

QUALITY OF SERVICE AND PERFORMANCE ISSUES IN INDIA'S POWER SECTOR

7.1 INTRODUCTION

This chapter attempts to provide a spectrum of power sector Quality of Service and performance issues in India's power sector its objectives, need and process. An attempt has been made to study the international and national experiences; process with respect to Quality of Service as QoS constitutes one of the important performance parameters of a utility, which, besides consumer satisfaction, has a direct bearing on the safety and performance of plant and equipment. In the electricity supply industry, quality is particularly important: customers pay not only for the physical product which they consume, but also for the security of uninterrupted power supply which they expect to receive. International and national experiences based on the information available in public domain and the analysis of the regulations regarding the QoS process and its need has been consolidated in this chapter mainly from the consumer point of view for a few states.

Quality demands for electricity have risen and there are industrial processes that would suffer greatly due to disruptions. Besides the requirement needed by the industry, also the level of service in which the residential customers have accustomed has risen. This has forced energy sector regulators to consider quality aspects when deciding proper regulatory measures for electricity distribution. Quality of Service ensures that the development of the networks is focused on the most rational targets from social-economic point of view.

Quality of Service gained prominence among the policy makers, competitive utilities, consumers and regulators lately all around the world. It gained importance in parallel with the reforms process. As the liberalization process of energy markets has changed the need to regulate electricity transmission and distribution that have remained as natural monopolies, reliability became a major concern for regulators in the initial stages and finally Quality

of Service became an imminent need for regulation, as quality of service is a major concern for consumers. Price and Profit regulation without focus on QoS turned futile initially, in meeting the end purpose. Hence, apart from reliability QoS gained prominence in the early 90s in countries which are undergoing reforms.

UK pioneered QoS regulations by being the first country to ensure quality of service through price regulation while in USA it took different forms in different states through both price and profit regulation. South Africa, being a developing country and facing problems similar to that of Indian Power Sector, shows the path for QoS regulation. The study of QoS regulations of these countries provide valuable lessons for countries under different development stages and electricity markets under different regulatory systems.

7.2 BACKGROUND

Quality of Service (QoS) can be defined as 'the end result of Utilities planning, designing of network, operation and service management, which determines the degree of satisfaction of the consumer. Technically, quality depends on the following outputs: capacity, voltage support, frequency support, off-peak load, spinning reserve, load following capability, black start capability, dual fuel capability, and local load. It consists mainly of two aspects: one relates to technical standards and operation of power systems and the other relates to support and responsiveness to consumers' needs.

QoS thus constitutes one of the important performance parameters of a utility, which besides consumer satisfaction, has a direct bearing on the safety and performance of plant and equipment. Frequent power cuts, brown outs, and black-outs; large fluctuations in the voltage and frequency of power supply; a large number of consumer complaints relating to metering and billing; erratic supplies; mushrooming of captive power plants; etc. provide ample testimony to this. The poor quality of service is also proving to be an impediment to the use of energy-efficient appliances.

Economic regulation makes sure that the affordability constraint of the monopoly services is met. However, this is usually not enough, but also

technical regulation is needed to ensure the acceptable quality of the monopoly services, not only on average, but also from the point of view of each individual customer. Technical regulations may address issues such as the numbers and durations of planned and unplanned interruptions, and the voltage characteristics.

7.3 INTERNATIONAL EXPERIENCES: QUALITY OF SERVICE REGULATIONS

7.3.1 UK Experience

In UK QoS standards in the electricity sector were first introduced in July 1991, and were successively revised and tightened in April and July 1993, April 1995, April and July 1998, and April 2000. The main purpose of setting standards is to set a common framework for customer service by the companies. This is intended to ensure a minimum level of service to all consumers and to encourage companies to aim for a higher level of performance. The PESs (public electricity suppliers) are subject to standards of performance in supplying electricity to customers. OFGEM (Office of the Gas and Electricity Market), sets them after consultations with companies, the electricity consumers' committees, and other customer representatives.

The standards set by the regulator are of two types:

- a. Guaranteed standards at service levels that must be met in each individual case, failing which the companies are required to compensate the customer.
- b. Overall performance standards for utilities covering areas of service, where whilst it is not feasible to give individual guarantees, it is appropriate to assure customers of the predetermined minimum levels of service. The overall standards set the minimum levels of performance, which PESs (public electricity suppliers) are required to achieve over a 12-month period in specific service. The guaranteed standards cover 11 areas of service, and the overall standards cover 8 areas of service. The 11 areas of guaranteed services are (1) respond to failure of a supplier's fuse, (2) restore electricity supplies after faults, (3) provide supply and meter, (4) estimate charges, (5) notice of supply interruptions, (6) investigate voltage

complaints, (7) respond to meter problems, (8) respond to customer queries about charges and payment, (9) make and keep appointments, (10) notify customers of payments owed under the standard, and (11) respond to prepayment meter faults .

These standards encourage companies to achieve higher levels of performance. In fact, the QoS provided by electricity services was very high even before the privatization (in 1989), and has been further enhanced since. In fact, in the UK, standards were initially set to reflect service standards as prevailing prior to 1989. Since then, the regulator has expanded the list and raised the QoS to a higher level. In the majority of cases, companies equalled or improved on their performance in 1999/00 compared with that in 1998/99, and most either met the standards set or came within one percentage point of meeting them.

In the UK, the regulator also obtains reports on the transmission and distribution system performance, which outlines the reliability of such networks. These reports show the trends in security (supply interruptions per 100 connected customers) and availability (minutes lost per connected customer). The distribution companies are also required to report on particular aspects of the quality of service to the regulator for example, companies are required to set targets for network performance indices: some companies are aiming at and reducing the overall customer-minutes lost. The companies' service obligations are set out in their codes of practice.

7.3.2 USA

In the USA, some states (California, Massachusetts, and New York) have restructured the electricity industry, while others are continuing with their earlier structure. The states that have restructured are now shifting towards a performance-based rate-making process with the ultimate aim of reducing retail supply cost. All states have focused on consumer services and safeguarding their interests in the process of restructuring.

Massachusetts

In Massachusetts, the Electricity Restructuring Act passed in 1997 authorizes the DTE (Department of Telecommunications and Energy) to establish PBR (performance-based rates) for each distribution company, and directs the DTE to establish QoS standards for a variety of service quality categories. In addition, the Act authorizes the DTE to levy a penalty against any distribution company that fails to meet the QoS standards of up to 2% of the distribution service revenues compare with the last year. While the DTE has approved a number of QoS standards in the context of electricity restructuring and distribution companies mergers, it has opened a generic proceeding, where it is conducting a comprehensive investigation of QoS standards. The guidelines set QoS standards in five categories: (1) customer service and billing performance, which includes three measures: telephone calls answered within a specified time, service appointments met on the same day as requested, and percentage of on-cycle meter reads; (2) customer satisfaction performance, which will be based on complaint statistics kept by the DTE; (3) staffing level benchmarks (4) safety performance which will be based on the lost work-time accident rate, and (5) reliability, which will be based on the system average interruption duration index.

New York

Electric service standards were developed in response to a 1989 department policy initiative to establish standards for electric, telephone, gas, and water service. All the standards were set after consulting with the major electric utilities and several other interested parties in 1991 and changes to these standards adopted in 1995 and 1997.

In 1991, the Commission adopted two indices, namely (1) SAIFI (System Average Interruption Frequency Index) and (2) CAIDI (Customer Average Interruption Duration Index) to measure the frequency and duration of service interruptions in each operating area of each major New York State electricity utility and identifying the worst performing circuits in each operating area. The standard, which was adopted by the Commission, which each company

should take measures necessary for each of its operating areas to meet a threshold minimum level of adequate service and should strive to attain a better objective level of electric service. Also, utilities are required to submit the annual performance report to the Commission by the end of March every year, covering the areas envisaged in the orders.

7.3.3 South Africa

The QoS rendered by electricity distributors in South Africa was first addressed in 1997 when the NER (National Electricity Regulatory) prepared a set of standards for quality of service. The standards for quality of service include voltage, frequency, and fluctuation. The standard on Quality of Service set by the NER has two categories: (1) Minimum standards, used as the criteria for licence renewal and (2) Reporting guidelines. Utilities are required to provide the NER with information under the guidelines, which broadly cover areas such as credit metering, network faults, planned interruptions, and non-compliance with quality of service standards, recognizing the existence of varying degrees of capacity among electricity distributors, the NER had permitted for phase wise implementation of QoS standards. At the same time, the NER made it mandatory for all distributors to install equipment to measure the standards on a consistent basis and to ensure their proper functioning.

7.4 INDIAN EXPERIENCE ON QUALITY OF SERVICE AND REGULATIONS

The power sector reform programmes in India have taken note of the above and the reform acts include mandates for promoting QoS. The Indian experience in this context is as follows:

- The Indian Electricity Rules (1956) does give a few power supply quality indices and some utilities have come out with citizens' charters stating quality and service commitments to consumers. Many utilities have consumer grievance handling procedures and the some have the practice of holding open consumer courts.
- Comprehensive regulations on Standards of Performance (SoP) for distribution utilities have been prepared from 1998 by some state ERC (Electricity Regulatory Commission). It covers many aspects of quality of

service and subsequent to the Electricity Act, many ERCs have prepared regulations on Consumer Grievance Redressal Forum (GRF) and Ombudsman also. These regulations comprehensively cover consumer grievance handling procedure, supply quality and service indicators, performance targets, benchmarks and compensation aspects of distribution utilities.

The legislation in this regard is as follows:

- a. Section 15 of the ERC (Electricity Regulatory Commission) Act 1998 enjoins upon the central electricity regulator to seek advice from the central advisory committee on 'matters relating to quality, continuity, and extent 'of service provided by the licensee energy supply and overall standards of performance by utilities'.
- b. Section 22(2) of the Act requires the State Regulatory Commissions to set standards for the electricity industry in the state, including standards relating to quality, continuity, and reliability of service.

Orissa, Haryana, Andhra Pradesh, Karnataka, Uttar Pradesh and Rajasthan, which have legislated their own reform acts have also included QoS promotion as a part of the functions of the Regulatory Commission. The Commission is mandated to prescribe appropriate regulations in this regard.

The Final Report on the Electricity Bill, 2000, has also made detailed and explicit provisions towards QoS. Some of the relevant provisions are reproduced in Annexure 2. The tasks before regulators in the context of discharging the above mentioned functions would broadly include:

- Identifying QoS indicators and setting standards of performance.
- Establishing an effective mechanism for monitoring.
- QoS compliance ensuring suitable enforcement mechanisms

One of the features of the Indian power sector reforms is the increased attention to the distribution sector. Systems and procedures for monitoring Quality of Service (QoS) of utilities have been finalized by State Electricity Regulatory Commissions, especially subsequent to the Electricity Act 2003.

7.4.1 QoS Indicators

QoS indicators comprise a mix of technical and service performance parameters. Typically, they can include variations in power supply parameters (voltage, frequency), number, deviation spread and frequency of supply interruptions, complaints relating to metering and billing, response to consumers, time taken to provide new connections, etc. It is important that these to be chosen with regard to customer perceptions, practicability of data collection, and the current level of power development in the state. Also, the time and physical dimensions should be meaningful to all stakeholders where the indicators are not readily quantifiable (e.g. customer perception of the utility staff's behavior or skills in handling complaints), these should be graded on a normative basis.

QoS Standards of Performance

Quality of Service is generally monitored through standards, standards can be Overall or Guaranteed Standards of Performance.

- *Guaranteed Standards of Performance* set the minimum service level which must be met in each individual case. If the company does not meet these standards, compensation at fixed rates must be paid. Guaranteed standards of Performance include:
 - a. Service covered (e.g. estimating charges)
 - b. Required performance level - usually with a response time (e.g. certain number of working days)
 - c. Penalty payment to be paid to a customer who fails to receive this level of service (e.g. specific amount of rupees)
- *Overall Standards of Performance* cover areas of service where it may not be possible to give individual guarantees but where companies are expected to deliver predetermined levels of service. Overall standards of performance do not carry penalty payments but are used for monitoring purposes and for promoting quality of service. Overall standards of Performance are defined as followed:
 - a. Service covered (e.g. connecting new customers to the grid).
 - b. Minimum performance level to be achieved over a defined period of time.

- *Monitoring of compliance* covers that the regulator could monitor the service standards directly or indirectly. A direct monitoring system would entail staffing and open access to the licensee network and service management system. If the regulator opts for an indirect monitoring system (because of some inherent problems in the direct system), the regulator can mandate the service provider to collect the information on standards set by him and submit the information to the commission periodically, which could be evaluated against benchmarks. This monitoring system is incomplete until the consumers' feedback is obtained because the above approach will provide information only about the quantifiable standards. The regulator can achieve this by periodic interactions' with consumer groups to understand consumer satisfaction.
- *Enforcement mechanism* covers the primary requirements of enforcing QoS by the establishment of an efficient grievance redressal mechanism, which is convenient to the consumer, acceptable to the utility, and at the same time does not overburden the regulatory commission. A hierarchical system is generally adopted for the purpose. It is preferred that the majority of the complaints are attended to at the first level contact between the distribution company and the consumer. The complaints will then go through the hierarchy; If they are not resolved satisfactorily. They will reach to the Regulatory Commission, which will deal with the complaints at two levels in order to avoid unnecessary and frivolous litigation. The first step by the commission can be to redress the complaints informally through consultations with all parties. Failing this, a formal proceeding may be taken up by setting up consumer relation cells in the utility at different levels and a consumer relations unit in the commission will be necessary to implement this grievance redressal procedure.

In this context the Commission should primarily be concerned with complaints affecting a large number of consumers, of a repetitive nature. It could, at the same time, have the discretion to select the kind of complaints it would monitor. Regarding the issue of penalty it is clear that in a scenario of limited consumer choice/competition, imposition of penalties for violation of pre-defined standards is the only pragmatic way to promote QoS. But there is a

school of thought who considers that it would not be practicable and reasonable to penalize the utility right now for non-compliance of standards because of the rundown condition of the installations and the time required to improve them. Also, in the absence of adequate data, there is a risk of setting unrealistic targets, which in turn may make the utility bankrupt. Regulators have to make balanced decisions, keeping in view the interests and concerns of the consumers, utility, and prospective investors.

7.4.2 Experiences of States

While analyzing the experiences of states, as of today, Andhra Pradesh, Orissa, Haryana, and Karnataka have come up with regulations relating to QoS. Generally, the specific areas covered under the performance standards are (1) restoration of power supply, (2) quality of power supply, (3) period of scheduled outages, (4) meter-related complaints, (5) applications for new connections, and (6) complaints on consumer's bills.

Orissa

In Orissa, the electricity regulator through its Distribution (conditions of supply) Code, 1998, has set the service standards to be provided to consumers by a distribution utility. Provisions for imposition of penalties for violations back up these standards, and the penalties prescribed are very high. There are also procedures for grievance redressal by the utility and by the OERC (Orissa Electricity Regulatory Commission). Similarly, overall performance standards have also been set for distribution and retail supply; for example, distribution companies have to bring down voltage fluctuations to within declared limits within 15 working days in 60% of the cases.

But there are areas where further refinement is required. Firstly, at present a consumer in Orissa has to approach various levels within a utility, which makes the process of grievance redressal time consuming and cumbersome. Second, there is no provision to regularly monitoring whether time limits are adhered to. Third, a consumer cannot get automatic compensation from a distribution licensee for failure to adhere to the standards of service set except in the case of billing errors where interest charged may be 'waived. Thus,

even in Orissa, where the OERC has pioneered reforms in the electricity sector; there is some way to go before the interests of consumers are guaranteed to the extent that they are in the UK.

Karnataka

The state commission through its regulation (consumer's right to information), 2000, mandates the licensee to provide the consumers their rights regarding disconnection of power supply, entry to premises, reclassification of consumers, notice of outages. In May 2000, the KERC (Karnataka Electricity Regulatory Commission) issued a practice direction paper on consumer grievance handling procedures, clearly spelling out the manner in which grievances before the Commission would be dealt . The Commission has also set a time limit of two months for providing a final decision on the grievance from the date of receipt in any event by the grievance-handling officer.

The KERC in its supply license has specified that the licensee shall establish, with prior approval of the Commission, a procedure for handling consumer complaints. At present, KPTCL (Karnataka Power Transmission Corporation Ltd) as the licensee has not established a comprehensive consumer complaint handling procedure, but a discussion paper relating to distribution and retail supply that is to be adopted by the KPTCL has been brought out. The paper specifies the maximum time limit for rendering services to the consumer, a primary responsibility centre where complaints have to be lodged first, and the authority next in the hierarchy depending on the nature of complaint. Consumers are advised to approach the Commission in accordance with the procedure described in this document if they are not satisfied with the action taken by the licensee.

Andhra Pradesh

The Andhra Pradesh Electricity Regulatory Commission through its regulation number 6 dated 19 August 2000, has set standards of performance for electricity supply to consumers, and wide regulation no. 7 has spelt out the consumers' right to information regarding disconnection of supply, shortage, etc. These regulations mandate the licensee to adhere to prescribed

standards and to provide consumers with Quality of service and performance issues in India's power sector. The set of performance standards cover the following areas: (1) the restoration of supply, (2) quality of service (3) outages, (4) complaints on meters, (5) new connections, and (6) complaints on consumer bills. All these standards set the upper limit on time taken by the licensee to respond to complaints. The regulation does not talk about any complaint handling unit or procedure specifically.

In distribution business regulation, there are three common ways to take power quality into account: (1) to include power quality adjustments in price or revenue cap formulas; (2) to include power quality in efficiency benchmarking; and (3) to evaluate power quality outside of price regulation for instance from a technical point view.

Delhi

In Delhi in terms of the Regulations, the distribution company-wise CGRFs were set up in August, 2004. The Appellate Institution of the Electricity Ombudsman was also set up in August, 2004. The Institutions of CGRFs and the Electricity Ombudsman have completed more than 4 years of existence. Each year with the admission of the Annual Revenue Requirements (ARR) petitions of the Discoms, the Commission gives wide publicity among stakeholders and nominates some of the officers of the Commission for interaction with the stakeholders for enabling them to comprehend the content/import of the ARR petitions. This helps in the stakeholders contributing meaningfully while offering their comments against the ARR petitions and also during the subsequent public hearings.

On the initiative of the Commission, the Govt. of NCT of Delhi have recently notified the Electricity Consumers Advocacy Committee (ECAC), rendering a platform to the consumers for protecting their interests before DERC, the Appellate Tribunal for Electricity and other Courts of the land as a step to improve the quality of service in Delhi. The no. of Complaints Received by the CGRFs of the three Discoms has increased from 2464 in FYY06 to 4846 in FY 08 (upto Jan, 08).

Interruption in power supply due to scheduled outages, other than the load-shedding, has to be notified in advance and shall not exceed twelve hours in a day and in each such event, the Licensee has to ensure that the supply is restored by 6:00PM. The Licensee shall achieve both of these standards of performance in at least 95% of the cases.

In Delhi the reliability/outage indices are prescribed by the Institute of Electrical and Electronics Engineers (IEEE) Standard 1366 of 1998. The Licensee shall compute and report the value of these indices from 2005-06 onwards:

- **System Average Interruption Frequency Index (SAIFI):** The Licensee shall calculate the value as per the formula and methodology specified below.
- **System Average Interruption Duration Index (SAIDI):** The Licensee shall calculate the value as per the formula and methodology specified below.
- **Momentary Average Interruption Frequency Index (MAIFI):** The Licensee shall calculate the value as per the formula and methodology specified below.

7.5 INITIATIVES BY THE GOVERNMENT ON QoS

In Indian context Government has adopted some initiatives to promote quality service to the end consumers by some initiatives like:

a. Accelerated Power Development and Reforms Programme (APDRP)

Government of India approved the Accelerated Power Development Reform Programme (APDRP) in 2002-03 under which additional central assistance was provided to the states for strengthening and up gradation of sub-transmission and distribution systems and contains quality initiatives such as:

1. Improvement in quality of service and reliability of power supply by way of reduction in outages.
2. Improvement in consumer satisfaction

The important performance parameters of a utility have direct bearing on safety and performance of plant and equipment, besides ensuring consumer satisfaction. The end result of utilities planning, designing of network, operation and service management determines the degree of satisfaction of the consumer and it consists, mainly, of two aspects; one related to technical standards and operation of power system, and the other to support and responsiveness to consumer needs.

b. ERC (Electricity Regulatory Commission) Act 1998 have duly taken note of the above and the Reform Acts include mandates for promoting Quality of Service (QoS) and Performance. For example:

- Section 15 of the ERC (Electricity Regulatory Commission) Act 1998 enjoins upon the central electricity regulator to seek advice from the central advisory committee on "matters relating to quality, continuity, and extent of service provided by the license energy supply and overall standards of performance by utilities".
- Section 22(2) of the Act requires the State Regulatory Commissions to set standards for the electricity industry in the State including standards relating to quality, continuity and reliability of service.
- Section 25 mandates the State Advisory Committee to advise the commission on "protection of consumer interest and energy supply and overall standards of performance by utilities" and States like Orissa, Haryana, Andhra Pradesh, Karnataka, Uttar Pradesh and Rajasthan, which have legislated their own Reform Acts have also included QoS promotion as a part of the functions of the Regulatory Commission.

c. Distribution sector also has the dubious image of insensitive consumer interfacing, corruption and inefficiency at all levels. Although many state regulatory commissions have formulated regulations, initiatives, procedures and systems ensuring improved Quality of Service (QoS). The power sector reform programmes in India have duly taken note of promoting QoS and Performance as per notification of Electricity Act, 2003 as:

Section-57 (Consumer Protection: Standards of performance of licensee) states that:

- The Appropriate Commission may, after consultation with the licensees and persons likely to be affected, specify standards of performance of a licensee or a class of licensees.
- If a licensee fails to meet the standards specified under sub-section (1), without prejudice to any penalty which may be imposed or prosecution be initiated, he/she shall be liable to pay such compensation to the person affected as may be determined by the Appropriate Commission: Provided that before determination of compensation, the concerned licensee shall be given a reasonable opportunity of being heard.
- The compensation determined under sub-section (2) shall be paid by the concerned licensee within ninety days of such determination.

Section-58 (Different standards of performance by licensee) states that the Appropriate Commission may specify different standards under subsection (1) of section 57 for a class or classes of licensee.

Section-59 (Information with respect to levels of performance) states that:

- Every licensee shall, within the period specified by the Appropriate Commission, furnish to the Commission the following information, namely:
The level of performance achieved under sub-section (1) of the section 57;
The number of cases in which compensation was made under sub-section (2) of section 57 and the aggregate amount of the compensation.
- The Appropriate Commission shall at least once in every year arrange for the publication, in such form and manner as it considers appropriate, of such of the information furnished to it under sub-section (1).

It can be seen from above that the intangible electricity showed be earmarked with tangible components to judge the level of quality and benefits being received to the end consumers. In order to judge / depict the level of Quality of Service to the consumer can be broadly categorized for depicting Quality of Service into the following parameters based on the information available in public domain – consolidated from the publications and as highlighted in the “Electricity Act 2003”:

a. Operational Parameters

i. Technical Parameters

- Voltage
- Reliability
- Overloading of Power Equipments
- Capacity Utilization and Enhancement

ii. Standard of Performance

- Consumer complaint handling
- No. of consumer complaints
- New Connections/ Energisation
- Hours of Supply
- Level of consumer awareness to the regulations like Electricity Act 2003 and Supply Code

b. Commercial Parameters

i. Meter reading

- Frequency and adherence to the time schedule of Meter reading
- No. of Faulty & Stopped Meters
- Usage of Advance Meter Reading Technology
- Spot Billing of Consumers having Faulty/ tampered Meter

ii. Billing

- Adherence to time schedule of dispatch of bills
- No. of complaints for duplicate bills
- No. of complaints of faulty bills

iii. Collection efficiency

c. Dispute Resolution

i. Presence of CGRFs and at which level (Circle/ Division/ Sub-Division)

ii. Awareness of CGRFs and its working among Consumers

iii. Performance of CGRFs

- No. of Members and their Profiles.
- No. of Independent Members
- No. of Cases Registered vs no. of Cases resolved
- No. of Cases in which compensation was being paid to appellant.

The QoS process has gathered some momentum in the past few years but not from the consumer point of view. In the Indian context, even today affordable access is one of the major challenges for the distribution utility. Poor public image of the consumer interface, badly maintained infrastructure, top-down & personality driven approach and rampant corruption at all levels are some of the major obstacles in the path to achieve it. Arriving at a right mix of performance indices with the optimum level of detail that can be supported by data and a monitoring system that facilitates transparency, accountability & participation can help in the turnover of the utility. With these considerations, systems and procedures to ensure that financial performance is not achieved at the cost of quality are essential.

Therefore, regulatory measures to improve Quality of service are welcome steps, helping the consumer to get better service from the utility. However, like all initiatives, an end-to-end commitment from planning stage to implementation stage is essential to ensure effectiveness. It should also be noted that these measures would yield the desired result only if these are fully utilized – which in turn can happen only with active participation of public interest groups. Complex indices like SAIFI, SAIDI, harmonic content etc can be considered much later or on a very selective basis. Almost all state regulations mention these sophisticated indices to be implemented in future. There is no consistency in the methods suggested for calculating and monitoring these indicators. QoS process can evolve to be the necessary and sufficient condition for continuous improvement of the distribution sector.