

Efficient Data Management

IT-power synergy to improve productivity

Multiple processes required to query for reporting

Scheduling Management System	Shutdown & Outage Management System	ABC Messaging System	Daily Operational Reporting System
Metering & Settlement System	ABT Pool Account Administration System	Load Curve Data Entry System	SCADA DATA Acquisition
Short term Open Access System	Power Exchange transactions	RLDC Fee & Charges Billing & Collection	Transmission Pricing

Information technology (IT) has the potential to contribute significantly in the areas of business process automation; data, revenue and commercial, and consumer relationship management; aggregate technical and commercial loss reduction; and data security. As a result, there has been a move towards the increased use of IT and IT-enabled services among utilities.

Quite a few power and distribution utilities have established data centres to assist in their functioning process. A data centre is a centralised repository, physical or virtual, for data storage, management and dissemination. It is generally organised around a particular body of knowledge or a business stream. There are four different categories of data centres:

BSES

BSES has a Tier 3 data centre with more than 99.98 per cent availability, standard design and equipment across the group. The company uses multiple independent power distribution paths that serve IT equipment compatible with the topology of the site's architecture. The network architecture has a redundant core, distribution layers, firewalls, switches and routers. Business continuity plans are developed and tested at the centre, and a disaster recovery site is under planning.

All mission-critical applications including billing and supervisory control and data acquisition are in the cluster mode where there are primary and secondary servers. Port-level access policies for applications and server access-based policies are

also defined and monitored. Periodic back-ups are scheduled, regular recovery drills are performed and the data on back-up tapes is made available both on- and off-site.

Going forward, the company plans to implement a number of IT modules. It plans to establish a new Tier 3 data centre in east Delhi. The two data centres are expected to act as a back-up for each other. Some of the features planned to be implemented include security access control, intelligent fire alarm and suppression systems; precision of air-conditioning in the server room; sensitive smoke detection, automatic water leak detection, and device management systems.

POSCO

Data centres owned by the Power System Operation Corporation (POSCO) are located in Delhi, Bangalore, Kolkata, Mumbai and Shillong. These data centres continuously manage real time as well as stored data, hence ensuring uninterrupted flow of power across regions. Data centres maintained by POSCO are of Tier 4 type. The need for data processing has arisen as the number of processes has increased and the variables affecting the discoms have also multiplied. As a result, time required to retrieve data has also increased. POSCO is planning to deploy a national level data warehouse and data centre.

Conclusion

IT penetration is quite low, and not many IT companies have the requisite sector experience. Issues such as space availability, costs, staffing, remote management, maintenance and security, data loss and IT failure continue to impede progress. There is a need to develop a synergy between IT and the power sector where emerging technologies can play a defining role in improving business efficiency and productivity. ■

Based on presentations by

Anish Kalucha, Assistant Vice-President, IT, BSES; and P.K. Agarwal, Deputy General Manager, POSCO, at a recent Power Line conference.

Data centre categories

Tier	Description	Availability (%)
Tier 1	Non-redundant capacity components (single uplink and servers)	99.671
Tier 2	Tier 1 + redundant capacity components	99.741
Tier 3	Tier 1 + Tier 2 + dual-powered equipment and multiple uplinks	99.982
Tier 4	Tier 1 + Tier 2 + Tier 3 + all components are fully fault-tolerant including uplinks, storage, chillers, heating, ventilation, air-conditioning systems and servers. Everything is dual-powered.	99.995