

## Role of Process Automation in Service Quality Enhancement of MSMEs

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### Abstract

No one quibbles against the dexterity of Micro, Small and Medium Enterprises (MSMEs) in making the quality products and rendering services to the end users. Indeed the services tendered by MSMEs are bolstered by the personal care and customized solutions to the service requirements which fared well in creating the rubrics of strong customer relation management by MSMEs. But the radical process automation adopted by large scale entities in the form of business process reengineering and enterprise resource planning have enabled them to enhance the quality of services and dominate the service quality of MSMEs in every nook and corner. Therefore, it is proposed to bring out a research paper titled 'Role of Process Automation in Service Quality Enhancement of MSMEs' to identify the loopholes of service matrix offered by MSMEs and to examine the feasibility of automating the service quality. It is also learnt from the innovative government initiatives like "Startup India" that there are innumerable technology driven tools mounting up in the market to enhance the service quality of small scale units with very affordable investments. Thus, the alternatives available at the disposal of MSMEs to augment the service quality are also proposed to be examined to form the core of this paper.

### Introduction

More often the quality of services offered by MSMEs are caviled by the end users for not streamlining the process of services and identifying the suitable attributes of services. The service deficiencies of MSMEs also compel the customers to draw in grief that "the problem wouldn't arise if it is bought from a branded large scale seller". Such impression always questions the efficacy of the efforts made by MSMEs in rendering quality services though they are adroit enough to meet the service expectations across the value chain. The common problems of MSMEs encountered in rendering universally acceptable services includes improper recording of service requirements, inadequate documentation of earlier services, improper feedback, untimely follow up of the post sale performance of the end products and services, improper service remainders and ultimately inadequate service personnel. These attributes forms the holistic service management policies of any organization and many of such inadequacies can be addressed by means of service process automation. The fierce competition prevailing among the Enterprise Resource Planning (ERP) entities has drastically brought down the cost of automating service management and helping MSMEs to fasten their service improvement measures with the expectations of end users. But, service

automation brings a radical change in the way organizations function and meet the demands of stakeholders. It also occasions the entities to give up certain conventional practices and adapt flexible cost policies to relish the long run synergies. Thus, how far MSMEs can implement service automation under such constraints need to be examined in depth. In this pursuit, the earlier research conducted on service process automation in MSMEs is reviewed through the secondary data sources.

## **Review of Literature**

**Martin (2010)**<sup>1</sup> undertook ten small scale industrial units of USA which have adapted ERP packages to automate the process of rendering services and drew his conclusion that automation initially doesn't yield benefits with respect to the service management. Rather, it consumes fairly long time in understanding the entire flow of services and systematize the same. He also observed that the SMEs which have adapted service automation technologies sustained revenue losses in the initial years of implementing the policies due to improper understanding of automated service procedures.

**Sikka (2011)**<sup>2</sup> has authored in his paper that the efficiency of service process automation mainly depends on the way service attributes are defined by the entity. He strongly felt that any organization desirous of automating service process must endeavor to streamline the process through aptly defining the range of services it offers and virtually integrate every component of service management.

**Lesley & Garg (2012)**<sup>3</sup> have emphasized that service automation is more beneficial to large scale entities owing to the economies of operations. They have identified in their study that large scale units have been allocating five to eight percent of their annual budgets to automate the internal procedures and to enhance the serves quality in all the dimensions. Therefore, it is very required to examine the position of SMEs in meeting the challenges of global quality services.

**Arya & Bakshi (2014)**<sup>4</sup> have studied that asymmetric flow of information across the value chain of MSMEs is one of the prime causes of poor service quality. They have argued in their paper that still MSMEs majority of MSMEs are reluctant to institute paperless environment at the organizational level which degrades their ability of identifying the loopholes of service management. Therefore, service automation can not be brought to fruition unless MSMEs adapt ERP enabled functioning system.

The literature survey has established a very strong empirical relationship between the Service Process Automation (SPA) and service quality enhancement in MSME sector. Therefore, the following objectives are proposed to check the tradeoff between automation and service quality.

## **Objectives of the Paper**

- Conducting a study on the service automation models which can be adapted by MSMEs.
- Conducting a comparative study on post sale services of MSMEs adapting process automation and not adapting automation.

## **Methodology**

The first objective is perceived with the help of secondary data available on the models of service automation. On the other hand, the second objective is proposed to study whether there is any difference of service quality rendered by MSMEs with process automation and MSMEs without automation in terms of consumer perceptions which shall be studied through the following hypothesis.

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**Null Hypothesis  $H_0$**  : there is no significant difference between the quality of post sale services of MSMEs automated and not automated.

**Alternative Hypothesis  $H_1$**  : there is a significant difference between the quality of post sale services of MSMEs automated and not automated.

The hypothesis is tested with the help of Mann- Whitney U test at 5% d.o.f which is,

$$Z = \frac{u - e(u)}{\sigma}$$

$$U_1 = \frac{n_1 n_2 + n_1(n_1 + 1)}{2} - r_1$$

$$U_2 = \frac{n_1 n_2 + n_2(n_2 + 1)}{2} - r_2$$

$$E(u) = \frac{n_1 n_2}{2}$$

$$U = \min(u_1, u_2)$$

Where  $u$ ,  $e(u)$  and  $\sigma$  stands for actual value of ranks, expected value of ranks and standard deviation respectively and  $r$  represents the rank of each part of the sample and  $n_1$  and  $n_2$  represents the respondents of large scale and small scale units.

### Sample Size

This paper is constructed with a sample of thirty respondents in such a way that fifteen members were selected from a small scale unit which has automated service process offering engineering components and fifteen others from a small scale unit without automation offering similar products. The respondents were asked to rank the post sale service quality of their vendor on a ten point scale So that, the U test can be applied to test the hypothesis.

### Service Automation Models Available for MSMEs

The Service Process Automation (SPA) is best defined as the process of streamlining the proactive and reactive tasks of rendering services and embodied into a system that signals manual actions to be performed. Large scale units can design dedicated software and customized tools to automate the service process with huge investments which can be leveraged through their size of operations. But MSMEs are not scaled up to make such investments in designing customized environment. Therefore, they can explore the following economical methods to automate the service process.

**Cards & Coupon Model:** it is a simple method under which the database structure maintained in normal computer generates E Mails ( Cards) to the registered mails of customers to remain the service requirements and also provides timely information on the advancements in the product or product up gradation. The system can also be configured with very nominal expenditure to generate service coupons coupled with value addition. Such coupons can be linked to the parameters like frequency, quantum and value of the purchases made by the customers based on the database maintained by the entity.

**MIS Models:** Management Information System is no longer a prerogative of large scale entities. The data storage innovations like cloud computing and other virtual storage tools have been extending hands on help to MSMEs in order to automate their internal processes. MIS enabled MSMEs are proved to have been rendering quick services to the customers in post sale scenario and also getting succeeded to assess the service quality expectations.

**Mobile Based Apps Model:** mobile applications or simple 'apps' is another economical tool which can be designed to automate the service process. It not only helps establishing a direct link between buyer and seller but also helps the organization to track the customer preferences as it enables to access the searching criterion of the customer. However, it is not possible for customer to install app for a single product. Therefore, MSMEs engaged in different product lines can collaborate to develop one common app.

**ERP model:** Enterprise Resource Planning was confined to large scale units for very long period of time owing to the time and investment constraints involved in implementing ERP environment. But the competition proliferating among the ERP service providers has unleashed economical solutions to grab the opportunities of SME world. A small scale entity can now afford to implement ERP packages with minimum investment of Rs ten Lakh. This will help to integrate all the service processes into holistic automated environment.

### Comparative Matrix of Service Automation Models

Entity model	Micro Units	Small Scale Units	Medium Scale Units
Cards & Coupons	affordable	affordable	affordable
MIS Model	Partially affordable	affordable	affordable
Mobile App Model	Not affordable	affordable	affordable
ERP Model	Not affordable	Partially affordable	affordable

**Source:** constructed on the merits of cost factor.

### Testing of Hypothesis

Respondents of automated entity	Rank on 1-10 scale	Respondents of non automated entity	Rank on 1-10 scale
1	8.5	1	3
2	7	2	3.5
3	4	3	7
4	7	4	6
5	6.5	5	6.5
6	6.7	6	4.5
7	5	7	6
8	5.5	8	2.5
9	6	9	3
10	8	10	5
11	7	11	4.5
12	3.5	12	6.5
13	5	13	3.5
14	4.5	14	6
15	5.5	15	5

$R_1$  and  $R_2$  from the summation of column 2 and 4 of the above table are therefore 89.5 and 72.5 respectively. Using the formulae stated in the methodology,  $U_1$  and  $U_2$  are 255.3 and 272.5 respectively of which, smallest value i.e. 255.3 is considered as  $U$ .

The standard deviation of the samples is obtained through,

$$\sigma = \sqrt{n_1 n_2 (n_1 + n_2 + 1) / 12}.$$

$$= \sqrt{15 \times 15 (15 + 15 + 1) / 12} \text{ which is } 24.109.$$

$$Z = 255.3 - 112.5 / 24.109 \text{ which is } 5.923$$

### **Interpretation**

Thus the calculated value of Z (5.923) is more than the expected value of Z(1.96) at 5% degrees of freedom, the null hypothesis is rejected. It means the post sale services offered by MSMEs with service process automation are certainly different from that of unautomated entities.

### **Conclusion**

It is very essential for MSMEs to tender timely services to customers in order to retain them in a competitive environment which requires astute support from the system configured with quick and proactive service processes in the form of automation. MSMEs are also being bestowed with affordable service automation techniques which must be explored keeping the long term synergies in view. Otherwise, the gap between automated and unautomated MSMEs may become impeccable as tested in the hypothesis of this paper.

### **References**

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