DMAIC CONCEPT TO REACHING OUT TO USERS TO SATISFY THROUGH E-SERVICES IN TEN CAMPUSES OF RASHTRIYA SANSKRIT SANSTHAN'S LIBRARIES: A CRITICAL STUDY

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ABSTRACT

In this digital era, libraries are facing major problem to provide maximum satisfaction to its users as libraries are meant for to disseminate needed information to the users at appropriate time at on par with their satisfaction. In general the Define, Measure, Analyze, Improve, and Control (DMAIC) concept which is used to implement in ten campuses of Rashtriya Sanskrit Sansthans: libraries in order to minimize the errors and maximize the quality output and to improve library e-services in order to bring utmost satisfaction from, to the user community.

Keywords: DMAIC; RSKS Digital Libraries; e-Services; Quality

1. INTRODUCTION

India is the Land of Knowledge and astuteness from the time immemorial. Even though outsiders also came to India to fulfill their intellectual curiosities. The British's, French, Portuguese, Chinese, Arabians, Persians, Italians, Greeks, Egyptians and Germans are cases. Sanskrit is the life line of the Indian social order. It has assumed the part of medium of scholastic communication and exercises for options for anyhow more than 5000 years in the known history of India. Thus, it came to be rich and in profitable store of Indian thought and society. Along these lines Sanskrit is not a simple dialect in feeling of term "dialect" yet a great deal more past it. It holds composed material relating to different limbs of study, for

example science. Technology, Humanities and social sciences. The shrewdness of Sanskrit content in the above field is parallel and integral to the present day information in concerned subject. It is the mother of all Indian dialects in more than one sense. It has offered ascent to some Indian dialects as well as clear their structure and evocable size. Indeed, today it is a hotspot for all Indian dialects to determine their fundamental quality of development and to meet the tests of cutting edge innovation and sciences. Sanskrit puts before us the social, ethical and religious qualities to which this incredible country has demonstrated to its adherence for many years. Furthermore, to place it in an exceptionally basic manner, Sanskrit is the soul of India.

In olden days libraries are considered as a book store and the librarians as book keepers. Almost the said period is gone out due to the advancement and development of electronic technologies, internet, library open source software and e-journals / consortia. The fifth golden law coined by the Father of Library Science, Prof. Shiyali Ramamrita Ranganathan, "Library is a growing organism" can be fulfilled if the librarians and the libraries ought to adopt and implement these technologies in order to improve, manage and maintain the library to serve the users in an efficient way. It means these technologies being forced the librarians to upgrade herself / himself towards the development.

2. DEFINITION

DMAIC, which is pronounced "de-may-ick," is a tool to improve an existing process.

DMAIC refers to a data-driven improvement cycle used for improving, optimizing and stabilizing business processes and designs. The DMAIC improvement cycle is the core process used to drive Six Sigma projects. DMAIC is not exclusive to Six Sigma and can be used as the framework for other improvement applications2.

The five phases of DMAIC cycle will bring / get optimum results in a systematic way continuously as these phases help in error free performance with highly competitive quality3.

DMAIC refers to a data-driven improvement cycle to improve, optimize and stabilize the business processes and designs. DMAIC is the main process to drive Six Sigma projects. DMAIC will be used as the skeleton for all the other improvement applications apart from Six Sigma4.

Hence, in bringing out the quality of the library e-services and to have an eye on the application of modern technologies in the Libraries, Authors of this paper tried DMAIC cycle to provide an awareness in the usage of modern technologies in bringing out the quality services to satisfy the users of the library5.

3. OBJECTIVES OF THE STUDY

1. To study the DMAIC concept in library services offered by Sansthans libraries
2. DMAIC concept to Reaching Out to Users to Satisfy through E-services in Ten Campuses of Rashtriya Sanskrit Sansthans Libraries.
3. To assess the strengthens and weakness of the Sansthan's library
4. To know expectations and problems faced by the users of the Sansthans libraries
5. To find the status of automation of these libraries
6. To find out the attempts taken by the library staff to promote various services.
7. To explain the methodology Rashtriya Sansthans Libraries on e-resources
8. To highlight the benefits of DMAIC concept (Sansthan's Library services)

4. METHODOLOGY

Step 1: Define the Problem: We should attempt to identify the various inputs and output variables. For example, to specify which type of the users of the library; identify their needs as the input variable and outline their expectations as the output variable.

Step 2: As soon as we come to know the users' expectations, we should start to measure them. For example, to decide which kind of technology should be implemented as per the need. E-Granthalaya technology or bar-coding technology or cloud computing technology

Step 3: As soon as we identify the request by comparing the existing and forthcoming performance, it is necessary to determine the causes of the request and to determine the effect of the performance. By taking SWOT analysis, of course by the use of feedback of the users in using this modern technologies which will analyse the improvement by giving rank for further proceedings.

Step 4: Based on the observations of the Strength, Weak, Opportunity, and Threat analysis, we should adjust the process to improve until we should eradicate the unwanted variations by the use of chi-square test, etc. Being RSKS libraries e-resource process is a continuous process, we should continue this process till we get the desired expectations

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Step 5: Once the desired expectation is achieved, the control plan should get accompanied to ensure the output continue to be at an acceptable quality level. For example, being library is a growing organism, the process should keep on continue with the latest technologies.

5. Benefits of DMAIC Concept

The benefit of this study is to analyses the existing quality of the library services and suggesting how to improve the services of the library as follows:

5.1   Define: Define the suitable e-resources and e-services to meet the needs of the users.

  ❖ Insufficient library staff to provide the required services.

  ❖ Failure in maintaining the infrastructure facilities.

  ❖ Unsatisfied Behaviour of the library staff with the users.

  ❖ Failure of using library automation software like AUTOLIB with bar-coding technology / RFID, etc.

  ❖ Failure of using open source library software like KOHA, etc.

  ❖ Failure of providing mobile technology e.g. information about their transaction, due reminder alert, etc

  ❖ Failure in maintaining the institutional repositories using Dspace, e-prints, greenstone, etc

  ❖ Failure in providing library content management services e.g. Drupal, joomla

  ❖ Resources are not available as per the OPAC (online public access catalogue)

  ❖ Inconvenient Timings to access the library e-resource and e-services

  ❖ Failing to inform about the current awareness resources and services

  ❖ Failure in taking feedback from the users for the purpose of (Strength, weak, opportunity, threat)

  ❖ Failure in providing Inter library loan

  ❖ Failure in utilizing Web 2.0 applications like Facebook, RSS, twitter, podcast, etc

  ❖ The above problems are considered as "Defective" while providing the library

5.2.   Measure: Implement the required technology to reach out to the users

    The present library services will be measured as per the statements mentioned in the Define phase (e.g. by measuring the level of user requirements, the level of budgets, skills of the librarians to let the users to utilize the e-resources and e-services in an efficient way, etc.). The actual and applicable

measurements are used to measure and evaluate the existing library service system. Based on the CTQ (Critical to Quality) and objectives, the questionnaires will be prepared. Five point scales will be used in the questionnaire. Questionnaire may be ordered, one dimensional scale from which respondents will choose one option that best line up their observation. Each question will be provided with five options. The given five options will be used to measure five different levels of satisfaction of the user for the particular services of the library.

5.3 Improve: Can bring the overall efficiency among library staff members

Whatever the problems we have identified in analyse phase will be useful to identify the options for solutions to improve. The defective services will be rectified and will get improvement in this phase. The suggestions may be as follows if we found defect in any one of the mention defined phase:

- ❖ If insufficient library staff exists, the part-time staff may be appointed on daily wages.
- ❖ Volunteers may be appointed by giving service cup if they maintain the infrastructure in the proper manner.
- ❖ The librarian should make necessary step in giving intention to the higher authorities about the importance of the automated library software and make them to go ahead for purchase.
- ❖ Librarian and all the library staff should attend the workshop, seminars and conference to get updation in providing new technologies to the library.
- ❖ Backup should be taken daily by the technical persons.
- ❖ Annual Maintenance contract should be maintained for all equipment's and software's.
- ❖ They should store the necessary consumables in advance due to the unavailability of the same.
- ❖ The librarian should be very active in supervising all the sections and if found any problem should get rectified immediately.
- ❖ Periodical up gradation of hardware's, software & tools as necessary which should have advanced technology and should be user friendly.
- ❖ The librarian should have contact with everyone over e-mail, telephone, sms, Facebook, twitter, podcast, etc. in informing about the uptodate activities, requests and new arrivals, etc.
- ❖ Even stock checking may be done with the use of quick scanner.

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By doing the above, the image and quality of the library will get improved and the particular organization itself will get the good name because of the library. The librarian should get in touch with library users to know their need to improve and to discuss with them for their likes and dislikes.

5.3. Control: Can minimize the user's complaints and maximize user's satisfaction

The recommended improvements should get established straightway. After implementation, the library should maintain the necessary process. The systemization should ensure that the process continues in a new path of optimization and ensure the conditions of the new process are documented and monitored by the librarian. This will help us in the future upgrading. To put it in practice of RSKS phase, the control phase helps to find out the barriers of the users, control the waste of time, energy, and money of the institution as well as of the users and to keep control over bugs, viruses, hackers, system failure, etc.

The present study is a survey of Library services which are provided by Rashtriya Sanskrit Sansthan Library: (The Number of Complaints Received)

1. Sufficient Library staff
2. Maintenance of Infrastructure facilities
3. Behaviors of the library staff
4. Availability of library automated software with barcode technology or RFID
5. Implementation of open source software (KOHA, etc.)
6. Mobile Technology Services e.g. information about your transaction, alertness of your due date, etc.
7. Cloud computing services e.g. online access, reservation, etc.
8. Institutional repository system e.g. DSPACE, GREEN STONE, etc.
9. Library Management Services e.g. Joomla

5.4. Analyze

Can use DMAIC as a technical cycle to bring the efficiency on e- resources. This process is used to identify the defects among the chances selected for the study. With the intention of identifying the defects in the library services if more than 50% of results in the last three points of collective percentage recoded in a particular chances, then it is considered as defect. The last three points of the study are twice in a month, once in a week and frequently. The number of defects identified as per collection of data will be tabulated in Table 2.

Table 2. The Number of Defects Identified1.

1. Sufficient Library staff

2. Maintenance of Infrastructure facilities

3. Behaviour of the library staff

4. Availability of library automated software with barcode technology or RFID

5. Implementation of open source software (KOHA, etc.)

6. Cloud computing services e.g. online access, reservation, etc.

7. Institutional repository system e.g. DSPACE, GREEN STONE, etc.

8. Library Management Services e.g. Joomla

9. OPAC (Online Public Access Catalogue)

10. Timings of the Library services

11. Limitation of the access for the particular users

If the sum is upto 40%, it is not considered as a defect. If the sum is upto 60%, it is considered as defect. After identifying the defects, the next step is to map the quality of the existing service process to six sigma standards.The mapping will be done in 2 (two) steps:

1. Compute defects per million chances (DPMC);

2. Map DPMC to the standards of Six Sigma.

DPMC will be computed as per the given formula:

$$DPMC = \frac{(\text{Number of Defects})}{\text{No. of units} \times \text{No. of chances}} \times 1000000$$

5.5.Improve: Can bring the overall efficiency among library staff members

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4. Librarian and all the library staff should attend the workshop, seminars and conference to get updating in providing new technologies to the library.

5. Backup should be taken daily by the technical persons.

6. Annual Maintenance contract should be maintained for all equipment's and software's.

7. They should store the necessary consumables in advance due to the unavailability of the same.

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9. Periodical up gradation of hardware's, software's & tools as necessary which should have advanced technology and should be user friendly.

10. The librarian should have contact with everyone over e-mail, telephone, sms, Facebook, twitter, podcast, etc. in informing about the up-to-date activities, requests and new arrivals, etc.

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5.7 Control: Can minimize the users complaints and maximize users satisfaction

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6. SIGNIFICATION OF THE STUDY

This study was significance for the students, teachers as well as library library users of Rashtriya Sanskrit Sansthan's. Due to this study Sansthans knows about their own strengthens and weakness. Might be after this study try to over comp on weaknesses. This study also focused on the problem faced by users and their expectation. With this researcher Sansthans improve the quality of library services.

The resources and services of libraries are channelized for users. The success of a library can be measured not by its attractive building or by well selected documents, but by the extent of use of its resources and services. It is significant to know whether libraries are meeting the information needs of users. This study has been undertaken to ascertain the use of the resources and services of Sanskrit libraries of education by students and teachers. It is an attempt to find the users' awareness and use of resources and services and their satisfaction with these. It will be helpful to formulate policies to fill gaps wherever needed.

7. FUTURE PLAN

Today's library and information professionals are confronted with a broad range of challenges and opportunities to improve the effectiveness of their organizations, to respond better to the information needs of their communities, and to provide leadership in the information environment. Innovative, original and scientific research in library and information science not only increases the quality of services but solves the practical problems of library facilities. The emerging areas of research in an electronic and digital environment have posed serious challenges to library paving a way to entirely transform and meet the challenges.

8. SUGGESTIONS OF THE LIBRARIANS

The librarians of Sansthan's libraries covered in the study were requested to offer suggestions for the improvement of their respective libraries. Their key suggestions are analysed and the results are presented for the librarian suggested for an enhanced library grant and librarians Authority' physical facilities including functional library building, furniture, more qualitative collection, computerization of the library and provision of internet facility to the users and conducting library awareness programme to the Rashtriya Sanskrit Sansthan. separate grants for periodical section, appointment of full time librarians each campus, mobile library service, participation in various social activities,

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function as an information Centre, more working hours, free library service, and open access for more improved library performance. The suggestions made by the librarians from their personal experience are valuable and deserve special attention. Library authorities of ten campuses also reported that adequate more funds and full time librarians are necessary for the proper development of the libraries.

9.   CONCLUSION

DMAIC concept helps to minimize the defects and errors in industries like wise this will minimize the users' grievances and maximize their satisfaction on overall the ten campuses of Rashtriya Sanskrit Sansthan's library services, especially on e-services. Quality is the key concept in any service oriented organization. To improve, maintain and to achieve the quality in any library, the RSKS concept is indispensable one. Ten campuses of Rashtriya Sanskrit Sansthan's helps to library employees to keep fit towards the modern technologies in order to upgrade themselves and also to serve the library users in a smartest way. By the use of this RSKS concept, one can know the methodology of using social network Medias in the library. The users and the librarian will come to know how to find the defect of using the social network media and how to overcome from the defects like lack of time by the use of social media, lack of knowledge from utilization, interest not shown in using this, unawareness of the trainings available, lack of knowledge in the use of hardware and software, etc.

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