Assessing the Quality of e-Enabled Delivery of Public Services: A Case Study of Meeseva

Y. M. Reddy and Sanjay Jaju

Abstract—Service quality and customer satisfaction are recognized as critical for reinventing the public sector. The sources of quality in public services differ from those in private services. Review of literature however shows usage of the same model for assessing quality for both, namely SERVQUAL. This needs to be critically evaluated and a more relevant framework for assessing quality of public services, particularly those delivered using electronic methods needs to be developed. The goal of this study is to suggest a grounded model of public service quality that could provide researchers and practitioners with a foundation for a more systematic investigation and implementation.

Index Terms—E-business, e-delivery of services, public services, service quality.

I. INTRODUCTION

Public sector is collectively the world's largest service provider and measures to improve service delivery have received considerable attention in the last decade. Public sector leaders today face the challenge of satisfying their customers who expect the service delivery to match that delivered by private players. Accustomed to largely meeting the social objectives mandated by the legislation, public sector and its employees now face the formidable challenge of simultaneous achievement of equity, access, fairness, affordability, efficiency and sustainability.

Differences in public and private sector services that exist have an impact on how the quality of the services delivered should be defined and assessed. Private sector's focus on choosing its target customer segments, developing services to meet the specific needs of the identified segments, increasing consumption, tackling competition for market share or revenue share, and nature of services itself are the differences that exist. Models of service quality are developed for private sector and are therefore not directly applicable in public sector contexts.

Invariably public services are provided to the entire population. Rather than perform services directly, the service delivery is often delegated to agencies (non-governmental for profit or not-for-profit). However even though the agencies play the role delivering the services to the final customers,

ultimately the responsibility and accountability for delivery remains with the government. In order to improve quality of service and enhance customer satisfaction, the government therefore needs to address quality issues considered important by internal customers (employees), intermediate customers (agents, collaborating departments) and external customers. The attributes of quality that each of these customer groups hold important would be different and need to be addressed. Attention must be paid to the multiplicity and complexity of issues in identifying the expectations of customers of public services. Also, the sources of quality cannot be limited to service encounters and should be extended to design stage of public services, relationship with delivery partners, actual output and more.

The objective of this research was to gain a better understanding of the service quality dimensions that affect satisfaction with public services from the perspective of multiple stakeholders. The paper employs quantitative and qualitative research methods to identify the key measurable attributes of good quality public service through a case study of mee seva, an innovative e-governance model in India. On the basis of literature review and findings of the study, it proposes a framework that can be used for evaluating the quality of public services, particularly of those that are delivered in the electronic mode.

II. LITERATURE REVIEW

Service quality has been described as the overall judgment about a service that is accepted as an antecedent of overall customer satisfaction. It is also explained as the ability of an organization to meet or exceed customer expectations. Review of literature on service quality shows that service quality attributes as considered important by external customers have received considerable focus. Aspects that may be considered important by other customers particularly in the context of public services have received minimal attention.

Broadly classified under what customers receive and the manner in which they receive, servqual [1] identifies the attributes as Reliability (delivering on promises), Assurance (inspiring trust and confidence), Tangibles (representing the service physically), Empathy (treating customers as individuals), and Responsiveness(being willing to help). An extension of their study is the development of a scale to measure e-service. Delivery of public services that are e-facilitated face additional challenges of multiple platforms, diversity in user awareness and user comfort with technology. The e-service quality scale [2] called e-servqual attempts to measure service performance on four dimensions: efficiency

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(ease and speed of accessing and using the site); fulfillment (extent to which the website's promises about order delivery and item availability are fulfilled); availability (correct technical functioning of the site); privacy/security (degree to which the site is safe and protects customer information).

While these scales have been tested across multiple contexts, they not only look at service quality purely from the perspective of the service receiver but also are confined to the limited dimension of service encounter. In the context of public services, Rhee and Rha [3] study the dimensions of quality that intermediate customers hold important using critical incidents technique (CIT). They identified design quality ('how well public policies and services are established at the stages of policy development and service design'), relationship quality ('depth and climate of the relationship between suppliers that participate in the public service delivery') and service quality (reliability, responsiveness, behavioral assurance, intellectual assurance, and empathy) as key attributes. In another study [4] the factors that drive satisfaction across public services were identified as Delivery (the service delivers the promised outcome and addresses associated concerns); Timeliness (the service responds immediately to the customer queries and meets and address issues quickly); Professionalism (staff are competent and treat customers fairly); Information (the information given out to customers is accurate, comprehensive, and continuous); Staff attitude (staff are friendly, polite and sympathetic to customers' needs). Review of some other studies in public sector [5]-[9] shows that broadly, the measures of measures of service quality have been identified to include value for money; accessibility for all; operational efficiency; and customer satisfaction with service experience as well as outcomes.

The authors of this paper believe that the measures identified in literature are inadequate. The research questions asked were "How can a system of public e-delivery be implemented?" "What are the critical factors of success for delivery of public services?" "What are the quality variables that are required to develop a conceptual model of service quality for quality management in the public sector?"

III. STUDY

A. Mee Seva

The study entailed in-depth analysis of an organization that delivers public services on e-mode, is innovative, has proven work record, collaborates with multiple diverse institutions to deliver services, and has a sufficient scale of operations. Mee seva was selected and its purpose, services, operational model, customer feedback, and stakeholder views were studied in detail. The basis for selecting Mee seva was that it is heralded as the most innovative e-governance project in India. It has received several awards such as 'Gold Award at National e-governance Awards,2013', 'Outstanding Performance in Citizen Centric Service Delivery', 'CSI Nihilient award 2013','DATAQUEST-CMR E Readiness awards, 2013', '9th eIndia Award 2013', 'The Manthan Award- South Asia & Asia Pacific,2012, ' SKOCH Award 2012 for Best Project of National Significance', 'India- Tech Excellence award 2012'.

"MeeSeva" in Telugu means, 'At your service', i.e. service to citizens. It is a good governance initiative that incorporates the vision of National eGov Plan (NeGP) "Public Services Closer to Home" and facilitates single entry portal for entire range of G2C& G2B services in the state of Andhra Pradesh, India.

It was conceptualized and designed in May 2011 with the objective to provide smart, citizen centric, ethical, efficient and effective governance facilitated by technology. Universal, non-discriminatory, efficiency, transparency and accountability are the key terms that define the initiative which transformed government-citizen interface at all levels of administration by building an integrated service delivery platform. For establishing itself as a citizen's one stop e-governance shop, the biggest challenge faced was the requirement to collaborate with a large number of government departments. Multiplicity of authorities; lack of awareness about new systems; resistance to adoption of new technologies; lack of good support mechanisms from government and inadequate push from the departments to implement the e-Governance ideas are some of the issues tackled.

The Information Technology Electronics & Communications (ITE&C) department, the Nodal agency for implementation, identified the departments which had high public interfaces, like Revenue, Police, Urban Local Bodies, Health, Education, Social welfare, Rural Development etc. and started with 10 services in November 2011 in one district. Within 10 months the services were being offered in all the 23 districts of the state and by January 2012, twelve services were being offered from 400 centres handling about 60,000 transactions. Some of the steps taken by mee seva to achieve scale and quality include:

1) Deployment of teams to gain an understanding of issues being faced by the citizens with respect to availing the public services;
2) Standardizing delivery channels across the state by converting the existing Citizen Service Centres (CSCs), APOnline Centres and eseva centres into mee seva centres run by self-employed youth;
3) Setting up Electronic Service Delivery (ESD) rules to ensure that departments moved to electronic delivery of services;
4) Identifying the level of IT readiness and helping the departments in improving it;
5) Convincing departments to cooperate and building interdepartmental coordination;
6) Forming District e-Governance Societies to function as nodal agencies for implementation of mee seva in each of the districts;
7) Conducting capacity building programs for officers of departments through the societies.

The entire solution was hosted at a state of art State Data Center. The Web Based System was deployed at a central location and n-tier web-based solution was developed along with PKI Engine and Payment Processing systems. The project worked on an Integrated Service Delivery Model to provide a single entry point for a wide range of services to the citizens. It also brought in a digital PKI enabled integrated architecture through multiple service delivery points by

blending various pre-existing state initiatives with the Mission-mode Projects like State Data Center (SDC), State Wide Area Network (SWAN) and Common Service centers (CSCs).
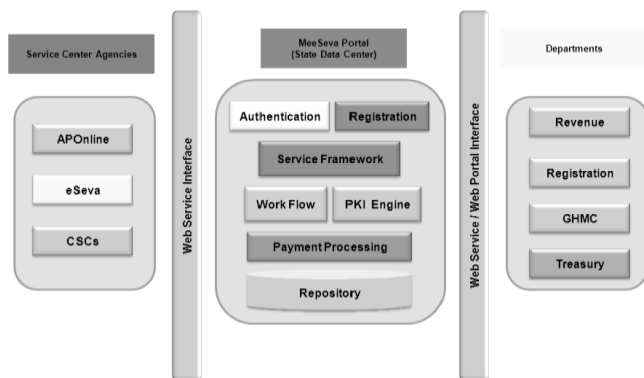

Fig. 1. Mee Seva architecture.

Mee Seva adopted the concept of central pooling of records. The records were digitally signed and stored in the database and were rendered using a web-service. Additionally the fact that citizens/officers can verify the authenticity of such digitally signed electronically made such documents tamper proof.

For processing the service requests pertaining to the departments, the concerned department's users can either log into the departmental portal or into Mee Seva directly with a secure user id, password and digital certificate. The portal would then display all the requests received from the citizens at various centres like APOnline/eSeva/CSC etc. The entire process gets done through single sign on facility and this allows seamless operation of various interfaces and systems. Once the department's user processes the requests by conducting field verification, the status and remarks are accordingly updated on the Mee Seva portal. Thus the system reduces a lot of manual efforts by consolidating the data and also makes the decision-making process an easy task. It integrates heterogeneous systems cutting across departments, brings strict adherence to the citizen charter time limits, and ushers in a whole new paradigm of across the counter services concept through massive porting and bulk signing of databases.

The challenges encountered and addressed include standardization, establishment of rules, IT readiness of Departments, categorization of G2C services, digitally signed certificates, secured stationary, speed of execution, breaking department silos, eliminating the concept of transactions, strategizing change management, ensuring e-participation, centralized it infrastructure & decentralized implementation, seamless transfer of transaction charges and real time monitoring of transactions.

As on April, 2014 a total number of 325 services are offered involving 31 departments and 7000 mee seva centres to achieve 44 million transactions. This is expected to increase to 360 services, 36 departments, 10,000 mee seva centers and 50 million transactions by the end of June 2014. The investment to the tune of Rs.9 crores has reaped a return of investment of more than Rs.100 crores. With registrations touching 600 million, payments made to departments range from 2 million to 60 million and some kiosk operators are earning up to Rs.20,000 per month. The project also delivers more than 20 crore transactions every year for other services like Bill Payments, thus making it the country's biggest one stop e-governance shop and a perfect role model for Best Practices in e-Governance. This e-Governance project can be replicated across all the states in the country.

B. Assessment of Quality

Being operational for a year, mee seva instituted a study in October 2012 to evaluate the service delivery and customer satisfaction. The objectives of the study were to evaluate the overall functioning of mee seva, assess user satisfaction and analyze the issues identified by the citizens and other stakeholders. The study covered all the 23 districts and all the 38 services that were being offered at that time. Stratified random sampling technique was used to ensure representative sample - rural and urban consumers and kiosks; high and low volume services; districts; services; departments and officials. Structured questionnaires were used to interview 10690 customers (2300 in person and 8390 by telephone) and 1370 CSC operators. Semi-structured questionnaires were used to conduct in-depth interviews with 30 officials at different partner departments. In addition to this, field teams conducted observation studies. Critical incidents were gathered during the interviews and observations studies.

As the existing instruments for assessing the quality of services by public sector were grossly inadequate, the study was conducted using instruments developed specifically for the objectives defined. Data was collected on satisfaction levels; operational difficulties; department constraints; mind-set problems; and issues related to systems, processes and procedures. The questions used to collect the data included Customer Service Preparedness: Supply Side; Level of knowledge about the services with CSC operator; Timeliness and quality of response time to the queries from the user; Level of understanding of user's needs and expectations; Awareness generation; communication efforts from the supply side and the CSC owner; Standards with regard to timeliness of service delivery; Service delivery quality; Level of customer satisfaction; Factors influencing the level of customer satisfaction; Follow up with users/Citizens; Knowledge of citizen needs and requirements; Responsiveness of service provider; Timeliness of complaint resolution; Empathy of the customer servicing staff ; and Knowledge of customer servicing staff.

C. Results and Discussion

Data collected was analyzed using content analysis and descriptive statistics. The analysis of critical incidents data was done by grouping similar incidents into various categories. This iterative repetitive process was taken up by trained raters until reliable conceptual patterns became known and until mutually exclusive and exhaustive categories emerged. Quantitative structured interview data was analyzed using frequency distributions and percentages.

The analysis revealed that an overwhelming 98% of the sample was highly satisfied. Some areas of concern brought forward were delays in issue of certificates in a few districts; inaccuracies in data entry; monitoring and coordination

mechanisms; power failures; awareness amongst the general public about the services on offer; buy in as well as customer orientation by the provider. The findings of the study informed mee seva's identification of priority areas for quality improvement. As a part of ongoing quality improvement, meeseva has identified Citizen centric services, defining Citizen Charter, service development, service deployment, training to kiosk operators and department officials and issues resolution for stabilizing the services as priority areas to enhance service quality.

It is obvious that larger participation from partner Government Departments ensures effective coordination. Currently coordination between departments is achieved through a Project Management Unit and Capacity Building Team. Some of the instruments of coordination with Government Departments are: help desk email (for suggestions, complaints and grievances); Project management unit email id (for kiosk operators, department officials and the citizens to help in timely issue resolution). Video conferences are conducted between state secretariat and districts/mandals to communicate with various developments regarding Mee Seva project as well as to discuss various issues pertaining to effective implementation of Mee Seva. Awards are given to department officials as well as kiosk owners upon achievement of key milestones related to quantity of transactions completed as well as exceptional performance in implementation of Mee Seva Services.

Mee Seva has as on April 2014 imparted training to 1,35,714 kiosk owners and 20,478 department officials by way of 3514 training sessions conducted for 300 services of 30 departments. It has established a capacity building portal, an online system to publish training calendars, accept nominations, conduct online tests and provide certifications, capture attendance and monitor all the training programs being conducted through Mee Seva. Basic typological mistakes are being addressed by way of SRDH (State Resident Data Hub) Integration with all the Mee Seva services enabling the Kiosk operators to prefill the citizen details for all service requests. Also checks and validations are available to prompt the kiosk operators for the mandatory attachments for each service request.

For enhancing monitoring efficiency, it is ideal to have an additional administrative layer at district level. This is considered ideal as every district would have implementation issues that would need to be handled and tackled locally. Some of the measures taken so far include introduction of Institutional Framework by implementing Andhra Pradesh Information Technology Rules (Electronic Service Delivery) 2011 in order to provide legal sanctity to the digitally signed certificates; delegation of powers to field functionaries by establishing District e-Governance Society for monitoring the Mee Seva along with financial decentralization; 32%/57% (A/B Category) of the user fee given to the Mee Seva kiosk owner as an incentive; and distribution of various awards to felicitate best performers in Mee Seva Project implementation.

Communicating with citizens was recognized as a crucial area. Mee seva's current communication strategy aims to communicate about capacity building, awareness, stakeholder motivation & enhanced participation, feedback/grievance management, conflict resolution, developing common interactive forums etc. Mee Seva Portal disseminates information about citizens' charter, training videos, list of mee seva centers, media releases, discussion forum, government orders, Mee Seva Request Tracking System (MRTS), Electronic Service Delivery Rules etc. Citizens and Kiosk operators can view the information as well as discuss their concerns in the discussion forums. Customers can also interact through the mee seva facebook page and call centres. While radio is being used for information dissemination, meeseva makes an interesting use of television, not just for advertising but also to impart trainings. Officials from various departments, capacity building team and qualified professionals are involved in preparation and delivery of training videos. In addition to these, Citizen Charter Boards providing details such as service name, timelines, service levels, charges etc.; have been placed in Mee Seva centers. These boards have helped visitor citizens in easy access to information by visual display of citizen charter information.

IV. FRAMEWORK

On the basis of (a) review of literature on service quality dimensions as well as studies using Critical Incident Technique (CIT) for understanding points of satisfaction and dissatisfaction with delivery of public services; (b) knowledge gained from mee seva's internal, intermediary and external consumers; (c) analysis of positive feedback and complaints received by mee seva, a comprehensive framework for assessing the quality of public services is proposed.

The framework proposes that assessment of quality of public services needs to be measured using the attributes of design, implementation and outcome quality. Process quality (offline and online) and resource quality contribute to the quality of implementation while the quality of communication, relationship and customer interface influence each other as well as all the other quality attributes.
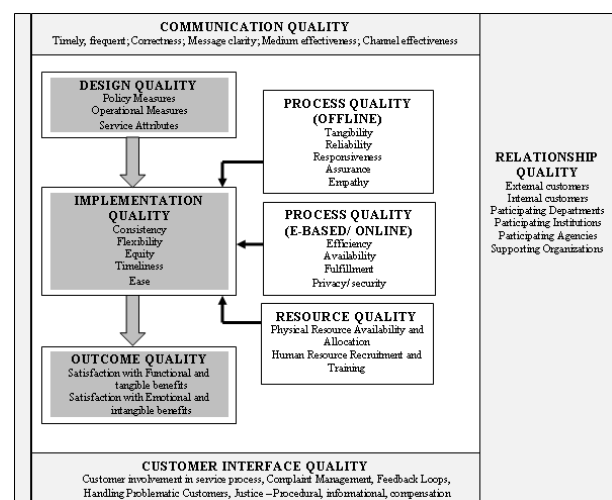

Fig. 2. Framework for assessing quality of public services.

Design quality refers to the policy as well as service design from both a strategic and a tactical perspective to meet

customer requirements. These decisions impact implementation of the services supported by technology as well as human process and by human as well as physical resources sufficiency. Process quality are service delivery measures related to reliability, professionalism, capabilities, knowledge, timeliness, ease of availing the service, availability, accessibility, functionality and staff attitude. These contribute towards effective implementation of services. Effective implementation in turn impacts the service outcome in terms of actual tangible benefit and also in terms of intangible benefits such as time and effort convenience, quality of life etc.

Depth and climate of relationships with end customers and with organizations impact quality. The characteristics of inter-organizational relationships are different from consumer relationships. While relationships with end consumers are based mainly on communications and transactions, the same in inter-organizational contexts are based on exchange and sharing of resources, data, knowledge, authorities, functions, and capabilities. Inter-organizational relationships are complex and can be furthered through the mechanisms of coordination, collaboration, and communication. Integrating services; joint decision making and activities; transfer of authority and resources; friendliness and work atmosphere comfort are some of the variables of the relationship attribute.

Communication with internal, external and intermediate customers and with other stakeholders plays a key role in assessment of service quality. In addition to creating awareness and generating demand, communication plays a crucial role in framing of expectations against which perceived quality of service experienced is evaluated. Clarity, completeness, accuracy, timeliness, types of channels and media used to engage different consumers therefore are important variables. Customer interface an essential component of service experience need to be established in terms of involving them in the process of delivery of services, experiencing services, engaging with the providers to provide feedback enhance the quality of service design, implementation and outcome.

V. Conclusion

The achievement of Mee Seva can be measured in terms of the wider digital inclusion of the entire population of Andhra Pradesh towards development and growth. The key learning is that projects like Mee Seva should avoid the deeply rooted technological determinism which assumes that the layering of ICTs in development alone will automatically solve many pre-existing constraints related to gender, caste, feudalism, privilege and traditional exercises of power, factors which limit the real potential of ICTs in citizen centric service delivery in particular and development in general.

The project also holds a lesson that thorough preparatory work is important to avoid mishaps or breakdowns in service delivery, availability and updating of accurate data, adherence to timelines indicated in Citizen Charters, monitoring the performance and dynamic evaluation from time to time. The project has been a success mainly because

of the involvement of multiple stakeholders with specific motivations, all seamlessly fusing towards a common goal. Mee Seva is a simple, home-grown initiative which has evolved every passing day through the efforts of thousands of stake holders all across the state. The big learning is to involve all the stakeholders' right throughout the project cycle and allow the project to evolve. The push from Hon'ble Chief Minister of Andhra Pradesh, helped in getting the departmental buy-in truly exemplifying the need for political will in such changes. The mixture of success here is a noble thought, committed individuals, supporting technology and some impatience.

Mee Seva approach to service delivery needed a complete transformation in capacity which was strategized to be achieved by bringing in innovation in organizational and technological model. A complete realization that the process had to move through all the stages starting from visioning and leading to a sustainable model of service delivery was the cornerstone of the overall strategy. Technology driven efforts were planned, assigned and implemented for various departments to increase efficiency in service delivery; department processes were re-engineered considering feasibility of implementation and participation from various stakeholders was ensured for problem solving and decision making. Resource utilization was maximized by incorporating innovative procedures and expanding domain expertise among government departments to increase their overall capacity. Mee Seva approach also made it possible to achieve multiple economies of scale, scope and learning leading to enhanced capacities and ease of expansion.

The case study of meeseva, an innovative one stop e-gov shop was critical in gaining an understanding of the different sources of public sector quality that lead to customer satisfaction. Attributes of public service quality derived from literature as well as the study were used to develop a framework for evaluating the quality of public services delivered using e-mode. The proposed framework can be used for identifying and monitoring the aspects that affect customer satisfaction. It is transferable and could be used to guide initiatives for enhancing the quality of service delivery of public services. The framework however needs to be put to test in different contexts and for a range of public services. Development of a standardized instrument using this framework; empirical testing of causal relationship between the individual quality attributes and customer satisfaction are interesting areas for further research.

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