Non-Domestic	5.8	6.5	7.1	7.1	9.1	13.6	14.1
LT-Industrial	6.5	6.2	5.7	5.8	5.1	5.1	4.8
HT-Industrial	24.4	27.2	28.2	28.4	27.3	26.9	27.8
Agriculture	33.6	30.9	28.9	27.0	28.7	24.4	24.5
Others	10.2	10.2	10.5	10.8	9.2	8.3	7.5

Source : Published data on company

EXHIBIT 7 : TREND OF DISTRIBUTION LOSSES

FY	LOSSES (in %)
2000-01	32.2
2001-02	33.9
2002-03	35.0
2003-04	33.3
2004-05	32.7
2005-06	30.9
2006-07	29.65
2007-08	27.54
2008-09	25.19
2009-10	29.84
2010-11	27.11
2011-12	23.71

Source : Published data on company

Note: Transmission and distribution loss are the amounts that are not paid for by the users.

$T\&D\ Losses = (Energy\ Input\ to\ feeder\ (Kwh) - Billed\ Energy\ to\ Consumer(Kwh)) / Energy\ Input\ kwh \times 100$

EXHIBIT 8 : KEY OPERATIONAL AND FINANCIAL DATA OF XY POWER

	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12
Collection Efficiency (%)	89.4	92.1	95.4	94.5	93.8	95.2	96.1	102.2	100	100	100	100
AT&C loss levels (%)	39.4	39.1	38	37	36.9	34.3	32.4	25.9	24	24	-	24
P&L (After Tax) *							(102)	(285)	(266)	(779)	(792)	(1550)
EPS (On nominal value of Rs.1000 share)							(191.22)	(480.74)	(395.86)	(742.21)	(758.49)	(1335.12)

* In Crores

Source: Published data on company

EXHIBIT 9 : KEY OPERATIONAL AND FINANCIAL DATA OF STATE G DISCOM

	2008-09	2009-10	2010-11	2011-12
P&L (After Tax) *	108.83	385.04	311.30	931.30
EPS (Equity share of Rs. 10 each)	0.17	.09	.007	0.17

* In Lakhs

Source : Published data on company

EXHIBIT 10-KEY OPERATIONAL AND FINANCIAL DATA OF PRIVATE UTILITY

	On Takeover	2002 -03	2003- 04	2004 -05	2005- 06	2006- 07	2007- 08	2008 -09	2009- 10	2010- 11	2011-12
Billing Efficiency(%)	-	54	58	66	73	73	79	81	84.16	-	-
Collection Efficiency (%)	92.8	96	100	101	105	103	104	102	101.34	99.5	-
AT&C loss levels (%)	53.1	50.1	44.9	33.8	26.5	23.7	18.3	15.4	14.7	13.2	11.42
Operating Margin (%)	-	5	5	8	11	13	8	13	17	-	-
PAT (Rs. Cr.)	-	22.21	29.29	56.75	112.5	186.79	99.5	171.47	350.7*	258.18*	338.65*
EPS (Rs.)	-	0.29	0.41	0.89	2.04	3.37	1.8	3.11	6.35	4.68	6.13
ROCE (%)	-	3	4	8	12	13	11	13	11	7	5
ROE (%)	-	6	8	15	24	31	37	19	27	17	13

*Includes income recoverable from future profits

- The tariffs notified by the regulatory body have been delayed over the years and have been inadequate to cover the costs of the utilities

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