

CASE STUDY



CESC has been able to open up new channels of communication for consumers after the deployment of Red Hat Enterprise Linux.

Security, redundancy and scalability of the Red Hat Solution is important to maintain the large database of consumers.

CESC Limited, a part of the RPG Group, is a hundred-year-old company, generating and distributing electricity in and around Kolkata, as the sole service provider. Starting with a licensed area of 14.44 sq. km. and serving a few hundred consumers 100 years back, CESC today operates over 567 sq. km., serving 2.1 million consumers. It distributes 1300 MW of electricity, and generates on its own around 1,000 MW from its 4 generating stations. The balance of the requirements is met by import of power from WBSEB in terms of a Power Supply Agreement. CESC is a vertically integrated power utility having the functions of Generation, Transmission, Distribution and Sale of Electricity in its fold. Its audited turnover for 2005-06 is Rs. 2590 crores with PBT, PAT and EPS figures being Rs. 204 crores, Rs. 184 crores, and Rs. 22.65 respectively.

CESC Ltd.

Number of employees	: Over 10,000
Years in business	: Above 100 years
Number of countries in which the company conducts business	: One
Total company revenue for the latest year reported	: Above Rs. 2500 crores
Company product	: Thermal Power
Company business goal	: Generation, Distribution and Sale of Electricity to its consumers
Factors that led to the success of the company	: Operational Efficiency and Cost Competitiveness

THE BUSINESS ENVIRONMENT

For decades, CESC has been generating, distributing and selling electricity to a large consumer base in the twin cities of Kolkata and Howrah. The business challenges have always centered around providing quality power supply and efficient services to consumers through operational excellence and by focusing on core competencies. CESC has been one of the pioneers of IT in the utility services industry in India. It had already IT-enabled key business areas like Billing, GIS, Contact Center operations, Generation, Commercial, etc. some years back.

FAST FACTS

Industry: Power utility

Challenge:

- A secure, reliable and cost-effective platform to run mission critical enterprise applications.
- Continued efforts to be innovative in upgrading the quality of consumer service.
- To maintain and enhance the quality of the channels of communication with consumers.

Solution:

Platform: Red Hat Enterprise Linux

Software: Intel Pentium servers

Benefits:

- In customer services, monitoring of Call Closure Time has resulted in prompt resolution of supply or commercial queries.
- Power Loss Audit resulting in logical segregation into revenue districts so as to measure the difference between the supplied units versus billed units and initiate corrective measures.
- Streamlined Billing and Collection leading to immediate reconciliation in Sales Accounting and Financial Accounting data.
- Improvement in productivity.
- Enhanced Customer Intimacy leading to greater Customer Loyalty.

CHALLENGES

The company has different Regional Reporting Centers scattered over an area of 567 sq. km. Business process integration and application management over such a large geographical area was becoming quite cumbersome. The total system of Call Capturing, feedback for calls generated, manual intervention in restoration details in a distributed set up were making it difficult for consumers to track their complaints in a single window.

Says Mr. Subrato Das, CIO, CESC Ltd. *“CESC has been using IT in different spheres of activities for long with the intent to achieve operational excellence and strengthen core competencies. Now we are endeavoring to integrate all the legacy applications. The introduction of ERP software is to suitably integrate all isolated legacy systems and applications so that ultimately we can enhance customer services. From the organizational aspect, this became imperative in order to offer better value to our customers. It must be added that we were facing problems in tracking calls through their entire life cycles and in generating relevant life cycle reports. The Company already takes all possible steps for quick restoration of faults. With that objective, a round-the-clock computerized contact centre has been set up to receive, distribute and effectively resolve consumer queries/complaints centrally for faster action. The intent was to make the organization more customer responsive and customer friendly in the long run.”*

Key Business Driver identified by CEO

Before introduction of unified 1912 based Contact Centre Solution, Consumer based upon his geographical demography used to report for:

- **Supply related problem:** nearest Reporting Centre around 45;
- **New Application related query:** nearest Distribution District Office 10;
- **Commercial queries:** nearest Commercial Regional Office 6

The subset of main database was available in the distributed set up causing delay in processing, responding and closing the queries of consumers and s/he had to attend separate counters for different type of queries related to service connection.

Whenever a consumer faces power supply related problems now, s/he is to call up a unique 4 digit telephone number and the call lands at a central customer call handling center. This facility is manned with around 60 odd agents and runs round the clock. Depending upon the nature and location of the problem, the calls are docketed with suitable classifications and priority. The software intelligently routes the calls to the relevant district depots where the field service personnel takes the call and dispatches technicians to attend the problem location. In addition to VHF enabled maintenance vans, all the technicians are equipped with CUG GSM phones and the district depots get timely feedback on the status of the call maintenance. Such status information is fed

into the system continuously. At any given point in time, the user of the system has updated information on the overall scenario and also gets micro information on a specific call. The system also has data bolt-on with the EHT distribution network to flag off major systems outages and thus avoids routing of redundant calls to the district depots. Once a fault call is closed at the district depots, the agents at the central call handling facility calls up the consumer and gets appropriate feedback from them. The periodic MIS reports generated by the system, in addition to providing macro view on the overall performance, provide benchmarking with the performance standard as imposed by the regulating authority.

Clearly, the challenge was to centralize the contact management system already in place and aim to provide efficient service to the consumers within the specified framework defined by the regulators. Moreover, a secure, reliable and cost-effective interconnecting platform was needed to run mission critical applications like ERP, collaborative workflow, numerous Intranet-based operational applications and distribute the updates of virus signature files. The applications and the virus signature distribution framework had to support around 1600 nodes spread across CESCNET MAN.

Das further added that the consumer database had to provide CESC with very fast responses and hold the past 36 months consumption and payment details of 2.1 million customers. The non-stop availability of all the services was of paramount importance.

SOLUTION

This called for the formation of a core team to study the present Windows-based system in detail, the anomalies thereof and suggest a possible smooth migration path. Critical issues remained availability, scalability, stability and performance. The core functional committee comprised the CIO, GM Operations, DGMs of different operational departments, managers of mains departments, technicians responsible for power distribution and maintenance, contact center operations, the CIS team and Red Hat consultants.

Elucidates Das, *“Once the team decided to adopt Linux and Open Source software, they reviewed industry standard implementation methods and procedures for equivalent scenario. We had to consider factors like manageability, scalability, interoperability, reliability, usability, functionality, support services and cost effectiveness. Subsequently, based on benchmark results, we decided on the RHEL Cluster environment for hosting our Contact Center applications. The clinching factors were security, redundancy and scalability of the Red Hat solution.”*

The criticality of the services prompted the designers to devise redundancy in the implementation framework. This posed a major challenge to the in-house team specially because they were not initiated in the LINUX environment and were learning things

from scratch. The challenges faced by the designers of the system were to ensure continuous availability (24x7) and seamless disaster recovery procedures. The services being so vital for the organization and the nodes to the network being so distributed across the 567 sq. km. areas, there is a definite possibility that the fiber optic fault might take some of the nodal centers out of the circuit. To remain customer-intimate all the times, CESC could ill afford such a luxury. While the network design was done with this eventuality in mind, CESC also introduced ISDN back-up connectivity options. When these connections are activated, the suitable procedures are developed so that the gateway addresses of the clients so connected are suitably modified to ensure seamless operation.

The implemented solution consists of deployment of the Application over a fully configured two node Active/ Active clustered environment deployed on RHEL 3.0 as primary infrastructure. One node hosts the MySQL database server and the other node hosts the FTP server and the Application developed in PHP is deployed over Apache web server. In case of failure of one cluster member node, the configured services will be restarted on the live cluster member node as a seamless transition. Off site data backup is implemented through My SQL replication on another server at a different location.

The solution is also used to handle billing related complaints from the consumers. It further deals with the queries of prospective consumers regarding the status of their applications and the pending complaints in getting a new connection. The system has another module to capture pilferage information from citizens and routes that information to the concerned operating units for necessary action.

BENEFITS

Says Das, "We had opted for Red Hat because of the user-friendly features and easy-to-get support services. Over a period of time, we gained significant benefits. On a macro level, the Red Hat Cluster is a fail-safe, 24/7 solution. Primarily, even as we have been making investments in the relevant technologies, for the customers that is just incidental to the benefits that they get from much better services and increased channels of communication and information. We are running a system which is now the single interface with the consumer and which is up 24/7 without any problems till date. The implemented solution is scalable in terms of increase in call load and data load. We look at two types of benefits: direct and indirect. However, to measure customer satisfaction and operational efficiency, we have developed our own metrics, called Return on Value (ROV) metrics. After the implementation of the IT initiative, we have recorded increase in revenue, improvement in quality of service, reduction in various lead times, improvement in productivity and enhanced customer intimacy, leading to customer loyalty."

Red Hat also provided a comprehensive solution to suit CESC's demanding requirements for seamless migration from the previous environment, backed up with an Annual Support Contract offering for maintenance of the new environment.

The CRM software developed in-house harnesses the strength of the open source software. On a macro level, the enterprise as a whole benefitted from the deployment in terms of:

- Low implementation cost for hardware, middleware and software.
- Ensuring high availability of all the services.

Attesting to the importance of IT, Das adds, "The imperative need to be cost-effective in the market and focus on customer delight together makes aligning the role of IT with business objectives a key success factor for any business today. I strongly feel the true value of IT can be achieved by making IT an enterprise wide activity and onus of the IT deployment lie jointly and importantly with the CIO and other CXOs where the CIO plays a role of a facilitator and Technology Manager. The blending of IT into business should lead to a state of thinking that helps build 'business-smart IT organizations'. CEOs need to ensure that CIOs are given equal importance in organizational structure like CXOs of business functions in corporate hierarchy; only then can the role of IT in business strategy be thought of in the real sense, otherwise IT will continue to remain a 'technology-driven staff function' forever and not a 'business-driven line activity' in India Inc."

FUTURE PLANS

The strategic alignment of inter-related technology offerings with the key business drivers of a Power Utility player like CESC would produce a synergetic effect in the long run. Expectedly, this will change the entire ecosystem of the entire utility business and the way it is being operated today. The ensuing 'open access' under The Electricity Act 2003 will lead to stiff competition in the utility space in India and CESC can ill afford to lose focus in reinforcing the entry barrier by extending sustainable and continuous customer-intimate business systems offerings suitably complemented with prompt service supports in the brick and mortar segment in the last mile.

Adds Das, "After completing the first wave in driving greater synergy towards achieving a balance between local operational optima and global enterprise optima with introduction of ERP and other mission critical applications covering 'meter to cash', 'indent to pay', 'asset maintenance and tracking', 'GIS and SCADA', 'finance and control' and 'query to closure', CESC shall now be increasingly focusing on deriving a 'single view' of the customers."

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Red Hat India Pvt. Ltd.,

1st floor, C-Wing, Fortune 2000,

Bandra Kurla Complex, Bandra (East), Mumbai 400051.

Email: sales-in@redhat.com or marketing-in@redhat.com

www.in.redhat.com

