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Database Integration and Quality Services of MCD: A Study Based On MCD Officials Perception

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***Abstract*--In 21st century, mass customization and changing market environment forces organizations to migrate from rigid procedures to platform that offers many online services to something more stable, transparent, speedy and reliable manner. MCD is a service provider organization and providing many different online services to citizens but its service delivery time can be more improved by real time information updates in databases. This paper would highlight and focus about work to identify the disintegrated nature of data flow in functioning of various departments of MCD by getting feedback to MCD officials those who are practically using software applications. Objective is to integrate all data of various departments for information sharing in the MCD for better coordination, control and communication to offer quality services to citizens by implementing ERP in future.**

***Keywords*--Information sharing, Database, Inter department communications**

I. INTRODUCTION

MCD covers ninety five percent areas, in Delhi. It provides many types of essential services to about approximately 14 million citizens for which independent databases' software applications are used by many departments such as education, community service, hospital, property tax and licenses etc. of MCD [5,6]. This type of software applications provide many benefits to deliver the required services but some problems arise when these services are used in integration for information sharing within different MCD departments. It has been observed that despite offering many online citizen services, still sometime manual file base /offline information sharing systems also followed by MCD. This all makes it difficult to get accurate information on time and thus this disintegrated nature of database management system is one of the major problems to redundant data of MCD, which reduces administrative efficiency, efficiency in delivery of municipal services, decentralization, information sharing and transparency. MCD requires drastic transition for adaptation of new software technology for information sharing by maintaining and integrating the databases of world's most populated capital city to provide maximum benefit to their beloved citizens.

Therefore, this work focus on the problem of unavailability of real-time data due to disintegration function of databases for information sharing actually exist by getting feedback to MCD officials those who are practically using software applications.

Therefore, As outcome of this work exemplify that to get the speedy quality services of different applications from different MCD departments' further work has to be done to integrate all the organization's processes for information sharing by achieving end-to-end connectivity of databases making them processes more efficient by implementing ERP solution so that major benefit is in the form of convenience and service delivery improvement to citizens as well as increased transparency and accountability.

The outline of this paper is as follows. We begin with introduction of present information sharing status of MCD in section 1. Section 2; briefly describe the earlier work done by researchers, scientists and developers & implemented using technology for information sharing across the world. Section 3 represents methodology to carry on this work to collect, organize, and express the data. MCD officials' responses on various vital factors are analyzed and interpreted in section 4. Significant findings of this work to make MCD more competitive organization to face comprehensive challenge are in section 5. Finally, we conclude in section 6.

II. EARLIER WORK DONE

Bhatnagar [2] described the importance of critical success factors in building e-government applications. The research discussed various options available for orchestrating e-government on a countrywide scale from the vantage point of a nodal authority. **Reddy et al.** in [7] have given importance of local database integration with global databases that require transformation of existing local databases to global level through the four layered procedure that stresses total schema integration and virtual integration of local databases.

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Batini et al. [3] focus is to provide a unifying framework for the problem of schema integration by analyzing the strengths and weaknesses of individual methodologies, as well as general guidelines for future improvements and extensions of database integration. **Brehm and Markus** [1] focus is on the activities performed by a company for developing, implementing and maintaining software for its own internal use. **Guntamukkala et al.** [4] categorize the existing software model with name of heavyweight, middleweight & lightweight and did their analysis on flexibility components of software in terms of its software paradigms, programming languages and their software lifecycle model. **Gupta and Kumar et al.** [5] described issues involved with MCD functionality, ERP software, and identify the basic motivational requirements and concerns of ERP implementation for MCD to enable improved services.

III. Research Methodology

The study was done to know the present MCD information system follows the single database management for sharing the records of their entire citizen's services. The objective of collecting data using questionnaire from MCD officials is to focus on problem. This work identifies the shortcomings of present database management system of Delhi MCD and proposes for change to implement ERP software. Data are collected from MCD officials dividing it in segments and are utilizing who are using present system for information sharing. In this research, the raw data was captured in a spread sheet software package. The spreadsheet was later then converted into statistical software package SPSS 18.

IV. Analysis And Interpretation

Figure-1 as shown below represents the responses of MCD officials related to the statement (A1) "*MCD present database system integrated for information sharing*". Approximate **seventeen percent** of the MCD officials are found to agree with the statement. It is observed during this study that various departments are having multiple databases such as property tax, finance, school management, hospital management etc. It is also observed that there is a lack of databases integration among these departments. This fragmentation is a source of number of problems which reduces efficiency of MCD to deliver the services to the 14 million plus citizens. Due to this, most of the MCD officials are disagree with the statement.

Figure-1 represents the responses of MCD officials related to the statement (A2) "*MCD present software has service feedback and control mechanism for offered services to citizen".* The present MCD software's system is not fully equipped with online service feedback and control mechanism. Many of the private organizations have such kind of service feedback practices that provide customers satisfaction either by online feedback forms or by telephonic acknowledgement. Approximately **thirty four percent** of MCD officials are found to agree with the statement because many of the MCD services status like online tendering, hospital services are available online.

Figure-1 represents the responses of MCD officials related to the statement (A3) *"Present MCD software using at various department has ability to timely track and control services information".* Only **twenty two percent** of replies are found to agree with the statement because they feel that only by providing online services platform will help them to uplift the citizen satisfactions. It is observed during survey that at present some of the MCD departments using software like hospital management, school management, community services etc. are available online but are not fully updated with all the citizen personal database information. This resulted in unavailability of tracking citizen's service status on time. Facility of monitoring online service status helps MCD to uplift the citizen satisfaction about their services.

Figure-1 represents the responses of MCD officials related to the statement (A4) "*Present MCD Information and Communication Technology (ICT) infrastructure supported information sharing".* Around **twenty eight percent** of MCD officials are found to agree with the statement because they thought present information and communication technology infrastructure is good for delivering services to the citizen without dynamical exchange of the information.

Figure-1 represents the responses of MCD officials related to the statement (A5) "*MCD require single enterprise information system*. Around **seventeen percent** of the MCD officials are found to disagree with the statement because they are unaware with the concept and benefit of database integration which bring more efficiency in MCD operations.

Figure-1 represents the responses of MCD officials related to the statement [A6] "*There is urgent requirement to implement ERP at Delhi MCD for information sharing to improves citizen services".*

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More than **eleven percent** of the MCD officials are disagree with the statement because they are unaware of the advantages of the ERP.

Lack of business and administrative transparency was observed during the MCD site visit because of disintegration nature of the MCD database.

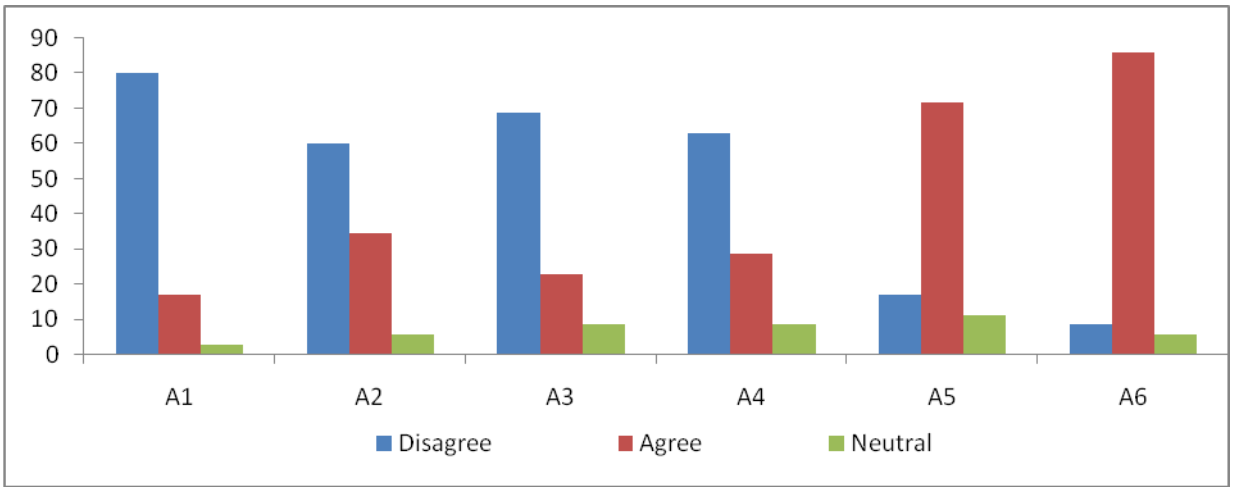

Figure-1: Responses for information sharing potential of MCD

V. Results And Findings

The responses of MCD officials as shown in figure-1 are well summarized and represented in the table-1. Over all four statements were rejected/dropped from the analysis table as they were found inconsistent.

Around **80 percent** of MCD respondents disagree with the statement (A1). It is observed that there is a lack of databases integration among departments. Such isolated database management system cannot exchange citizen details across different departments within MCD because of lack of their database integration. Therefore, MCD badly requires database integration of its different departments to improve citizen services.

Sixty percent of MCD respondents disagree with the statement (A2). It means present MCD software's system is not fully equipped with online service feedback and control mechanism. However, approximately thirty four percent of MCD officers are found to agree with the statement because many of the MCD services status like online tendering, hospital services are available online.

About **sixty eight percent** of responses are found to disagree with the statement (A3). It indicates that software's which is used by MCD does not possess quality of timely track and control citizen service related information about various services.

Thus, it is observed that at present some of the MCD departments using software like hospital management, school management, community services etc. are available online but are not fully updated with all the citizen personal database information.

Approximate **sixty three percent** of the MCD officials are found to disagree with the statement (A4). Many MCD officials are not very much comfortable working with present ICT infrastructure because independent databases store data separately in different size, and formats that creates many problems when services are used in integration for dynamic information sharing within different MCD departments.

More than **sixty nine percent** of MCD officials were found to agree with the statement (A5). It was observed in study that several MCD departments have its independent database management system for information sharing and some of them also maintained manual file base system.

More than **seventy five percent** of the MCD officials were found to be agree with the statement (A6). At present, MCD departments cannot exchange their citizen and other administrative details with one other freely on real time. But after ERP implementation citizen will enter their personal information details one time for availing of different MCD services.

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Table -1
Analysis Table

S.No.	Statements	Agree/ Disagree	Consistency	Accepted/ Rejected
A1.	MCD present database system integrated for information sharing	Disagree	Inconsistent	Rejected
A2.	MCD present software has service feedback and control mechanism for offered services to citizen	Disagree	Inconsistent	Rejected
A3.	Present MCD software using at various department has ability to timely track and control services information	Disagree	Inconsistent	Rejected
A4.	Present MCD Information and Communication Technology (ICT) infrastructure supported information sharing	Disagree	Inconsistent	Rejected
A5.	MCD require single enterprise information system	Agree	consistent	Accepted
A6.	There is urgent requirement to implement ERP at Delhi MCD for information sharing and to improves citizen services	Agree	consistent	Accepted

VI. CONCLUSION

The common database can allow every department of an organization to store and retrieve information in real time and whenever this information is needed without having to ask each department for the relevant information. The information should be reliable, accessible and easily shared. This work indicates that there is a lack of information sharing among various departments to flow real time information to offer quality online services for citizens. This fragmentation is a source of number of problems which reduces efficiency of MCD to deliver the services to the citizens. Therefore, demand for change to implement ERP in MCD is factual and that will combine all together into a single, integrated software program that runs off a single database so that the various departments can more easily share real time information and communicate with each other.

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