"A Study of technology Management Issues and Challenges"

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1. Introduction:

Technology has changed our life, lifestyle and the civilization drastically and incredibly, whether finding of the wheel or chariots or the modern computer and information technology applications for all walks of our life. But the man wants to be with the same mental attitude towards the rest of the world and nourish a stagnant, not ready to change and accept change and wants to stay in the comfort zone of "no change" with the organisational environment, the people he live, the friends he meet, the place he reside and the family he is with. It is good and Nobel to be loyal and be with the family and life time commitment with his or her family members and lead a peaceful, sincere and happy family life. But it is not correct on the part of any man who wants to progress to accept changes in the working environment due to change in technology, the process of working and the people he works with. He is burdened with great sorrow, agony and aloneness if there is any change in the working parameters like techno, table and chairs, place and people he work with. He fails to see that any changed environment poses a learning environment for him and learning brings him to higher stage of knowledge and wisdom level of being in life towards greater level of progress and happiness.

But the leader's challenge is to make this change comfortable and smooth sliding to all his sub-ordinate managers – who lead the change in each department and his followers and the all workers of organization.

So a new field of study and discipline has started taking birth named as "technology management " detailing how a modern technology environment is managed and change in technology is managed in an industrial and organisational setup.

2. Introduction to research:

The subject matter of research is to conduct research on "A study of technology management issues and challenges"

as the name of the thesis itself unequivocally suggest is to find and understand and analyze the technology management , challenges and issues for the Indian industries –and arrive at meaningful interpretations of the survey ,suggestions and conclusions to improve the present way the technology is managed and new technology arrival, implementation and acceptance and complete utility to augment the customer satisfaction to improve the company's brand positioning , market and profits in any type of organization whether manufacturing or service oriented organization.

3. Research Objectives:

As the title of the research speaks out that the overall objective of the present research is to study and to find and understand and analyze the technology management, challenges and issues for the industries.

The   overall objective of the present research is to study and to find out what is happening in technology management issues in any type of business houses (service units) and service organizations with a special reference to profit generation, sustainability, growth of Indian industries to be successful in any type of world economic scenario and world economic situations and under global competitions.

4. The main objectives of study:

The specific major objectives of the research could be listed as follows:

1. To study the present level of Technology management of Indian industries.

2. To Study of the efficiency and effectiveness of technology management of the Indian service sector (survey organization – KSRTC)

3. To Study of the present level of success of new technology implementation of the Indian service sector (at KSRTC.- survey organization)

4. To Study the technology, Human resource , financial and operational issues and challenges of the technology management in Indian service organizations

5. To study any other issues of technology management, new technology implementation in any Indian service sector units which will be useful for arriving at useful and applicable suggestions and conclusions of thesis.

5. Research Hypothesis.

Null hypothesis framed for the present research is as follows:

1. There IS no proper technology management systems in Indian service industries

2. The Indian service sector units are NOT having efficient and effective technology management to face global challenges.

3. The Indian service sector units are NOT having successful implementation of Technology management systems

4. The human resource issues and challenges are NOT properly and successfully addressed by the survey units in new technology implementation process.

5. The financial issues and challenges are NOT properly and successfully addressed by the survey units in new technology implementation process.

6. The technology and operational issues and challenges are NOT properly and successfully addressed by the survey units in new technology implementation process.

6. Research methodology:

6.1 Primary and survey methods

The research has designed (above noted) null hypothesis with regard to the objectives of the research detailed above on the basis preliminary survey, discussions and interviews with controllers, depot managers, executives, managers of survey service organization selected for study i.e KSRTC.

This empirical study would be conduct a random sample survey of from the respondents who are implementing and managing technology its financial, human resource planning, training and development for technology and all operational issues of technology – old, present and planned for future and the respondents who are in operational level operating the present technology and utilizing for customer services in the survey service sector units to have a deeper understanding of the subject matter of the research.

The methodology also include besides this sample organizational survey, the secondary survey of Books, management journals, research organization records and research magazines, conference proceedings and annual reports of the technology management in service sector , transport sector in particular i.e. sample survey company – (public transport organization) with additional information from web sources.

The secondary data such as text-books, management journals – national and international, research organization records and research magazines, conference proceedings are used to understand the basic aspects of the Indian service sector's technology management issues and challenges and also review of recent research papers published addressing the same issue and subject matter of the research.

6.2 Data collection and analysis methods:

The primary data collected out of discussions , interviews and the data collected by survey would be stratified, averaged, studied and after a proper analysis through a suitable statistical test and the interpretations would be drawn

The secondary data such as text Books, national and international management journals, research organization records and research magazines, national and international conference proceedings, related web sites besides annual reports of Indian technology management in service sector units to have conceptual level understanding as well as in the implementation – realistic levels of what is happening at human resource, operational and financial management in technology implementation in the Indian industries.

The research objectives of the research and the same would be tested under statistical study using, random sampling methods, stratification techniques and suitable statistical tests, before the final conclusions drawn.

7. Significance of the study:

The study would contribute significantly in understanding the human resource, financial and operational issues and challenges of technology management scenario in Indian service sector units in particular public transport service and to understand and study the TM in KSRTC (survey organization) in Karnataka and India in general and about the human resource , operational and financial management issues and its efficiency and effectiveness levels of technology management which is very significant for the successful development of any new technology plans and technology management implementation in any industries or organizations.

The research would also try to focus on the new dimensions and emerging new technology management and technology management models of Indian service sector in India to be competitive, sustain and grow to be leader in the sector.

This study is focused is to empower our Indian service sector corporate units to become more efficient in technology management issues and handling technology management challenges to sustain and grow and contribute to the development of Indian service sector in our country which is empowered with new technology and keeping pace with changing times and customer expectation to make the lives of Indian customers more beautiful and delightful.

8. Limitations of research:

As the research and survey is limited to the analysis of Indian service sector in India with only one public service organization i.e KSRTC operating in Karnataka. As the research and survey is limited to Karnataka is the first limitation of the research. To adopt the conclusion of this research study with reference to new technology implementation and technology management related - human resource, operational and financial management issues and challenges of maintaining high level of efficiency and effectiveness of technology management (for the successful development of any new technology plans and technology management implementation in any industries or organizations.) in any other service sector units –

9. Findings, Suggestion and Conclusion

This section presents the highlights of the research and major findings, suggestions with regard to the research study of "A Study of Technology Management Issues and

Challenges" conducted at Karnataka at KSTRC as survey service sector and draw the final conclusions. This research's outcome of suggestions is recorded in this chapter which could be applied for any Indian service sector units industries in the world for successful human resource, financial and technology operational management issues and challenges.

The   overall objective of the present research is to study and to find and understand and analyze the technology management , challenges and issues for the Indian industries – and arrive at meaningful interpretations of the survey ,suggestions and conclusions to improve the   present way the technology is managed and new technology arrival, implementation and acceptance and complete utility to augment the customer satisfaction to improve the company's brand positioning , market and profits in any type of organization whether manufacturing or service oriented organization.

9.1 Major findings

Major findings and suggestions of the thesis with reference to each objective of research:

The major findings of the research with regard to each objective are detailed as follows:

(I) First objective of research:

To Study the Present Level of Technology Management of Indian Industries

Findings with regard to objective:

The research survey on the respondents coupled with discussions and interviews with the top-level executives,, the survey showed that the present level of technology management in KSRTC is fairly in good and positive state, but needs great improvement in the sense that it has to recruit an efficient team that can support the committed leaders of technology management and techno-change in this organisation who are presently doing a god job and bringing a movement in the organisation. But if it is supported by good team of software engineers, software testers and computer, network and web management experts working in a team rather than depending upon other subcontractor IT companies for support on day to day basis from outside.

This is because there is no separate IT policy and technology management department and systems for the organisation. The IT implementation is done as part of the department work rather than a specialised support services for overhaul technology change and new tech – implementation process for greater customer satisfaction.

Hypothesis -1:

Ho$_1$. There are no proper technology management systems in Indian service industries

Findings with regard to hypothesis:

The survey revealed that this Hypothesis is completely proved on the basis of overall results. There is need of separate technology management department empowered to train all employees and implement the new technology equipments for overhaul operational customer delivery services in the organisation in the survey units.

 (II) Second objective of the research findings:
To Study of the efficiency and effectiveness of technology management of the Indian service sector (survey organization – KSRTC)

Findings on the objectives:

The research survey on the respondents coupled with discussions and interviews with the top-level executives, the survey showed and revealed that there is great efficiency in the process of TM and time-bound result oriented effectiveness is lacking in the units because of lack of specialised IT service delivery departments empowered with executive powers.

4

Hypothesis -2:

Ho$_2$. The Indian service sector units are NOT having efficient and effective technology management to face global challenges.

Findings with regard to hypothesis:

The survey revealed that this Hypothesis is partially proved w.r.t to efficiency of the technology system implementation and partially disproved w.r.t to effectiveness of the technology system implementation on the basis of overall results.

 III third objective of the research findings:

To find and Study of

To Study of the present level of success of new technology implementation of the Indian service sector (at KSRTC.- survey organization)

Findings on the objectives:

The research survey on the respondents coupled with discussions and interviews with the top-level executives, the survey showed and revealed that the though a great committed effort from top-management has been put across at the helm, the complete successful implementation of new-technology environment has not been implemented because many reasons like lack of training of all the staff at gross-root level –operational level and lack of advertising and awareness programmes of the new tech-facilities of KSRTC to most of its customers. But the organisation has fairly successful in its effort and has got overwhelming support and customer satisfaction and support.

Hypothesis -3:

Ho$_3$ The Indian service sector units are NOT having successful implementation of Technology management systems

Findings with regard to hypothesis:

The survey revealed that this Hypothesis is disproved on the basis of overall results and the organisation has been fairly successful in implementation and they are positive that complete implementation will be in the offing.

IV fourth objective of the research's findings:

To Study the technology, Human resource, financial and operational issues and challenges of the technology management in Indian service organizations

Findings on the objectives:

The research survey on the respondents coupled with discussions and interviews with the top-level executives, the survey showed and revealed that the organisation has completely been successful in addressing financial and operational – implementation issues and all the challenges faced on its route to successful implementation , but has been partially been successful addressing the human resource issues to make all employees to sail in the new technology environment and techno-change in a committed and fully heartfelt consented and committed way because of heterogeneous and volume of employees from all corners of society and unions.

Hypothesis -4, 5 and 6

Ho₄   The human resource issues and challenges are NOT properly and successfully addressed by the survey units in new technology implementation process.

Findings with regard to hypothesis:

The survey revealed that this Hypothesis is completely proved on the basis of overall results. The HR issues could be properly addressed and successfully New-technology can be implemented through proper and well-planned smart training programmes which are one –two hours of duration , but efficient and effective rather than day-long training programmes for lower staff or staff going into new technology without proper training.

Ho₅ The financial issues and challenges are NOT properly and successfully addressed by the survey units in new technology implementation process.

Findings with regard to hypothesis:

The survey revealed that this Hypothesis is completely disproved on the basis of overall results. The survey units have successfully addressed financial issues and challenges of TM.

Ho₆ The technology and operational issues and challenges are NOT properly and successfully addressed by the survey units in new technology implementation process.

Findings with regard to hypothesis:

The survey revealed that this Hypothesis is completely disproved on the basis of overall results. The survey units have successfully addressed technology and operational issues and challenges of TM.

<u>V fifth objective of the research's findings:</u>

<u>To study any other issues of technology management, new technology implementation in any Indian service sector units which will be useful for arriving at useful and applicable suggestions and conclusions of thesis.</u>

Findings on the objectives:

The research survey on the respondents coupled with discussions and interviews with the top-level executives, the survey showed and revealed that that top-management committed support, well planned training programme and award, reward and incentives of successful implementation for managers and full-acceptability and committed operational work at workers level and promotion plan-linked with new technology implementation process for greater customer satisfaction

Other important findings from the statistical survey:

In the statistical survey many opinions were expressed about in the last part of questionnaire by the respondents are discussed and summarized as follows:

The different suggestions and comments from the officers of survey units their officers, managers and operational staff are summarized as follows:-

1. Feedback systems at all levels of implementation are not in place for improvement of the process or technology systems.

2. More smart and portable systems required at billing in the busses .These systems could be connected through wi-fi for better financial check and control machnisms.

3. No reward and awards for successful implementation for middle and supervisory staff and No award and reward systems for support at operational level for workers.

4. No promotions for committed work w.r.t technology implementation at workers level.

5. The training programmes not sufficient.

6.   The training programmes not effective.

7.   The involvement of representatives from all cadre of operational staff at decision process level lacking.

10. Major Suggestions with regard to the research:

The suggestions based on research findings are as follows:

1.   The research suggests that though the the present level of technology management in survey organisation is fairly in good and positive , it requires a great improvement by understanding the – opportunities for improvement (OFI's) and opportunities for innovation (OFI's) in the process of adoption of technology and technology selection and implementation process. This is possible by induction of all stake holders – selection of representatives from top-executives, managers, supervisors, depot managers, drivers, conductors and customers under a feedback and involvement in selection, adoption and implementation process from the pilot implementation to complete implementation.

2.   The research suggests that the technology implemented for example the computer terminals at ticketing counters, ticketing -/ billing machines at the hand of conductors need to changed every four years and made more handy and smart and connected through wi-fi systems and No need of each one coming to settle amounts –cash collected at   specific counters – but could deposit at any bus stands any partial amount at any time to lessen the burden of carrying the whole cash till the end of day.

3.   The research survey suggests that the survey units have to recruit an efficient team that can support the committed leaders of technology management and techno-change.

4.   The research suggests that the committed techno-leaders and change –leaders shall be supported by good team of software engineers , software testers and computer , network and web management experts working in a team and reduce the dependency on outside outsourcing companies.

5.   The research suggest a there should be clear and transpernt organisational IT policy and technology management department and systems for the organisation as IT implementation process is now part of the department work (not specialised support services handled by specialised department and expert team)

6.   The research suggests that there is need of separate technology management department empowered to train all employees and implement the new technology equipments for overhaul operational customer delivery services in the organisation in the survey units.

7.   The research suggest that though there is a committed and sincere effort from top-management, the complete successful implementation of new-technology is possible in the survey units by addressing the bottlenecks of

-     lack of training of all the staff at gross-root level –operational level and

-      lack of advertising and awareness programmes of the new tech-facilities of KSRTC to most of its customers.

8.   The research suggests that though the organisation has completely been successful in addressing financial and operational – implementation issues it has been partially successful addressing the human resource issues as it has failed to make all employees to sail in the new technology environment and techno-change in a committed way because of heterogeneous and volume of employees from all corners of society and unions. But the research suggests that all the stake holders need to be apprised that present technology change and implementation if for the good and wellbeing of all the employees and not just the management and is a must for the survival and growth of organisation.

9. The research suggest there is need of bringing a time-bound result oriented effectiveness in TM and TI (implementation) in survey units by bringing a empowered specialised IT service delivery departments empowered with executive powers.(similar to IT and cyber police stations and departments at helm with IT SP's and IT top empowered officers for independent decision making and implementations)

10. The research suggests that the HR issues can be properly addressed New-technology can be implemented smoothly by

- proper and well-planned smart training programmes which are one –two hours of duration ,

- but efficient and effective rather than day-long training programmes for lower staff or staff going into new technology without proper training .

11. The research suggest that the top-management committed support, -

- well planned training programme and

- award , reward and incentives of successful implementation for managers and

- full-acceptability and committed operational technology work at workers level and

- Promotion plan-linked with new technology implementation process for greater customer satisfaction.

The overall research suggestions show that the parameters of shows that the new efficient and effective technology management research model is

I) Customer focus
II) Best delivery systems
III) Better acceptability levels
IV) Awards and reward systems
V) Training for technology change
VI) Efficient and committed leadership for change
VII) Top-management commitment for implementation and support to succeed is an effective and efficient technology managed leader in service sector.

11. Final conclusions of the research:

The research concludes that the Indian service sector units can be better empowered and operate more efficient and effective ways for customer delivery and delight by better utility of modern information and automation technology systems to meet the changing customer requirements by adopting well-planned –futuristic smart technology selection, adoption and implementation process supported by training programmes for technology and acceptability of technology for all stake holders of organization and supported by motivation plan of certificate-award -reward and incentives for part of the quality and new-techno- movement of the organization.

Final word and scope for future research:

The future of any organisation will depend of new technology and adoption of modern-smart-technology is not an option any more to(an individual or) an organisation –but is a must for all learning organisations (individuals) who will wish survive in the competitive world and be world leaders in the field of working and delivery of services and products .

The research could be extended for other service sector areas like media, tourism, hospitality, health care, wellness etc. and also to manufacturing sectors.