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From the Editor's Desk

This is the First issue of Volume Ten of "ASM Business Review", the referred research journal of the ASM group of Institutes.

ASM Group of Institutes is committed for qualitative research in academics. And this ASM Business Review is a product of its commitment. Audyogik Shikshan Mandal has been playing a pioneering role in the field of creative education ever since its inception in 1983. With a mission "Excellence in Management Education, Training, Consultancy and Research for success", ASM is marching towards excellence having more than 75,000+ alumni working at all levels of management in all types of industries.

The ASM Business Review is a medium created by ASM to demonstrate the research skills of authors. It is a strong communication link between industry and academia and aims to work as a catalyst for knowledge sharing between various sections of society. ASM Business Review provides a platform for academic scholars and champions from industry to come together for common cause of developing innovative solutions to various problems faced by society and business entities. The present review is a medium to faculty members, research students and they like to present their research findings before the wider audience. The opportunity to publish their research results would provide ample motivation to this type of scholars. The previous issue of the Review received encouraging response from the academic and corporate community as well. Research articles accepted and printed herein are subject to objective editorial processing and are peer reviewed. ASM Business Review looks forward as a strong link and partner for society and industry to develop workable solution for day to day problems. We believe our success is a team work of various contributions to this journal. ASM BUSINESS REVIEW is always committed to excel academic research and consultancy.

Dr. Satish N. Pawar,

Editor in Chief

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Integrating higher education, business and governments in innovation and entrepreneurship

Zehetner, A.
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Introduction

In parallel to teaching and research, the third role of a university is to engage with societal stakeholders for a better future. Linking the goals of universities, businesses and governments helps solve societal problems, creates jobs, and fosters an atmosphere that is attractive for regional development, entrepreneurship, and future investment. (Bonollo et al. 2022; Nicotra et al. 2021)

These include start-up programs and initiatives, start-up management, integrating entrepreneurship into the curriculum, and building and leading sustainable partnerships between higher education institutions, businesses, and government stakeholders.

This article addresses, on the one hand, the question of how an entrepreneurial spirit can be awakened among members of a university (inside-out) and, on the other hand, how partnerships with companies, start-ups, but also the government can be made sustainable and inclusive (outside-in).

Inside-out: Increasing the entrepreneurial spirit

As an interdisciplinary university with a focus on business, engineering, information technology and medical technology, it is important for UAS Upper Austria to awaken the entrepreneurial spirit in its students and to support them in taking their first steps into entrepreneurship. Five essential aspects play a role in this:

Encouraging "out-of-the-box" thinking
A long-held criticism of universities is that they think in disciplinary silos. However, there is now a consensus that interdisciplinarity in research and application often leads to better results (Masini et al. 2022; Roper 2021) Universities should try to promote interdisciplinary thinking and action. UAS Upper Austria's degree programs are designed to be interdisciplinary, and many programs are combined from elements of different disciplines (e.g., engineering and business, innovation and technology, medical engineering and computer science, electrical engineering, and computer science). In addition, modules on social skills, creativity, applied research, and internships are mandatory in all degree programs. In this way, an attempt is made to bridge disciplinary silos in the early stages of students' academic careers.

Role-modeling and exposing students to successful businesses
Role modeling in an entrepreneurial education context means that students are exposed to successful entrepreneurs from the startup scene. The importance of role models for entrepreneurs has already been discussed in the literature (Nowinski and Haddoud 2019; Abbasianchavari and Moritz 2021). UAS Upper Austria regularly invites business leaders to give talks, workshops, and pitches, and also offers in-demand internships. This creates a low-threshold opportunity for our students to seek out their own role models and learn from them. In addition, a strong alumni network is maintained with representatives from spin-offs.

Allocating proper resources The funding of promising start-up ideas and the financial support of the first steps of young spin-offs is a particularly critical issue, as profits from the business idea are rather rare in the first years. Wemotivate our young entrepreneurs to also consider the strategic program lines of local, national and European research funding initiatives (e.g. FFG, FWF in Austria, HORIZON in Europe) in their idea generation. Often an idea can be better funded if the project applicant makes clear to which research field of a government this topic fits. Here, and also in how to formulate concrete funding applications, we support students, particularly active, within the framework of our start-up centres, located at each school. Another important point is the integration of successful alumni as sponsors and venture capitalists in the initiatives of our young entrepreneurs.

Approach	Example
Stimulate „out-of-the-box" thinking	Fostering interdisciplinary thinking and action. Bridging silos. Integrating entrepreneurship into curricula.
Role-modeling and exposing students to successful businesses	Inviting business leaders to teach classes and offer internships. Establishing and maintaining a strong alumni network including the spin-off representatives.
Allocate resources	Connecting with government programmes and initiatives.
Allow for space to try, fail and succeed	Providing Incubators, Accelerators, start-up centres. Creativity, rapid prototyping, innovation labs.
Celebrate success	Awarding innovation and successful projects. Track success of spin-offs.

Exhibit 1: Creating an entrepreneurship-friendly climate

Leaving room for trial and error, failure and success
Success in entrepreneurship happens through trial and error (Haltiwanger 2022). Young entrepreneurs learn from their mistakes and improve their business ideas as a result. We support this culture by offering hard- and software for business simulations, but also by providing low-cost start-up support as part of our Start-up centres, Incubators, and Accelerators. In their labs, students can try things out, develop rapid prototypes and measure them against reality.

Taking time to celebrate success
Unfortunately, celebrating success is often forgotten, especially in Western European cultures. The classic saying of the famous German soccer player and coach Sepp Herberger: *"After the game is before the game"* can, unfortunately, cause young entrepreneurs to burn out quickly and lose their motivation. Regular recognition events such as an innovation award, a founder award, competitions, or hackathons can go a long way. Regularly tracking and reporting on the performance of our start-ups also motivates our young entrepreneurs and encourages others to do the same (Avrahami et al. 2020; Weber 2020).

Outside-in: Continued development of strategic partnerships

An important unique selling point of UAS Upper Austria is its extensive relationships with businesses and industry. They contribute to identifying current problems and solving them together. Establishing and maintaining sustainable relationships with key partners is a high priority for UAS

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Upper Austria. To this purpose, a conceptual framework for networks between universities and companies in the

field of innovation and entrepreneurship has been applied. A model originally developed by Kotler et al. (2006) for a different purpose was adapted to map each stage of network activity and predict further steps. While the stages range from undefined to defined and aligned to integrated, the tasks to be completed range from integrating activities and processes, enabling a common culture up to a fully integrated organizational structure with combined systems, a common strategy, and commonly agreed network management.

Phases to characterize stakeholder-university partnerships

Four stages of the relationship between a university and its stakeholders can be distinguished: undefined, defined, aligned, and integrated.

In an *undefined* stage, both parties manage their projects independently without considering the interests of the other. Businesses/institutions/governments know that the university has strengths related to their problems, but they do not know how to leverage them. The universities, in contrast, do not have insight into many of the real and current problems of the companies and therefore are not able to respond to them properly. Once the relationship is *defined*, the parties understand each other's approach and take these aspects into account when defining their own strategy and applying rules to scale up and prioritize projects. However, this stage is still characterized by a lack of operationalization and manifestation in clear processes and projects. *Aligned* stakeholder-university relationships can be described by prioritizing different partners for different purposes and having clear but flexible boundaries between the parties; sometimes using each other's networks; and having planning and information meetings between the parties about how to move the relationship forward. Ultimately, an *integrated* relationship between universities and their external partners would allow unlimited access to each other's networks. The parties recommend each other, and other communities are aware of the shared network The network is maintained by both parties, and both parties benefit. This level is difficult to achieve and could only work with selected key partners.

How to reach an integrated partnership

To achieve an integrated partnership with selected stakeholders, several steps should be considered. First, activities should be integrated. This includes involving stakeholders in initiating and planning projects and setting goals. Prioritizing partnerships by thematic areas could be helpful to manage complexity. Stakeholders should also be involved in identifying the needs of each party. This includes resources, project ideas, and funding.

The relationship interface is ...	if ...
Undefined	both parties manage their projects independently and without considering others' interest.
Defined	The parties understand each other's approach and consider these aspects when defining their own strategy and when applying rules to expand and prioritize projects.
Aligned	Priorities are set with different partners for different purposes, and the parties have clear but flexible boundaries; the other parties' networks are used sometimes; there are planning and information meetings between the parties on how to further develop the relationship.
Integrated	Both parties have unlimited access to the others' networks; they recommend each other, external partners are aware of the joint network; the network is nurtured by both parties and both parties benefit from it.

Exhibit 2: Stages of University-Stakeholder relationships

Second, processes and systems should be integrated. This includes compatible systems and commercial arrangements, aligning software tools and interfaces, using collaborative tools to share information, and opening existing networks to each other's partners. Systems integration also includes agreeing on common benchmarks for measuring progress and success.

Third, a very important step is working toward a common culture. This includes, for example, a shared vision and an emphasis on shared responsibility, a willingness to share know-how, contacts, etc. But also finding common gains, making them public, and fostering the emotional connection of the members of the respective stakeholder groups are important sustenance for a common culture.

Fourth, the integration of organizational structures should follow. The implementation of common strategies (thematically, geographically, or along other dimensions) is important. For this purpose, it makes sense to assign network management to a jointly agreed manager. This pools responsibility and supports the desired integrative approach.

Conclusions: breaking down barriers, balancing interests, and working together for shared success.

Universities have a notorious reputation for not always adapting easily to changing circumstances. Adaptation and transformation, especially under the conditions of a digital economy, is not always easy (Kholiavko et al. 2022; Benavides et al. 2020). However, this also has its benefits, as it allows for a university to work independently and autonomously on the longer-term development of society. However, this does not preclude the fact that, despite their autonomy, universities should also respond to current issues and create the appropriate conditions for doing so. Side note: Universities of Applied Sciences were founded in many European countries precisely for this purpose.

If barriers between universities and their stakeholders are to be reduced, both in terms of fostering an entrepreneurial spirit among students and in terms of maintaining a good network with partners, then interdisciplinary thinking is needed above all. Academic silos have little place in a networked, interdisciplinary world. Jacobs (2014) stated this very clearly: *„Disciplines are viewed as the wrong units to tackle the vexing social problems of the day, most of which are multifaceted and require insights from diverse areas of expertise. Increasingly, the case is being made for the university as an engine of economic growth; again, disciplines are seen as limiting rather than maximizing this potential.“*

A reasonable balance between serving mainstream topics (such as digitization) and research on issues that may be latent but have not yet manifested themselves in the economy is also an important challenge for universities.

Intensive collaboration also with local, national, and international government agencies, non-university research institutions, and think tanks plays an important role in mutual understanding.

And ultimately, it is also necessary to balance speed in some areas, i.e. sometimes to become faster as a university, and on the other hand as a company to consider thoroughness and the associated time requirements for good research.

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Methods for Managing Change in Medium Size Business Organizations of Small Cities

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Abstract

There are so many changes taking place within the organization and outside the organization. Situations outside the business organization are not within the control of any individual or management but it has can be cope up skillfully provided the necessary changes are introduced well in time. It has been observed that every institution wish to incorporate the required changes but they face reluctance from the employees working in the organization. Employees feel comfort in the current situation or they are apprehensive about the outcome of changes going to be introduced. There is also fear of discomfort or loss associated with the changes. This research work has been executed to identify the appropriate and significant methods to overcome the resistance towards change. Employees in small cities have different approach towards work. Three methods have been critically studied namely standard operating procedure (SOP), dynamic environment and financial incentives.

Key words: business organization, change, SOP, dynamic environment and financial incentives

Introduction

Change is something that is continuous but most of the people do not accepted willingly and show reluctance in accepting and appreciating the change. People working in mid size business organization at small cities do feel skeptic about the changes. It has been found that there are few ways in which changes can be introduced in hassle free manner.

Once it is realized that change is necessary to be initiated corporation should be sought from different stake holders for effective implementation. Objective and outcome of changes need to

be conveyed with clarity and precision. (Stanleigh M., 2008)[1]

Managing change is essential as it developed balance between the environment and the business practices. The change may be small one or the big one like capital restructuring or mechanization. (Dunne M.J., 2013)[2]

Effective and assertive leadership is required for initiating any change in the organization. Leader must be focused, determined, creative and visionary in order to foresee the situation and introduce necessary changes to shape organization in such a way that it's objective can be attained. (Atkinson P. and Mackenzie R., 2015)[3]

It is essential to have positive outlook and perspective towards work to be happy while working and that will enable the workers to understand the emerging situations and mould accordingly there by the change will not be a problem. (Allen M. and McCarthy P., 2016)[4]

The use of proper motivation, encouragement and aligning change with the vision and mission of the organization can be handy for implementing any change. Besides that management must practice regular communication of the strategy with the stake holders in order to get there cooperation while implementation of any change. (Phillips J, Klein JD., 2023)[5]

Objective

To know the resistance to change in medium size business organizations of small cities having different modus operandi.

Hypothesis

H1. There is no significant resistance to change in medium size business organizations having SOP.

H2. There is no significant resistance to change in medium size business organizations having dynamic environment.

H3. There is no significant resistance to change in medium size business organizations offering frequent financial incentives.

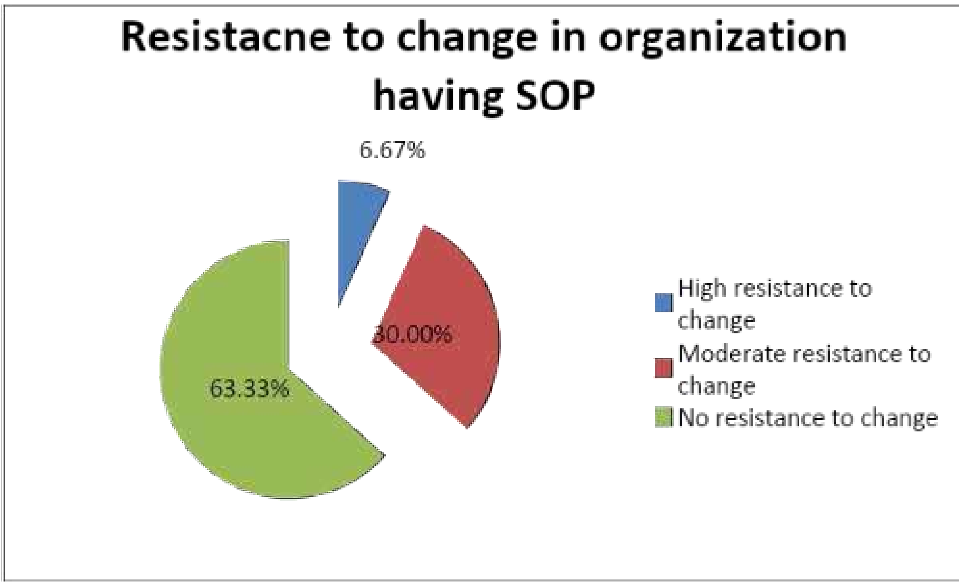
Research Analysis

Three mid size business institutions having standard operating procedure were selected from Udaipur city. 20 employees of such organization were interviewed minutely. They were asked different questions related to change and their resistance level was classified in three groups namely high resistance group, moderate resistance group and no resistance group. It was found that organization which is having standard operating procedure its 66.33% employees have no resistance to change. They accept, appreciate and act willingly for any changes. Only 30% employees of such organization have moderate resistance to change while merely 6.67% have high resistance to change.

Table 1

Resistance to change in organization having SOP			
Level of resistance	No. of employees	Weight	Weighted Score
High resistance to change	4	2	8
Moderate resistance to change	18	1	18
No resistance to change	38	0	0
Total	60		26

Chart 1

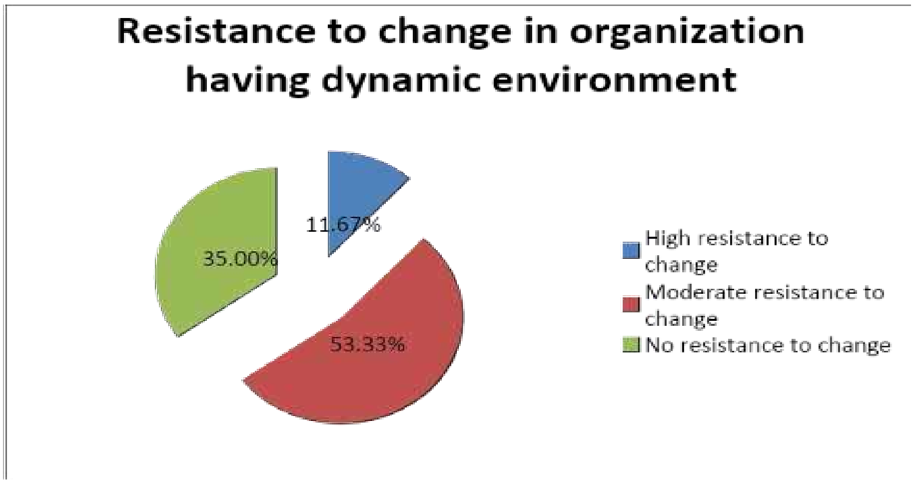


As per total wegihted score resistance to change in organization having SOP is 21.67%. For measuring its significance T test was done. As per the T test calculated value of T (1.12) is less than the table value (1.96) which indicates there is no significant resistance to change in organizations having standard operating process. Hence first hypothesis is accepted.

Table 2

Resistance to change in organization having dynamic environment			
Level of resistance	No. of employees	Weight	Weighted Score
High resistance to change	7	2	14
Moderate resistance to change	32	1	32
No resistance to change	21	0	0
Total	60		46

Chart 2



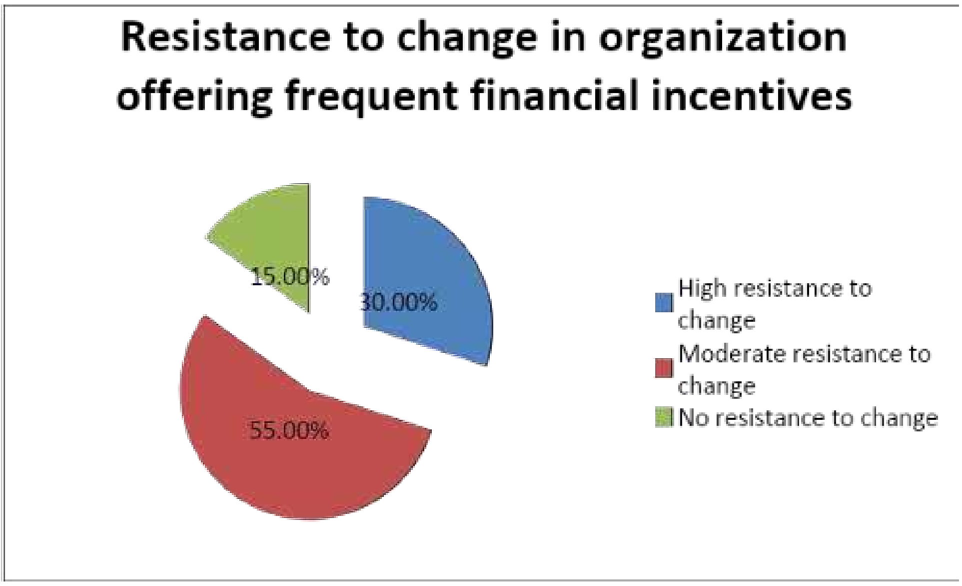
Similarly 3 other small business organizations of Udaipur were identified which were having very dynamic environment and their 20 employees were also interviewed thoroughly. It was found that organization which is having dynamic environment; its 35% employees have no resistance to change. They accept, appreciate and act willingly for any changes. 53.33% employees of such organization have moderate resistance to change while merely 11.67% have high resistance to change.

As per total wegihted score resistance to change in organization having dynamic environment is 38.33%. For measuring its significance T test was done. As per the T test calculated value of T (1.43) is less than the table value (1.96) which indicates there is no significant resistance to change in organizations having dynamic environment. Hence second hypothesis is accepted.

Table 3

Resistance to change in organization offering frequent financial incentives			
Level of resistance	No. of employees	Weight	Weighted Score
High resistance to change	18	2	36
Moderate resistance to change	33	1	33
No resistance to change	9	0	0
Total	60		69

Chart 3



Further 3 more small business organizations of Udaipur were identified which were offering frequent financial incentives and their 20 employees were also interviewed thoroughly. It was found that organizations which are offering frequent financial incentives; their 15% employees have no resistance to change. 55% employees of such organization have moderate resistance to change while 30% have high resistance to change.

As per total wegihted score resistance to change in organization offering frequent financial incentives is 57.50%. As per the T test calculated value of T (2.07) is more than the table value (1.96) which indicates there is significant resistance to change in organizations offering frequent financial incentives. Hence third hypothesis is rejected.

Conclusion

Research has shown that medium business organizations which have standard and well defined operating procedure and instructions that describes the step-by-step process that must be taken to properly perform any task; people have absolute clarity and understanding of the purpose. They are more committed and have professional approach towards the work and fellow employees

consequently they do not resist to change and their resistance level is very low.

Medium business organizations in small cities offering financial incentives alone; is not going to provide a fine long lasting solution of the problems. It is wasted many times because financial incentives can't be offered with every change. There are financial limitations and people do not get convinced by additional money being offered to them every time. It has been construed that having standard operating procedure is the best pathway of introducing and managing changes within the medium size business organizations of small cities on sustainable basis.

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THE NEW EDUCATION POLICY: A PARADIGM SHIFT IN MANAGEMENT TEACHING PRACTICES

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ABSTRACT

The education system is the backbone of the development of any country and the policy for the education system matters a lot. Every few decades, education policies are typically updated. In the wake of the issues brought on by the Covid-19 pandemic, the Government of India's National Education Policy (NEP 2020) was a welcome change and a piece of fresh news. It comes back after a gap of almost 3 decades with major changes. The NEP 2020 news came as a complete surprise for many. It is hailed as a step toward a more comprehensive, broad and futuristic education system that is designed to suit the needs of the current century's management educational needs in line with the Goals of Sustainable Development. The current paper aims to understand the impact of the New Education Policy on the teaching method of the faculties and teachers of management.

Keywords- New Education Policy, Teaching practices, Management Education, Digital Teaching-

Learning Practices.

1. INTRODUCTION

Many people believe that the Indian educational system is outdated because its tests and scoring system, encourage ineffective learning techniques that focus on memorization and repetition with little to no interest in real-world applicability (https://en,.wikipedia.org/wiki Education_in_India). The National Education Policy 2020 (NEP), unveiled by the Ministry of Human Resource Development, aims to update the nation's current education policy, which has been in place for 34 years in both the K–12 and higher education sectors. The new policy takes a more pragmatic approach and is focusing more on students' creativity and also on personality development instead of expecting students to score high marks.

Every few decades, education policies are typically updated. The first policy came in 1968 promoted by the Indian Government Prime Minister Indira Gandhi, the second policy came in 1986 under the Primeministership of Rajiv Gandhi and the third policy came in 2020 promoted by Prime Minister Narendra Modi.

According to Aithal, P. S. and Aithal, S. (2019, pp1-35) The Government of India (GOI) has created the National Policy on Education to promote education for individuals of all socioeconomic levels and to include commoners and ordinary people in society. This strategy covers a wider range of educational settings, including both rural and urban settings, from literacy levels to focused specialization. Against this backdrop, an attempt has been made in this paper to:

- To describe the historical evolution of education policy
- To elaborate on the glimpses of new education policy
- To describe the impact of the new education policy on the teaching method of the management faculties

2. Indian Education Policies' Historical Evolution

The Government of India experienced various difficulties after gaining independence in 1947, including illiteracy. The GOI developed and sponsored a variety of projects, policies, and rules to address the issues of illiteracy. Maulana Abul Kalam Azad was the first education minister of India who proposed a uniform education policy all over the India through Central Government. Various education commissions were formed to modernize the entire education system in the year between 1948-1956, namely University Education Commission (1948–1949), Secondary Education Commission (19521953), Kothari Commission (1964–1966), and the University Grants Commission (November 1956).

To promote science education the initiative was taken by Pt. Jawaharlal Nehru in form of a Science Policy Resolution. He also supports the establishment of IIT (Indian Institute of Technology).

The NCERT was formed by Union Government in 1961 as an autonomous body which is one of the governing body which suggest and help the government in making education policies to regulate the education system.

2.1 FIRST NATIONAL POLICY ON EDUCATION, 1968

On the suggestion of the Kothari Commission (1964-1966), under the prime ministership of Indira Gandhi, declared the first New Education Policy in 1968. This policy provide equal opportunity for education for the people living in urban and rural areas which were possible for the overall development of the nation. For that this policy is also recognized as "radical reform". Although, the selection of the Hindi language was considered debatable. This policy mainly stressed learning and using Hindi as our national language and focused on the Sanskrit language to preserve our ancient teaching language. Moreover, the scent of the policy is to promote physical education.

2.2 SECOND NATIONAL POLICY ON EDUCATION, 1986

To promote education in all economic categories, former Prime Minister Rajiv Gandhi launched the second education policy in the year 1986. The policy is also called "Special Emphasis on the Elimination of Inequalities and to Equalise the Educational Opportunity". This policy is not biased on any ground such as caste, gender, and status in society. For the enhancement of social integrity, this policy provides various scholarships, and allowances to promote adult education (https://www.education.gov.in/sites/upload_files/mhrd/files/upload_document/npe.pdf)

To promote primary education this policy is also called a "child-centered approach" and due to the result a great change in the form of "Operation Blackboard" was achieved. The main aim behind the policy is to open primary schools throughout the country. The initiative taken under this policy is to expand the open and distance education system (IGNOU). As per Kaur, S. (2020, pp-206-219) a comparative study has been done to focus on compulsory primary education for all.

The policy is also based on Mahatma Gandhi's principle which is to promote the overall development of rural people at the bottom level.

2.3 SECOND NATIONAL POLICY ON EDUCATION IN1992 AND 2005 (REVISIONS)

Former Prime Minister P V Narsimha Rao (1992) and Manmohan Singh, revised the existing education policy and introduced Common Entrance Examination and "Common Minimum Program". Under the National Education Policy, of 1986 the Program of Action 1992 planned to conduct all India-level entrance tests for admission in vocational and technical training.

2.4 THIRD NATIONAL POLICY ON EDUCATION 2020

A National Education Policy (NEP), 2020 is an initiative of the Ministry of Human Resource Development of 2019. This policy includes several ideas of stakeholders. As per Aithal, P. S. and Aithal, S. (2020, pp-283-325)this policy is based on the concept of curriculum reduction to enhance innovative, creative and practical based learning. As per a news article published in the Times of India (2019), 'India beats China in Schools but Lags in Education' the suggestion of NITI Aayog, the education system should be transformed in terms of the Do It Yourself concept. This is the first policy that stressed modification in the content of the curriculum which means a transformation of learning

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from theoretical to practical. In this policy, the major amendments in the pedagogy structure are the 5+3+3+4 system from the 10+2+3 system. The aim of this policy is to develop cognitive thinking among students.

The policy has been approved by the cabinet on July 29, 2020, which helps to bring changes to the existing education policy.

3. IMPACT ON TEACHERS AND TEACHING PRACTICES:

"13% of secondary school teachers in India are not professionally skilled – as per KPMG's report". Aligning with the NEP, the Government of India tries to develop teachers with varied skills and new teaching pedagogies. The teacher will get the following qualities from NEP.

(Source: www.creatrixcampus.com)

- Professional standard of teaching
- Clear-cut responsibilities and specific roles
- Developing monitoring abilities
- Focus on current-era teaching skills
- Unbiased recruitment system for good quality teachers
- Teachers no more are teachers but also acts as a facilitator or mentor to guide their students at the utmost level in all directions.

4. NEP 2020 AS A SUPPORTER OF MANAGEMENT TEACHERS

For running a perfect education system, a teacher plays an important role, and special characteristics are required in a teacher to adopt NEP. According to Aithal, P. S. and Aithal, S. (2020, pp-19-41)for effective implementation, teachers are considered a fundamental resource. As per National Education Policy (2019, p -213), a teacher is also considered a most respectful and vital member of this system as they are the ones who are solely responsible for moulding the future of students.

Teachers should not stick to teaching but should also contribute to research, writing books, curriculum designing, innovating teaching-learning techniques, mentoring etc. Hence NEP 2020 has empowered the teachers in terms of respect and dignity. NEP 2020 focused on practical based learning. In the case of management teaching and learning where teachers are more concerned with practical teaching methods such as role play, simulation, case study (real-time problems) etc.

Management education contributes to the growth of the Indian economy. Management education affects all business sectors. Four years of bachelor's degree and MBA in various domains generate more responsibilities for management teachers. Being on time i.e. punctuality is a quality that might be regarded as a necessity for anyone, regardless of occupation. Teachers in particular, because it is associated with the future careers of business leaders. So teachers once in this profession must keep a schedule for all actions both inside and outside the system to ensure smooth operation.

Every professional must possess the quality of upholding professional ethics. Ethics are essential in everyone's life. Teachers serve as role models for their students, who heavily mimic them throughout their lives. Thus, even in their daily lives, teachers must uphold the decorum that is required of them. Indeed, many people do not uphold ethics in their profession which may sometimes lead to issues in society.

NPST(National Professional Standard for Teachers) helps to bring quality management teachers so that they will able to develop quality corporate leaders.

Knowledge and understanding are mounting with time, especially with new ideas and inventions. Another quality required for a teacher to succeed in their profession is a passion for information, knowledge and constant learning. As we can see, learning is an ongoing process that does not cease with studentship because knowledge knows no bounds. If a teacher feels they no longer possess the necessary credentials after completing their education, then such a teacher can't be a good quality

teacher as he/she is just earning his/her livelihood and do not care about the learning of their students.

It is difficult for a student to gain knowledge and information without a teacher, irrespective of whether it is available in books. So the purpose of a student is to come to schools and colleges to attain knowledge and without a teacher it is impossible. A teacher needs to be an effective conversationalist both verbally and in writing. Many times, students struggle to articulate their questions or concerns in class, when a teacher should step in to bring up each student's issues or concerns and aid him in grasping the subject in simple terms. A teacher should have excellent verbal and nonverbal communication skills.

Another crucial quality of the perfect teacher is that they listen attentively to their students. For pupils to feel comfortable approaching their teacher with inquiries or disclosing issues or deficiencies, the teacher must enjoy their interaction. Students' confidence grows as a result of this listening, which ultimately results in successful learning.

Empathy-based student engagement is regarded as another essential quality for a successful teacher. Students frequently grow bored in class or feel bored while listening to teachers' discussions. Being funny and coming up with engaging lectures is a sign of successful teaching. Treating each kid as an individual and showing empathy by being aware of what may be going on in their lives will increase student involvement. It creates a more effective connection between a teacher and students.

The fulfillment of the mission of education depends on everyone's participation. Because teaching is a team effort, the ideal teacher emphasizes teamwork.

A competent teacher must possess the ability to teach innovatively to compete with the real world as described in NEP 2020. To strengthen practical learning and to develop problem-solving skills, for this it is guided in NEP to reduce curriculum.More students may enroll in educational programs if teachers use instructional strategies such as experiential learning, and arts and sports integration.

In the upbringing of children and supporting them mentally, elder family members in a family played an important role. Now a days families were becoming small and nuclear too, where parents devote less time to their kids due to the have professional and personal responsibilities. Because of this children suffered from loneliness and were deprived of the love, affection, and company of their parents.Most students attend school with emotional burdens so it becomes difficult for teachers to teach students. So there is an immense need is that a teacher should act as a mentor and facilitator for students

5. CONCLUSION

This paper concludes with the historical record of the National Education Policy which shows that the method of teaching and curriculum design is based on theoretical aspects. The NEP 2020, emphasizes practical and experiential learning along with management teachers' development aligned with the demand of the policy. Well-trained teachers with digital and practical based teaching and learning methods are enough able to develop great corporate leaders for the future. The major concern of this policy is to develop well-acquainted management teachers with innovative teaching techniques as well as emotionally attached to students as a mentor and a facilitator.

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Conversion of an under privileged village to a model sustainable privileged village: A Case Study approach on Ralegan Siddhi, Maharashtra.

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Abstract

This paper highlights and lime-lights an intensive small-scale survey, on Ralegan Siddhi, a village in Maharashtra, with the primary focus on the transition from an under privileged to one of the most privileged and developed villages in Maharashtra. This small-scale case studies present one of the relevant contractual interrelationships which are important not merely for settling pedantic debates on the dominant mode of production, but also helps in restructuring agrarian policy for the peasantry both economic and political. The study also adds an in-depth research study on the lacunas that are prevailing in different kinds of approaches formulated by the Government of Maharashtra that are not being implemented in the villages.

Background

India is a country that has agriculture as its root occupation, especially, the villages. There is a bifurcation of lands in terms of occupation, resources, and privileges. This bifurcation is highlighted by the two most popular terms, “Urban” and “Rural”. Rural area is always termed as an underdeveloped area of the country. Where in people are primarily engaged in agriculture and allied occupations such as farming of crops, poultry animal husbandry etc. Rural areas are characterized by a non-urban lifestyle, occupational structure, social organization, and settlement patterns. Rural area remains backward in terms of access to basic amenities, embracing new products and technologies and have lower standard of living.

Ralegan siddhi is one of the developed villages in Maharashtra which is a great example of a developed rural area with great agricultural and animal husbandry strength. The all definition for rural area fails in front of Ralegan siddhi as it showcases the exponential character of a developed village this is what makes them different. This characteristic encouraged us to take a report on Ralegan siddhi.

Aim and Objectives

The aim of the study is to understand the development of the village been governed in Ralegan Siddhi to enable sustainable agriculture and hence sustainable development of the community.

Specific objectives:

1· To examine the current status of the implementation of the various important schemes of the Government of India.

2 ·Explore how different policies and practices support agriculture and sustainable development in the village.

3 ·To identify the recent threats and barriers to farmers in governance and analyze its impact on agriculture.

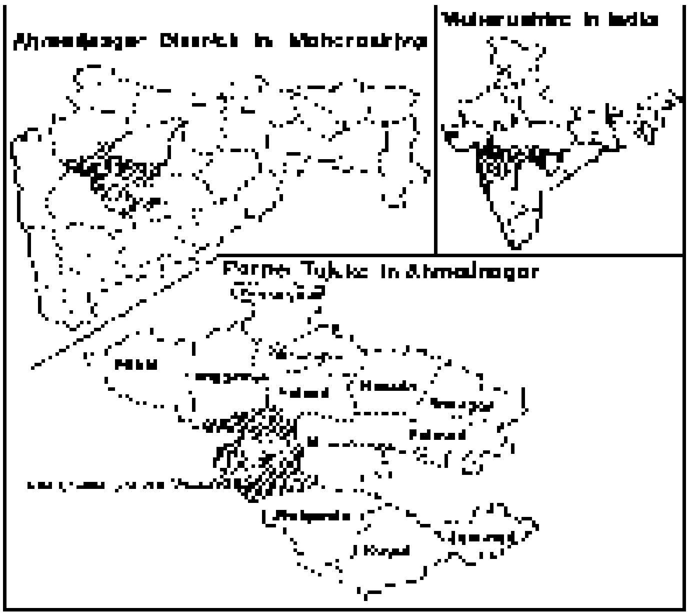
Methodology

The methodology that best suited to study the above objectives is the case study method for gathering primary data along with the observation method to get an in-depth visual finding. An empirical field study in Ralegan Siddhi and a literature review of the same, helped to understand the historical background about study area, while the field visit helped understand the existing schemes governance practices in study area. During the field visit, clustered were created to base on the geography and availability of the people, who could provide us with the relevant information. Several related stakeholders were interviewed using semi-structured questionnaire as the main research instrument and observations were made on the schemes and other scenario, issues, and interventions. The conditions were further scrutinized on the ground level. The semi-structured questionnaire was prepared with aim to answer the specific objectives stated in the questioner. The primary informants were member of Gram Panchayat and local people. Interviewed stakeholders were selected with aim to get more reliable and correct and firsthand information.

Ralegan Siddhi

Ralegan Siddhi is a small village in Parner taluka of Ahmednagar District, Maharashtra state in western India. The village has an area of 982.31 ha (1991).

Figure 1: Location of Ralegan Siddhi in Maharashtra, India (source FAO)



The village has a total geographical area of over 980 ha, over 300 ha is not available for cultivation (about 194 ha is under forest cover). The village is fenced by small hills, 30-35m in height on the northeast and southern sides (CSE, 1991). The undulating landscape, together with poor soil quality and depth, prevents water from percolating during the rains. The soil depth of 70 percent of the land is shallow; the maximum depth is only 45cm. Before 1975, most of the rainwater was wasted owing to water runoff, which also led to loss of valuable topsoil.

Historical overview of Ralegan Siddhi pre-reformation

Prior to 1975, Ralegan Siddhi was a village like any other villages in India with problems of acute poverty, hardship, high illiteracy rate, high infant mortality rate. Major ones were alcohol addiction in the community, improper environment for health, lack of basic services like food, water etc. To add more to this, around 70% of households were living under poverty due to uncertain rain patterns, regular drought situations, lack of arrangements for rain water storage, low soil productivity. There was a crunch in water resources in agricultural activities. "The water table was at a depth of 20m and during summers, many wells in the village used to be dry. People of the Ralegan Siddhi used to bring drinking water from neighboring villages. Uneven landscape and stiff slopes, together with poor vegetation cover resulted in high rate of surface runoff and washed away fertile topsoil. Hardly 20 ha of village land could be irrigated with then available water. Ralegan Siddhi was not even able to fulfill 30 percent of its food requirements and one-third of the households used to miss their meals every alternate day". To fulfill basic food needs of family, poor farmers started borrowing money and grains from moneylenders with promise of returning it back in particular time with interest. However, the economic situation of the farmers was so much deteriorating that were not been able to pay back the loans taken from the local financers and money lenders. As a result, the authority of lands went in the hands of handful greedy owners. Some villagers had left the village and moved to bigger cities like Pune, Mumbai, and Ahmednagar for work to support their families' basic needs, and some villagers had started working outside village in stone quarry and participated in drought relief work under Employment Guarantee Scheme (EGS). But jobs through EGS were temporary and did not pay much. Villagers by then realized that jobs outside the village would not solve their problem permanently. This economic crisis compelled the poor farmers to adopt anti-social occupations like started liquor business. His economic growth and better life style along with flourishing success business attracted many other villagers into the liquor business. This resulted in opening of around 40 liquor shops were opened in the village. To add-on this recurring drought and increased alcoholism in village took many villagers into state of indebtedness and extreme poverty and resulted in disturbing village's sociocultural values. Street fight, theft, rowdiness, domestic violence became very common in the village and the name of Ralegan Siddhi came up on crime record of police. No hospital was there in village or in its close vicinity. Villagers with their limited knowledge on hygiene and health were easily exposing themselves to life threating diseases. There was just one district council primary school up to grade 4 and only 10% of villagers attended school on regular basis (Pangare and Pangare, 1992).

In 1975 with two objectives i.e., to reduces poverty and extreme water resources problem, government took initiative and granted fund for the construction of percolation tank with a water storage capacity of 114.2 lakh cubic feet. This initiative paved the way for temporary solution but could not resolve the problem on the root level.

The man who could really sense the problem and firmly work on the solving the issues of Ralegan Siddhi was Anna Hazare. He came back to the village in 1975 after 15 years of patriotic service in the army. After analyzing the situation of Ralegan Siddhi, Anna Hazare concluded that water scarcity in the area was the main root cause behind deteriorated condition of the village and the villagers.

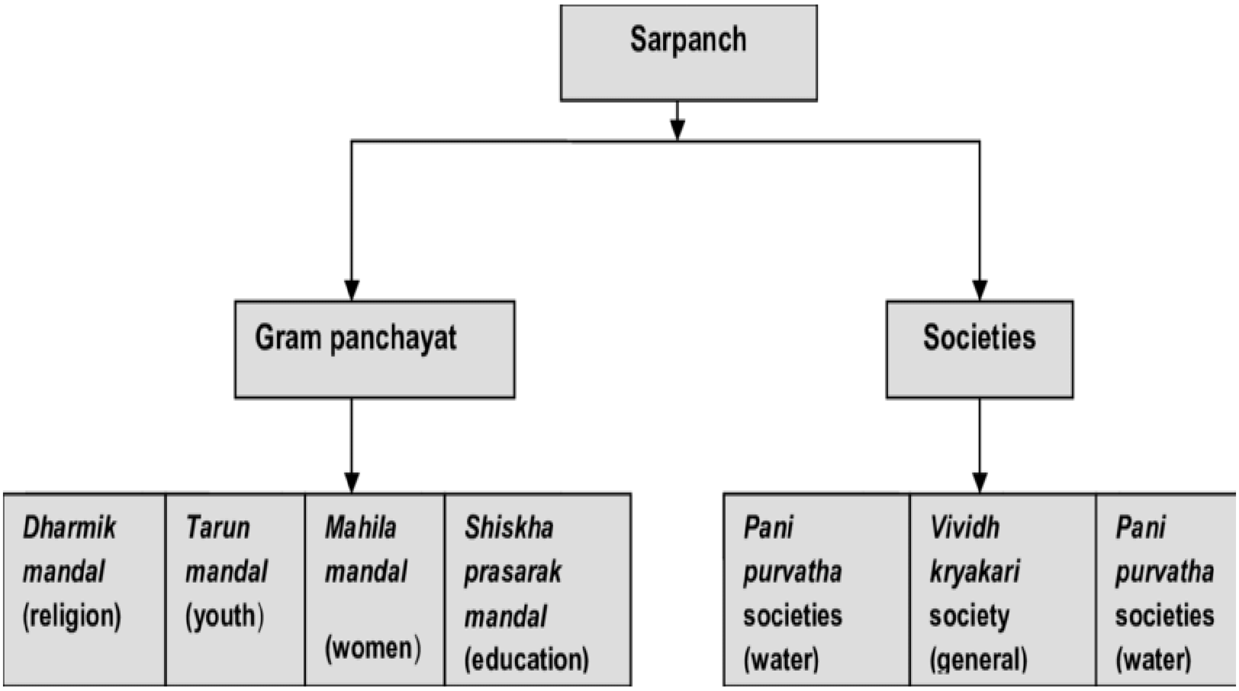
Ralegan Siddhi stepped forward for Reformation

The villagers did not want to contribute in any form for the upliftment of the village. They have notion that this is the responsibility of the government to take initiatives and investments for the village. Anna Hazare understood the situation and adopted Participatory strategy to involve villagers in the improvement activities of the village. As Indians are very religious at heart, he asked villagers to contribute to rebuild the village's very old temple and for this work he himself contributed all his saving of Rs. 22,0002. Later Anna started guiding this youth team (tarun mandal) for many progressive activities for the village and he also took important steps to control the habits and practices which were disturbing the sociocultural ethos of the village. After studying the situation, he recognized that liquor business started in village due to lack of alternative income generating opportunities. So, he started counselling about the ill effects of alcoholism and influenced many people in short time to shut down around 30 liquor shops and made liquor business illegal. This initiative gave a hope to all the people in the villages and was the first step of Anna and team towards creating their dream village. With the help of various central and state rural development programs for poor, Anna tried to provide employment for the villagers but all those were temporary opportunities. Villagers' interest and expertise in the agricultural sector caught Anna's attention and he started thinking on the barriers to sustainable agriculture such as water scarcity and recurrent drought. To overcome these barriers, at the first stage he adopted Vilasrao Salunke's very simple Pani Panchayat model of 'Pani Adawa, Pani Jarawa' (rainwater preservation) and suggested to construct the nalla bunds (open drains) to control the surface runoff. The prime objective of this mission was to enable villagers get at least two crops in a year, in a situation where they could hardly manage one crop. To reduce the construction cost, Anna influenced the villagers to provide free labor (under Shramdan) for the construction of the six nalla bunds.

Role of Panchayat

Gram Sabha is a playing a crucial role in formulation, implementation, and evaluation of every policy and scheme approved by the government for the villages upliftment. The gram panchayat undertakes all governmental schemes approved for the village. Raut Lakshman states that, before the reforms ushered in by Anna Hazare, 'the main motivation in contesting the gram panchayat elections was to capture power for vested interests. While the gram panchayat elections were meant to usher in a democratic form of governance, power was ultimately wrested based on muscle and money power.' Total of 14 committees were established, to focus key issues of water, irrigation, education, rations, women, youth, and religion. These ensure the smooth functioning of various development projects undertaken by the village and ensure full participation by villagers. One person from each household is a member of the gram Sabha. Figure 1 shows the administrative structure of Ralegan Siddhi: a collective process. All the societies are registered with their own set of rules and functioning, but are answerable to the gram Sabha. The village is crime-free and the villagers themselves settle disputes amicably.

Figure 1: Ralegan Siddhi administrative structure



Agri-Business

With the betterment of water resources, new avenues of economic upliftment were created like dairy industry, poultry, and indoor goat farming. Milk distribution capacity per day increased from 400 lit. to 5000 lit. The village fetches an amount of 1 to 1.25 lakhs of income per day. Also the cow dung proved to be a useful and good quality manure in increasing agricultural production. The farmers in the village have started Sant Yadav Baba Co-op. Union to collect & send the milk out of village. Today this institute has its own well-furnished and computerized office. The villagers started Grain Bank to supply grains to the poor and needy people. The farmers who produced excess grains, donated it to the Grain Bank. This solved the problem of livelihood of the poor people of the village.

Anna Hazare encouraged villagers to sell low-yield milch cattle and buy high-yield breeds of cows and buffaloes. He also suggested to adopt different modern breeding techniques like artificial insemination and availed the presence of a veterinary doctor in the village. The village currently owns 627 milch animals, 155 bullock pairs and 366 sheep and goats (FRCH and CMDR, 2002). The society assures livelihoods to 225 families.

Schemes and Funding launched for the development in Ralegan siddhi

One of the most remarkable features of this success story is that grants or donations, especially from national and international organizations, have been discouraged, based on the premise that outside aid creates dependence on 'free' wealth and destroys the working and thinking capacity of the individual. This is not to undermine voluntary contributions by national NGOs towards Ralegan's development. As already noted, the Tata Dorabjee Trust and CRS were particularly active during the drought of 1972 and undertook drought relief work worth Rs. 300,000 and Rs. 500,000, respectively. However, after the arrival of Anna Hazare in 1975, in many cases, loans taken from NGOs have been returned.

Most of the funding has come through various government schemes (central and state) and bank loans (Table-1).

Table-1: Flow of funds to Ralegan Siddhi for development, 1975-1986

Source	Activities	Amount invested (Rs. *lakh*)	Years of investment
Government of Maharashtra	Under IRDP, NREP, soil conservation, social forestry, water supply scheme, high school building, scheduled caste housing, hostel building, training centre, collective well, library, PHC, well repair, cattle supply, electric motor, pipeline, tube wells, poultry scheme, agricultural equipment, construction of percolation tank, *nalla* bunding, land development, etc.	47.36	1975-1987
Grants of *Urja Gram*	Solar and biogas systems	6.699	1988-1989
Grants from Agricultural Department	Drip irrigation, special caste programme, equipment distribution, agricultural equipment and distribution of insecticides	7.824	1980-1997
Bank of Maharashtra	Tractor, *gobar* gas, electric motor, pipeline, poultry development, dairy development, carts, lift irrigation scheme, goats, cattle and bullocks, crop loans, collective well, etc.	40.80	1980-1986
Ahmadnagar Sahakari Bank		1.70	1980-1986
Voluntary organisations	Cattle food, *nalla* bunding, well repairs, *gobar* gas plants, windmill, nursery, bore well and many others	10.07	1975-1976 to 1985-1986
Villagers' shramdaan (including expenditure borne by villagers)	Renovation of the high school, PHC for animals, hostel construction, utensils, etc., Krishna water supply, collective well, *dalit basti* development, nursery building and many more	13.42	1976-1986
Anna Hazare's contribution	High school construction, temple construction, land for hostel, village development, etc.	0.87	1971-1986
Total		**128.743**	

Source: FRCH and CMDR (2002); Pangare and Pangare (1992).

Anna Hazare ensured that these schemes, which often are poorly implemented, underutilized or fail to reach the target group, were used to the fullest extent to aid the various development works in the village .

How Ralegan siddhi is different from other villages

The emergence of Ralegan Siddhi as one of the developed village in Maharashtra, presents some unique characteristics that could be adopted by other villages. It also paved the way for the initiation of 'model watersheds' across the country by the Indian Council of Agricultural Research (ICAR) under the Operation Research Programme during the 1980s. Subsequently, the National Watershed Development Programme for Rainfed Areas (NWDPRA) in 1990 under the Ministry of Agriculture was initiated. Madhya Pradesh's Watershed Management Mission was established in 1995 to replicate the successes of Ralegan Siddhi's watershed development and continues to form the cornerstone of rural development programs . Ralegan Siddhi's success led the government of Maharashtra to implement the Adarsh Gaon Yojana (Ideal Village program), an initiative to replicate the Ralegan Siddhi model in 300 villages of Maharashtra to overcome frequent drought through natural resource management by village communities.

As in Ralegan, alcoholism was a serious concern. Crime and conflict were common. Social indicators such as health and education were poor. To combat these issues, initiatives like three watersheds were built at a cost of Rs. 42 lakhs spent by the government; 17 lakh was provided as shramdan. Tree plantation in lakhs were encouraged, ten lakh trees were planted, of which 95 percent were used for providing green fodder. The Gram Sabha banned the digging of tube-wells, cultivation of water-intensive crops and field grazing. Additional water led to higher productivity and enabled cultivation of cash crops, such as onions and potatoes.

Findings

The study of Ralegan Siddhi reveals that different policies that are formulated by the governments must be cautiously and rigorously implemented with participatory approach. Village is very much -independent in all respects. Villagers' awareness and wise planning along with Ralegan's watershed development program helped them overcome water scarcity in the village. Government's direct interaction with the immerging problems of Ralegan is the need of the hour.

As they have futuristic view for there village, they are more concerned about there education system, in the village there are 1 private school and 1 public school and both the schools are state board but villagers need CBSE pattern school but as per the government clause if they want CBSE pattern in their village there must be a strength of 40 students in each section they can't open CBSE school due to the shortage of students, and some people can't afford CBSE school. For development of there agriculture sector the agriculturist is not available in a physical form. They are only available in online form. They don't have any information regarding the different farming system from which they can short out their problems. They have a proper facility of transportation (Lal pari Buses). They have solar panels in their village and they want to expand it more to fulfill there needs. They do not have any problems in electricity. For women Anna Hazare is going to start Mahila Graha Udyog.

Conclusion Ralegan Siddhi is a very good example of a developed village. I liked the way the village is protecting their vegetation and have adopted new technology also. They have a keen knowledge about their education system. Further development is possible, for instance through value addition of outputs under a Ralegan Siddhi brand name. If sorghum is marketed under the brand of the village for nearby cities like Pune and Mumbai under the leadership of local expertise. Since Ralegan is located near an industrial area, so small home-based workshops are possible. Inspired by the SHGs, neighboring villages of Ralegan Siddhi (Jategaon, Gatewadi, Ghanegaon and Pimpalner) have set up 35 SHGs in total with a collection of Rs. 18-20 lakh (Anna Hazare, 2003). The watershed-based conservation activity and the water lifting schemes have resolved 90 % of but not in case of natural disasters all the irrigation projects still depend on the rainfall intensity and supply of electricity. There are 18 hours of load shedding and only six or seven hours of electricity. This is not enough for irrigation. Around 16 or 17 hours of assured electricity supply are needed. Just 25km away, Maharashtra Industrial Development Cooperation has continuous electricity, but not Ralegan. There is too much load shedding. Erratic supply of electricity at critical times will affect incomes of individual households as well as the progress of the village. These reflect Ralegan's awareness and responsibility for wellbeing of the future generations. The strategies implemented to overcome water scarcity reflect the knowledge villagers have and tremendous efforts which they have put in. Ralegan has also done eye-catching work in area of women's empowerment, poverty reduction, health and hygiene, employment, and education. Cases like Ralegan siddhi are not unique in India or the world, but in-depth scientific studies of such cases, attempting to understand the factors and processes enabling sustainable changes at community level are still insufficient. There is lack of a systematic knowledge in this regard. - an example to be followed wherever similar eco-climatic situation and constraints prevail.

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An Overview on Innovative Practices in Indian Hospitality Industry

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Abstract

Hospitality industry has huge potential of growth and it is gaining its pace post pandemic. It is reported in Economics Times that hospitality industry has gained a revenue rise post pandemic. With changing time and era it is of utmost importance to change with time to keep an edge over your competitors. This is the reason of growing importance of innovative practices. The purpose of this article is to provide an overview of various innovative practice adopted in hospitality industry and their impact. This article will also provide an insight on adaptability of new developments in various functions of hospitality industry. Overall this paper suggests that innovative practices does help in gaining advantage over competitors and also becoming profitable entity in hospitality.

Keywords: innovation, service industries, hospitality services, technology, development.

Introduction

Hospitality industry is one of the fastest growing industries in the world. Despite of fluctuating economic conditions, travel and tourism industry is showing continuous growth. No matter how industry is growing every player has to think of new ways to stay ahead of its competitors. It is seen that owing to intense competition hotel owners have to create different products and services to gain and retain customers. To match up the increased supply, hotels need to make deliberate and persistent efforts to gain competitive edge.

The new age travelers look for creativity and innovation. They need wider use of mobile technology and applications. Millennials are more interested in online reservations. So online check-in- check-out trend is rising because of technological advancements and providing ease on variety of devices (Gehrels, 2015). Customers are independent and not relying on agents. So in today's day and time it is very important to develop new models to build greater customer segment (McGuire, 2015).

So new developments have become very important for reviving service and products. It is equally important to review all the initiatives adopted already in terms of what worked and what did not work for the betterment? To check whether some functions adopt changes readily or not? How can industry motivate its employees to bring forth innovative idea for gaining competitive edge? What are various barriers that come in the way of new development processing? This article aims to find out answers of above questions in the Indian scenario. This study will be helpful for hoteliers, academicians and researchers to gain knowledge of hospitality industry regarding new developments.

Today's Travelers make pre-notions about facilities and experience because of hype build by social media platforms. This is creating pressure on management to develop new practices year by year to give guests best possible experience matching their expectations. In today's time technology changes very quickly so it is evident that scope of innovative changes is very high (Pardo et al., 2013). Innovative practices is driving force for hospitality industry it also puts impact on firm's performance.

Tugores and Garcia, (2015) findings suggests that determinants for new developments includes variables such as size of the hotel, environmental conditions, location and human resource.

Recently developed concepts of Boutique hotels are good examples of innovation based on the need of viability. Small and specifically curated and designed properties are economically very viable and attracts industry people as well as customers. As per Victorino et al. (2015) customers want to avail services from those hotels which offer great facility under budget. It is also found that innovations led to better revenue management (Paco et al., 2013).

Prime focus:

There is undoubtedly various areas with great scope of new practices and developments in hospitality industry like Human Resource management, Financial Management, Technology Management, Customer Relationship Management, logistical developments etc. innovative practices in every sphere can improve customer experience.

In this study we are including a few areas where innovative practices are taking place and opening way for further developments also.

Technology management:

No sector in today's time is untouched by technology and hospitality industry is no exception. Operations in hospitality industry are radically changed by intervention of technology. Today guests are welcome by staff holding iPad in hand and managing check-ins without any hassle. Not only this the new iConcierge app on Android and iOS, or handing out iPads preloaded with the iKnow Concierge software in six different languages to help guests access a variety of services. New technological advancements and development help to ensure that the guest's stay is simple and convenient (Social Hospitality, 2014). Some recent developments substitute a smartphone app for a traditional hotel key card, and the app also allows for easy guest check-in. Starwood Hotels & Resorts have adopted this new development (https://www.starwoodhotels.com / corporate/reservations/index.html). Now mobile phones are used to unlock doors, make reservations, it can also be used to place orders to housekeeping staff, to check menu and table reservation.

Customer Service management:

Victorino; Verma and Dev, (2005) stated that Hospitality firms are a good example of a market that can benefit from the implementation of service innovation. To remain competitive in a dynamic environment, managers must be proactive in making changes that focus on customer preferences, quality, and technological interfaces in greater depth. There are several reasons to implement service innovations. These innovations can make customers feel special, and this feeling can make customer loyal for your firm for life. Innovations in services can help resolve issues which are not tangible but are really sensitive. Use of technology and other developments can help in processing customer's data more efficiently. This is how small things and small changes can make big differences. Bharwani and Mathews(2016) report on a study that aimed to create a typology to help better understand the functional and experiential innovations that the Indian hospitality industry has adopted and continues to adopt in recent years.

Revenue Management:

Revenue management is actually strategic, tactical and operational actions taken to manage revenue by managers. It is indeed a very important area where innovative practices can be adopted because of complexity of functioning. In hotel operations it is very difficult to manage problems like cost management, land management and risk management (Sanjeev and Jauhari, 2012). If the process is well managed and based on set data taken from micro and macro environment of any hotel it can be extremely helpful for critical decision making (Ivanov, 2014). There are a few renowned hotels those use advanced approaches of revenue management namely Hilton, InterContinental, Marriot, Sheraton and Starwoood (Jiang, 2014).

Competitive Cost Management:

This concept came in existence in 1990s. Cost management practices help in framing strategies to minimize waste, good planning and controlling and in-turn provide information at right time for smooth functioning. Study conducted by Sevim and Korkmaz, (2015) suggests that efficient cost management practices help in productivity, budgeting, pricing, sustainable development, controlling leading to profitability. It is realized that few issues like high cost of operation and difficulty in increasing revenue are certain aspects which must be addressed Sanjeev, Gupta and Bandyopadhyay (2012). Innovative practices can be really beneficial to address these practices.

Culinary Management:

Indian cuisine has huge range flavors. From north to south and east to west food taste, varieties and culture varies drastically. All the hotels try their best to incorporate vivid taste and provide best experience to its customers. This is an area where maximum new developments are taking place not only in India but across the world. Innovation in this area is coupled with practices of yield management to provide freshly grown ingredients to chefs for best taste. Now a days it is a very common practice to establish live kitchens in Buffet set up to avoid wastage of prepared meals. To reduce cost of energy many restaurants are switching to piped gas from LPG. Kumar (2012) added that dealing with local vendors and suppliers can reduce cost by many fold. As innovative practice these days hotels and restaurants are providing food prepared with local traditions using high quality ingredients which is termed as 'slow food' (Munjal and Sharma, 2016).

Conclusion:

The prime purpose of this article was to address some of the strategic questions and some innovations that are occurring in different aspects of Indian hospitality industry to target those questions. In above discussion some of the problems related to customer service management, competitive cost management, revenue management, technology management and culinary management are discussed in depth with respect to innovative practices.

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FINANCIAL INCLUSION IN RURAL AREAS: CHALLENGES AND OPPORTUNITIES

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ABSTRACT:

This paper aims at exploring most relevant challenges and opportunities that deal with fighting against financial exclusion in rural areas. Their communities tend to be characterized by a lower level of financial inclusion compared to those in urban areas, thus leading to explore cross-cultural issues that are closely linked to the deep-rooted urban-rural divide. The wide differences in their intrinsic features include a remarkable gap in terms of financial literacy and education, as well as of access to formal financial channels and of quality of financial services available. No surprise that this gap does not help rural areas to achieve sustainable development, in line with the 2030 Agenda adopted by the United Nations (UN) in 2015; yet, pursuing progress to this end is a must, rather than an option. Factors to be investigated encompass technological advances that keep the financial industry evolving, especially in the subset pertaining to the delivery of financial services, and that sound like an invitation to evoke the concept of digital financial inclusion. Conclusions draw upon best practices and success stories, to be disseminated and replicated, in sight of contributing to the post-pandemic "new normal" as a stepping stone to a "new future".

Keywords: Financial inclusion; sustainable finance; urban-rural polarization

1.- Introduction

The objective of this study is to provide a conceptual framework for analyzing cross-cultural issues that revolve around the fight against financial exclusion in rural areas. They tend to be characterized by lower levels of financial inclusion compared to urban areas, thus leading to explore cross-cultural issues that pertain to the urban-rural divide: the areas that urban and rural communities respectively live in tend to be characterized by vast differences in intrinsic features, that encompass economic conditions, financial fragility and standards of education; these differences help explain the rationale for migratory flows from lower-income regions, where agriculture is traditionally the main activity and a vital source of self-subsistence.

Focusing on rural areas, there is compelling evidence of a gap to be definitely filled in terms of financial needs and their satisfaction, with banks called to play a key role. Reliable statistics – such as those made available by the World Bank and the Federal Deposit Insurance Corporation (FDIC) – shed light on the underbanked and unbanked, with limited access to finance, if any: they are represented by households and enterprises – mostly micro- to medium-sized companies – that account for a relatively large share of the institutional sector they belong to, even in industrialized countries, including the US; however, financial exclusion is typical of poor, vulnerable people and entrepreneurs located in rural areas, where informal, less reputable financial channels often prevail.

Challenges and opportunities ahead are closely linked to the achievement of the 17 Sustainable Development Goals (SDGs) that have been adopted by the UN in 2015 and that provide a shared blueprint for partnerships for peace and prosperity for people and the planet. Therefore, unprecedented consideration needs to be given to how to promote inclusive finance, especially in rural areas, as a catalyst for their sustainable development; conclusions draw upon lessons learned and best practices, to be shared and disseminated, to benefit not only the market segments under investigation, but our global village as a whole.

2.- Insights into territorial imbalances

Rural communities have historically suffered from depopulation while a common trend pertaining to population in urban areas can be identified with a visible process of growing concentration. In Europe, the prevailing settlement paths and their growth dynamics, that involve the relations between rural areas and cities, tend to be explained in terms of socio-economic factors; not less importance should be assigned to financial implications that emerge when the state-of-the-art is closely scrutinized, in sight of promoting stronger cohesion between these two territorial realities.

According to ESPON (European Spatial Planning Observation Network), that is designed to function as a European Grouping for Territorial Cooperation (EGTC), “in very general terms, population development is dominated by an increasing urban-rural polarization”: actually, “in most European countries, demographic growth has been lower in rural than in urban areas, and population is more and more concentrated in or around larger cities and metropoles”; to go deeper into details, “depopulation is associated with drops in fertility rates and lower life expectancy – a shift which puts baby boomers at the top of the age pyramid”. No wonder that, as a result, “Europe is ageing considerably, but more in some places than others”, and that “the natural population change (defined as the difference between birth rate and death rate) is now lowest in rural regions" (ESPON EGTC, 2018, pp. 3-5).

At the same time, it has been stressed that "immigration will not compensate for depopulation and ageing in the rural parts of Southern Europe. Even though the European Union (EU) as a whole is one of the most attractive places in the world, immigrants often settle in the North-West and tend to be concentrated in larger cities where opportunities are more numerous": once again, it is useful to refer to empirical evidence, which allows to state that "migration to urban areas (both intra- and extra-EU) is much higher for all urban areas" and that also "rural areas in the Danube and in the Mediterranean macro-region have become "sending" regions (meaning that they lose inhabitants to the "receiving" regions of the EU)"; this trend, that has been labelled as "internal migration", further accelerates territorial imbalances within Europe and makes it even more urgent to cope with the problems linked to rural depopulation, such as those involving brain drain and labor shortage.

3.- Pursuing an "overall harmonious development"

These thoughts support the view that rural depopulation can be classified as a "systemic phenomenon" which poses major challenges: as a matter of fact, rural regions tend to be afflicted by undesirable features, such as poor access to public services, lack of economic competitiveness and innovation and precarious governance, that help explain why these areas are affected by demographic decline; to make things harder, these features show remarkable interdependence, as each of them is correlated to another, which may trigger a vicious cycle leading rural territories to see their population shrink and to become "inner peripheries". They are characterized by significantly lower access to services of general interest than surrounding areas, even though the regions at issue cannot be defined as peripheries by geographical standards.

With good access to social and economic services of public interest being considered a major factor which contributes to quality of life across European territories, the gap between rural and urban communities in terms of available services stands as one of the main reasons why population imbalances remain significant and may even increase, not to mention the commonly insufficient access to basic services by those who live in sparsely populated areas. Yet, an extraordinary amount of resources continues to be devoted to Cohesion Policy by the EU to promote and support the "overall harmonious development" of its Member States: in other words, "the EU aims to reduce disparities between the levels of development of its various regions" and "special attention is paid to rural areas"; other key targets include "areas affected by industrial transition, and regions which suffer from severe and permanent natural or demographic handicaps, such as the northernmost regions with very low population density, as well as island, cross-border and mountain regions" (Kołodziejski 2022).

Overall, it is worth emphasizing that EU Cohesion Policy contributes to strengthen economic, social and territorial cohesion in the EU by correcting imbalances between countries and regions, with special attention being paid to fulfil the Union's political priorities, especially the green and digital transition. In particular, Cohesion Policy supports several measures to help Europe get fit for the digital age: digitizing European industry, to ensure that businesses, smaller-sized enterprises, digital and non-tech companies can take advantage of digital innovations; improving broadband connectivity and access, to boost productivity for businesses, efficiency of public services and access to digital opportunities and amenities for European citizens; creating a digital society and economy, which benefits from digital opportunities by building smart cities, improving access to e-government and e-health, boosting digital skills and the take-up of digital solutions in public utilities, while ensuring cyber-security; investing in developing innovative digital technologies, such as the Internet of Things, Artificial Intelligence, augmented and virtual reality, gamification, human-machine interfaces and supercomputing (EC n.d.).

4.- The key role of the financial system

Besides highlighting the potential for progress to be exploited by the EU, as well as by other multinational and supranational organizations, it is imperative to emphasize the role to be played by the financial system. As the world gradually recovers from the pandemic crisis, crucial issues to be addressed have been increasingly centered upon how to revive long term growth while promoting sustainable development; a key factor can be identified with the capacity to restart and reorient the economic environment which – by definition – relies on financial institutions as one of the three pillars that the financial system is based on, together with financial markets and financial products.

Despite the close link between the real and the financial sphere of the economy, not so much attention has been paid to the "finance-growth nexus" till the end of the last century and at the same time the role of financial intermediaries in properly allocating available funds has not been lent due weight; afterwards, not only academics and practitioners have begun to turn the tide but they have widened the scope of their investigation to emphasize that countries with broader, deeper and more active financial systems might be prone to financial crises, particularly if regulatory structures are inadequate. With social needs, work habits and production patterns being severely affected by the Covid-19 pandemic, investments in local infrastructures are strongly needed on a global basis in order to sustain the recovery process, as well as to solve long standing problems, such as those associated with climate changes, not to minimize the implications of social exclusion.

They sound like an invitation to address cross-cultural issues that deal with providing easier access to the financial services offered by banks and other financial institutions, including credit facilities, since financial inclusion should be recognized as a necessary condition for social inclusion: as it has been argued, "the countries in which this is so are tending to increase over time as their financial systems become more developed" (Fondeville et al. 2010, p. 3) and promoting financial inclusion should gain momentum as a priority; what can be then questioned is how far financial exclusion – in the sense of not being able to access or use appropriate financial services that enable to lead a normal social life – is an independent cause of social exclusion rather than a symptom of it.

5.- Financial exclusion in rural areas

According to the World Bank, "financial inclusion means that individuals and businesses have access to useful and affordable financial products and services that meet their needs – transactions, payments, savings, credit and insurance – delivered in a responsible and sustainable way" (World Bank 2022). There it follows that "inclusive finance strives to enhance access to financial services for both individuals and micro-, small and medium-sized enterprises" (UN n.d.), in order to reduce poverty, tackle inequality and foster sustainable growth: even a quick look at the 2030 Agenda for sustainable development is enough to grasp the relevance of these concepts, provided that Goal 8 calls for the promotion of economic growth, which must be inclusive and sustainable, just like industrialization (Goal 9), cities and communities (Goal 11); financial inclusion is evoked whereby policies to be adopted are listed, based on the commitment to improvements towards this end, and – to better define it – the description of Goal 1 ("end poverty in all its forms everywhere") is set to ensure equal access for everybody, "in particular the poor and the vulnerable", to "appropriate financial services, including microfinance".

To draw a realistic picture, it must be acknowledged that financial exclusion does not only affect developing countries: for instance, 5.9 million – or 4.5 percent of – US households were estimated to be unbanked in 2021, which means that nobody in the household had a checking or saving account at a bank or credit union; not unexpectedly, "unbanked rates were higher among lower-income households, less-educated households, Black households, Hispanic households, working-age households with a disability, and single-mother households" (FDIC 2022, pp. 1-2). On a global scale, converging opinions indicate that financial exclusion is greater in rural areas than in cities and supporting arguments stem from the lower income levels that are usually recorded among rural communities and from the more limited access to bank credit that tends to be made available to farmers and non-farming businesses, especially micro- to medium-sized enterprises in agribusiness, due to both demand and supply factors (Kata and Walenia 2015).

On one hand, these users of banking – as well as financial – services may be tempted by gradual self-isolation and exclusion due to competitive disadvantages that are often associated with their own businesses and that include low and unstable income levels, risk aversion and lack of confidence in traditional financial institutions, first of all banks. On the other hand, the structure of local financial systems is responsible for not adequately supporting those that are threatened with financial exclusion: they may see loans denied or excessive collateral items requested or credit agreements terminated by banks, not only for objective reasons but also for subjective ones, for instance difficulties in assessing these customers' creditworthiness and changes of its initial assessment over time; otherwise, terms and conditions may be harshened, as soon as even temporary difficulties are experienced by the borrower, thus making even harder for the businesses at issue to shape their optimal financial structure, further reducing their economic efficiency and ultimately hindering their development together with the comprehensive, balanced and sustainable development of the overall real economy.

6.- Exploiting the economic potential of rural areas

Needless to say, regional differences abound and include those that have to do with whether enough financial institutions are located in the rural areas. Not surprisingly, the density of financial institutions branches with respect to population and GDP per capita has been identified as one of the key variables to build up a model based on the Index of Rural Financial Exclusion: for instance, this model has been used to discuss the driving factor that can help to alleviate rural financial exclusion in different areas in Gansu Province and Jiangsu Province, China, with the former found affected by a higher degree of financial exclusion; in line with main findings, an increase in the number of financial institutions branches in Gansu Province has been recommended, which can be expected to make the amount of credit per capita grow and finally to effectively alleviate financial exclusion in the area under scrutiny (Zhao 2016).

In more general terms, people living in rural areas need access to financial services for a range of productive (asset building, working capital) and protective (mitigating risk exposure, including health issues) purposes: to purchase stock, equipment, agricultural inputs; to maintain infrastructure; to hire workers for planting and harvesting; to transport goods to markets; to make and receive payments; to manage peak season incomes to cover expenses in the low season; to invest in education, shelter and health; or to deal with emergencies. Even tough rural communities need financial services the most, they remain the largest unserved market for financial services: therefore, “ensuring their financial inclusion can unlock the considerable economic potential of rural areas, and benefit the rural poor by increasing household income and decent work”, as argued by the International Labour Organization, that can provide valuable support to the fulfillment of this goal through its technical capacity in financial inclusion and in integrating access to finance strategies in its work (ILO 2019).

Heading to Europe, and particularly to Spain, it is not a case that issues have been raised on the recent increase in the number of people without a bank branch in their municipality, which has been reported as “a form of financial exclusion” affecting 1.13 million Spaniards in rural areas (in 2017), due to job losses in the financial sector and the mass closure of bank branches: actually, “the transformation of savings banks into commercial banks and the wave of mergers between financial institutions, which may extend to credit unions, have resulted in a move to concentrate on other activities and led to a reduction in the network of branches in rural areas”; meanwhile, “the increasing digitalisation of the banking sector has multiplied the impact of the digital divide between urban and rural areas, thus further contributing to banking exclusion” (López Bermejo 2017).

7.- Promoting inclusive digital economies

It sounds encouraging that, according the Consultative Group to Assist the Poor (CGAP) housed at – and administered by – the World Bank as trustee, “banks and a widening array of non-banks have begun to offer digital financial services for financially excluded and underserved populations, building on the approaches that have been used for years to improve access channels for those already served by banks and other financial institutions. Innovative digital financial services involving the use of mobile phones have been launched in more than 80 countries” and in some cases a significant scale has been reached: by this route, “millions of formerly excluded and underserved poor customers are moving from exclusively cash-based transactions to formal financial services – payments, transfers, savings, credit, insurance, and even securities – using a mobile phone or other digital technology to access these services”; further progress is on the cards, as “the picture is continuing to shift rapidly with the emergence of ever more new technologies” (Lauer and Lyman 2015).

To be optimistic, universal access to financial services can be considered within reach, thanks not only to new technologies but also to transformative business models and far-reaching reforms. No question that such instruments as e-money accounts, along with debit cards and low-cost regular bank accounts, can significantly increase financial access for those who are now excluded: accordingly, there is no choice but to endorse the far-reaching views expressed by the UN Capital Development Fund that stem from the strategy known as “Leaving no one behind in the digital era” (UNCDF 2022) and that are based on over a decade of experience in digital financial inclusion in Africa, Asia and the Pacific: beyond borders, digital access to – and use of – formal financial services can be a game changer for unserved and underserved low-income households, as well as micro- and small-sized enterprises, thus mitigating – and eventually eradicating – one of the competitive disadvantages suffered by excluded and underserved populations in rural areas; of course, these services should be suited to the customers’ needs and delivered responsibly, at a cost both affordable to consumers and sustainable for providers, so as to catalyze digital financial inclusion and ultimately contribute to promote inclusive digital economies, in line with the 2030 Agenda.

As implied by Goal 17 on partnering for achieving the other 16 SDGs, unprecedented efforts have been – and still need to be – undertaken to harness digitalization to finance a sustainable future, which has prompted to revise the concept of financial inclusion not to conceive it as the end goal anymore: an evolutionary view has become prominent that aims at rather interpreting this concept as “a means to multiple ends” and that tends to validate the remarkable advances achieved in digitalizing the financial system, even in developing countries despite their different digital needs compared to those prevailing in industrialized regions (González at al. 2017); as a matter of fact, digital financial inclusion can provide outlets for low-income accountholders to engage in the economy in order to meet their daily needs and to improve their skills, productivity and marketability in the digital-economy age. It implies that “everyone should be able to access, use and benefit from a broad range of meaningful services built on digital platforms” and “no one should be left with just basic voice, messaging and mobile money services” (UNCDF 2021).

8.- Conclusions

All in all, many arguments back up the view that digital financial services are foundational and actually they help to promote better life conditions in areas subject to depopulation, as most rural ones are: just to make a few examples, these services enable local entrants to innovate in markets, provide sustainability to new services and create marketplaces for a wide range of products and services – both digital and non-digital ones; therefore, Inclusive Digital Economy programmes – such as those developed by UNCDF, including the provision of risk capital directly to the private sector, as well as flexible grants and loan instruments – can ensure that more households and small businesses gain access to services that expand opportunities and reduce vulnerabilities, thus contributing to solve problems that tend to prevail in rural areas. Actually, these initiatives can support a wide range of products and services in various sectors ranging from finance to agriculture, education, health and transportation.

With digital financial inclusion acting as a catalyst for digital economies, and vice versa, much hope can be placed in the transformative power of digitalization to minimize undesirable implications of urban-rural polarization trends that penalize areas outside cities. While it is not just a matter of trading off them against rural areas, due to not uncommon features that undermine the often praised appeal of urban areas, there is wide room for upgrading life conditions in rural ones thanks to forward steps towards higher levels of digital financial inclusion: they can be assumed to have positive effects on reducing vulnerability and particularly to improve farmers' ability to cope with risk, that should be approached to without underscoring its multi-faceted conceptual insights; they encompass climate change and related financial issues, that lead to spotlight the economic impacts of natural hazards on vulnerable populations, especially in rural areas, and to suggest the recourse to climate risk insurance, as well as to other specific measures.

To sum up, building an inclusive financial sector for rural communities sounds like a must, rather than an option: to this end, digitization of agricultural payments spearheads the list of relevant drivers to expand financial inclusion of farmers, which by the way does not involve just payments and can fruitfully rely upon widening the scope of digital finance; however, there are challenges to overcome while trying to accelerate digitization of agribusiness payments to farmers, such as foundational challenges (for instance: limited connectivity, poor digital literacy and a weak regulatory environment for digital payments) and proximate challenges (including limited availability of cash-in and cash-out points as well as of opportunities to use e-money). With rural depopulation being historically considered a "systemic phenomenon", issues to be addressed without delay involve the sustainability of rural communities, that continue to be impacted by the exodus of young people, in search for better standards of living, while it makes sense – from a global perspective – to ensure people the same opportunities, benefits, access to services and rights, regardless of where they live, which should apply first of all to younger generations as they represent our planet's future.

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Cash and Accrual Based Accounting System: A Dual AccountingApproach for Financial Reporting *vis-a-vis* Investment Decisions

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Abstract

Cash acquires an important position in a business entity as liquidity position of a company is vital for financial decision making. Acceptability of cash has a higher degree in comparison any other form of current assets. Further the cash is converted into various other assets necessary for business operations in the form of working capital. The operations of a business are depending upon the ability of the management to deal with cash and cash equivalents. It is the chief source of input that is required to run the business in long run. The importance of cash lies in its ability to deal with disbursement of payments and other obligations without any restrictions. Availability of cash makes a business deal better at the time of procurement of goods and services. Business can attract higher discount by making real time cash payments. It results in higher profitability of a firm. The accounting for cash transactions also becomes easy in comparison to accrual base accounting but at the same time the limitationof cash-based accounting system is the origin of accrual-based accounting. It is also aggregable that the principle of matching revenues with cost is justified only in the presence of accrual- based accounting. The accrual-based accounting concept is a well settled and adopted concept allacross the globe as it clearly signifies the rules of journalizing the accounting transaction. It has become the necessity of the business to provide credit on sales and purchase as well along with deferred payments and income receivables. As far as the taxation policy is concern it's easy for the state to levy and collect tax on accounting profits with accrual-based system. Investors holds fundamental analysis as a major criterion for their investment decisions where profitability ingredient plays an important role. Fundamental analysis is a method used by investors to identify the real value of a share. The market price may not reflect the actual value of the stock. The stock may be overvalued or undervalued in the market. Fundamental analysts study the underlying health of the company in order to find the intrinsic value. This is done by using various qualitative and quantitative factors such as the company's revenues, profit margins, return on equity, future growth potential and other metrics. The main purpose of this method is to identify companies that that are fundamentally strong in order to invest in them for the long term. The present study attempts to investigate the opinion of investors regarding their decisions with reference to fundamental analysis. It studies their perception on investment where the financial reporting is based on accrual or cash-based system of accounting.

Key Words: *Cash, Accrual, Accounting System, Accounting Standard, Financial Reporting*

Introduction

Cash is one of the dominant current assets required by a business concern to run its business. Since the inception of the business the capital generated (whether debt or owners fund) is in the form of cash to a major extent. Further the cash is converted into various other assets necessary for business operations in the form of working capital. The entire life of a concern is depending upon the ability of the management with reference to cash and its related determinants. It is the primary source of input that is required to run the business in long run. Theimportance of cash lies in its ability to deal with disbursement of payments and other obligations without any restrictions. The shortfall of cash will disrupt the day-to-day operations of the business at the same time the surplus cash will have its own financial reparations by the mean of loss in opportunity income in the form of interest.

Cash here for the discussion includes money in the form of currency notes, coins, bank balance, cheques held and short-term marketable securities. The meaning of cash can be taken referring the cash and cash equivalent as per Indian Accounting standard 3 (revised), pertinent to cash flow statement. The scope for cash is the inclusion of nearby cash items also, that can be converted into cash readily as and when required. The major proportion of nearby cash is in the form of marketable securities, the investment in which is made through surplus cash available with the firm. Similarly in the case of cash deficit, the firm needs to go for short term borrowings in order to manage the cash cycle. The approach of cash management is to deal with the liquidityproblems faced by the firm in day-to-day operations. The accounting and management of cash has an importance in comparison with other current assets because cash is more significant and

least productive asset that the firm holds. It is significant because it pays the firm's expenses and obligations. However, it's the most unproductive because unlike other assets and inventories it does not produce goods for sale. The approach of cash management is to maintain adequate control over cash position to keep the firm sufficiently liquid and to efficiently use the surplus cash in increasing the profitability (Pandey, I.M,2017).

The limitation of cash-based accounting system is the origin of accrual-based accounting. As per the principal of financial accounting, accrual-based accounting is preferred over the cash concept, however it cannot be denied that cash is the base since inception of business, but at the later operations of the business credit transactions emerges and working capital is created. It has become the necessity of the business to provide credit on sales and purchase as well. This is just to support the liquidity problem that has arisen due to time lag in collection of cash and disbursement of cash. The accrual-based accounting concept is a well settled and adopted concept all across the globe as it clearly signifies the rules of journalizing the accounting transaction. As far as the taxation policy is concern it's easy for the state to levy and collect tax on accounting profits with this model. Accrual basis of accounting brings more advantages for internal and external information users. To get these advantages each organization need to improve IT system and administrative procedure to ensure that the accounting data is timely, complete and accurate. Cash basis of accounting focuses the information related to the present time activity but accrual basis of accounting focuses the information related to present and future by present recognition of receivable and payables. (Md. Rouf Biswas,et.el,2015)

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present time activity but accrual basis of accounting focuses the information related to present and future by present recognition of receivable and payables. (Md. Rouf Biswas,et.el,2015)

The key difference between the two types of accounting (i.e., accrual and cash) lies in the timing as to when the transaction is recognized. With cash accounting, the transaction is recognized on the date the cash is received or disbursed. Under accrual accounting, the transaction is recognized on the date the income is earned or the expense is incurred. Thus, cash accounting focuses on cash receipts, cash payments and cash surpluses or deficits, while accrual accounting) focuses on revenues, expenses and profits or losses (Geoffrey Tickell,2010).

Objectives of the Study

- To assess the perception of investor, regarding investment based on Cash System
- To assess the perception of investor, regarding investment based on Accrual System
- To assess the perception of investor with reference to change in Reporting System.

Methodology

The study is based on the perception of investors in concern with their preference in investment. It studies their behavioral approach where the company reports the annual financial statements under three circumstances. The first one where the financial reports are prepared and reported on cash basis. The second is the present system of accounting which relates to accrual basis, where revenue recognition and expenses are recorded as and when they arise. Third is the preparation and reporting on the financial statement if the company reports both the systems. The study is based on the sample size of 100 equity investors having primary Knowledge of financial fundamentals of the company. The opinion is collected through a Schedule based on structured questions. Further statistical tools were applied to test the framed hypothesis. The study is descriptive research, where variables are identified that affects or doesn't affect the investment decisions of the respondents with reference to accounting and reporting system.

Cash basis Accounting

Cash basis accounting is sometimes referred to as "bank balance" accounting, because—with a few exceptions for non-cash expenses like depreciation—only transactions that have cleared your business's bank accounts appear on cash basis financial statements. Cash basis accounting recognizes revenue when it is received and expenses when they are paid, regardless of when the revenue is actually earned and the expenses are actually incurred. In accrual-based accounting, the revenue and expenditure of a business entity is recorded in the books when it is earned or incurred, irrespective of when cash is actually paid or received. Whereas, in cash-based accounting, books are prepared wholly on the basis of cash flows.

Take a small business that made a sale on March 13, 2019 but received payment for it on April 10, 2019. Under accrual-based accounting, the sale amount is recognized as revenue on the date of sale (March 13, 2019). The sale will thus figure in its accounts for 2018-19. But in the cash system of accounting, the sale would be accounted on the day when the firm receives cash (April10, 2019). It would thus not figure in the books for 2018-19.

Benefits of cash-basis accounting

Cash basis is the simpler method of accounting and requires less information to be tracked. This makes it easier for business owners to learn, use and keep up with. Cash-basis accounting deals only with concrete funds, so it's easier to see how much money is actually on hand. From the tax advantages point of view, cash-basis accounting allows you to control the timing of transactions. Speeding up expenses and slowing down revenue can decrease a company's tax liability in certain cases.

Disadvantages of cash-basis accounting

It has a Limited view of accounting and finance as it provides a great financial portrait of the business, but it doesn't show the full picture. It doesn't factor in potential business or customer liabilities, which could also impact decision-making. The use of cash based accounting has a restricted use. Not everyone can use cash-basis accounting. Businesses that offer credit to customers rely on inventory or make delay in payments must use accrual accounting. Potential difficulty of switching to accrual: If your business changes from cash-basis to accrual-basis accounting, you will need to make adjustments when transitioning your books.

Accrual-basis accounting

This is a more advanced way to handle business accounting. With this method, all transactions are accounted for when the transaction occurs or is earned to more accurately report on your company's financial results. At the time of actual receivable of cash, it is recorded for the purpose of adjusting asset or liability. The receipt and payment of cash is not the basic criteria rather happening of the event is taken into consideration. For example, business records the revenue sale is made – not when the customer pays the invoice. The same is true for expenses, which are documented when your company receives goods or services, rather than when an invoice is actually paid. This method of accounting provides a clearer, more dynamic financial picture of what's happening in your business.

Advantages

If expenses and revenue are always recorded at the point of sale or when the expenses are arising, it makes future financial planning easier. It justifies the matching postulate, where revenue and expenses should relate to same accounting year. Just looking at the cash on hand in any given moment does not provide an accurate depiction of the average activity your companyis experiencing or what your future inflows or outflows will be. It provides greater financial opportunities for the stakeholders. Lenders usually want to see the accrual method of accounting for companies before deciding whether to extend a loan. Revenue and expenses are aligned within given time frames. It helps for better analysis about company’s profits and other financials.

Disadvantages

Accrual accounting is more complicated to navigate, which can lead to unintentional errors or, worse, deceptive practices such as hiding mistakes in financial reports. With a more complicated method as well as required monthly reports, businesses often require dedicated staff (or even an entire department) to successfully manage accrual accounting. While accrual-basis accounting allows your business to report income as soon as you make a sale, it also requires you to pay taxes on money you haven't yet received.

Data Analysis and Interpretation

For the purpose of data analysis, the opinion of the respondents is presented through descriptives.Total 12 variables are taken for into consideration to test the hypothesis using one sample and two sample t test. The two nominal variables that is experience of the investors in the equity market and monthly frequency of investment are used for analyzing the variance of the test variable among and within the groups. The hypothesis is tested at 5 percent level of significance. One sample t test is used to find whether any significant difference exists between the sample mean and the hypothetical mean of the population.

H_0: There is no significant difference between sample mean of the test variables and their respective population mean.

Table 1.1 shows the Results of one sample t test. The "One-Sample Statistics" section shows descriptive statistics for the sample, including the mean being compared to the test values for all the 12 variables under study. For the purpose of the study, significance (alpha) level is .05. The Sig. column displays the p-value for the test. The results show that the p-value is greater than

.05. This suggests that the null hypothesis cannot be rejected, and the mean score of the investors is not significantly different from population mean score (2.5). Inversely the p-value is less than .05, suggests that null hypothesis is rejected and the mean score of the investors is significantly different from the population.

Table 1.1 : One Sample t test

V.no	**Variables**	**t**	**P-Value**	Mean	Null Hypothesis
V_1	Degree to deal with fundamental analysis	5.576	.000	3.23	Not accepted
V_2	Transparency in cash based System	5.444	.000	3.22	Not accepted
V_3	Cash rich company	0.306	0.760	2.53	Accepted
V_4	High profitability	3.251	0.002	2.85	Not accepted
V_5	Referring to Financial Reports	2.237	0.028	2.8	Not accepted
V_6	Cash profit as major parameter	-0.189	0.851	2.48	Accepted

V_7	Accrual earnings as a major parameter	2.774	0.007	2.83	Not accepted
V_8	Separate accounting practices affects investment decision	5.91	.000	3.08	Not accepted
V_9	Cash basis higher growth prospects in long run	-2.328	0.022	2.29	Not accepted
V_10	Accrual basis higher chances of growth prospect in long run	1.952	0.054	2.71	Not Accepted
V_11	CB reporting standards for better ROI	1.275	0.205	2.77	Accepted
V_12	Dual reporting standards creates dilemma	2.579	0.011	2.83	Not Accepted

One sample t test at 5 percent level of significance at 99 degree of freedom statistically suggests that in variable V1,V2,V4,V5,V7,V8,V9,V11,V13 the calculated P value is less than the alpha value(P<.05) at 5 % level of significance, statistically not accepts the null hypothesis that states that there is no significant difference between the mean sores and population mean. In case of respondents opinion regarding "degree to deal with fundamental analysis" measures the intensity to use fundamentals in decision making process (very low to very High)(t=5.576)(Mean=3.23).In the opinion regarding "Transparency in cash based system" (t=5.444)(Mean=3.22). The null hypotheses of both the variables are rejected at positive side. It suggests that investors are more inclined towards transparency and fundamental approach in their investment decision criteria. Similar results are achieved in variable confined to referring the financial report while investment but the mean is closed to the test value 2.5.However when it's about investment, taking into consideration the cash profits a major parameter the null hypothesis is accepted that indicates that no significance difference exists between the mean values of sample and population (t=-.189)(Mean=2.48).The null Hypothesis is accepted at the negative side since the t value is negative. It indicates that investors would prefer investment in companies having cash profits but with a low intensity. In case of accrual earnings as a major parameter with (t=2.774) (M=2.83) null hypothesis is rejected. However, on the opinion on whether cash-based accounting system gives higher growth prospects has negative t value of -2.328 suggests that investors does not find long term growth prospective in cash-based accounting system with a mean of 2.29. On the other hand, accrual basis higher chances of growth prospect in long run with (t=1.952) (mean=2.71) where the null hypothesis is not accepted, with a marginal mean difference. Finally, a combination of Cash based system and accrual-based system perceives a better option for investment (t=3.074) (mean=2.83).

Conclusions

Cash as an important element of working capital holds a crucial position in financial structure ofa company. The accounting policy of a concern is based on accrual system as per the accrual principle. Cash basis of accounting reports the financial information on current basis. Accrual basis of accounting focuses the information related to present and future by present recognition of receivable and payables. It helps in reporting the fair value the assets and liabilities. With the help of accrual system, information related to revenue, expenses can be detailed as expected. Day by day accrual basis accounting considering as an alternative system of financial reporting that will generate better information for decision-making and evaluating the performance of a company. The study concludes that although the preference of cash-based reporting is preferred as a major decision criterion for investment as visible by majority of the variables. The study suggests if the companies maintain or reports the results accrual basis as well as cash basis then the investors would have a wider scope in making their investment assessment.

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"Financial Literacy and its Effect on Investment Decisions"

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Abstract:

A strong financial system is the axis around which the development of any nation depends. India, at present, is reaping the benefits of "Scarcity Premium". It is evident from the stats that India is amongst the few nations which has registered a positive growth whereas the nations across the globe are bearing the pangs of Inflation. To carry these benefits forward, we need to educate our locals about the various financial services which are available at their disposal. Time and again, various initiatives are taken by the Financial Regulators to increase the awareness among the masses. These initiatives help increase the Financial Literacy levels in the country which in turn would lead to growth of the nation. The objectives of the current paper are to study how the various initiatives taken by the Government for Financial Inclusion affect the investment decision of masses and to provide future course of action for increasing the financial literacy levels.

The paper concludes that basic financial education should be started right from the school level so that it leads to increased financial literacy levels of the nation which ultimately results in growth of the nation.

Keyword: financial literacy, financial regulators, scarcity premium, investment decisions.

Introduction

The rapid growth in Indian economy over the last few decades and expansion of financial markets through liberalization, privatization and globalization have given a way to overabundance of financial products in banking, investment and loan products. Low level of financial literacy thwarts individuals from creating veracious choices apropos financial decisions. To accomplish the objectives, individual must capitalize his/her savings in right investment alternatives. The changing scenario in the work patterns has provided greater significance to the subject of financial literacy and education. As such the most important decision in this regard is the involvement of women. This can be a very important aspect that can contribute to a great extent in making optimum use of the resources so as to reach to the best potential in financial terms.

Review of Literature

The empirical studies are applied research studies. They help us to test the theories or models and also provide insights to reformulate old theories and models and/or formulate new theories and models. An attempt has been made to briefly review the important studies.

Jappelli T. et al (2021) in their study titled "Investment in financial literacy and saving decisions", analysed that financial literacy leads to economic development through the efficient allocation of savings, leading to higher returns, attracting more investment and growth in the country. A higher level of financial literacy also induces greater stock market participation and financial market involvement building confidence in the market economy and creating a better policy environment for growth. They attempted to explore the reasons for consumer investment in financial literacy and found that women had less wealth as compared to men and hence had less incentive and ability to invest in improving their level of financial literacy.

Agarwal P et al (2020) studied in their research titled "A Study on Future Plan for Increasing Financial Literacy Among People" that the growth of the development of any country depends on its financial system. For achieving the goal of high financial inclusion, there is only one solution which is increasing the financial literacy levels of the country. The relationship between financial literacy and financial inclusion is interrelated. In a broader perspective, financial literacy can be stated as understanding of economics and how economic conditions and circumstances affect household decisions.

Canfield M (2019) in his research titled Financial Literacy: The Argument for Required Canfield M (2019) Coursework Regarding Personal Finance in Schools analysed that to address the lack of financial literacy in adults, several methods have been shown to be effective. However, to address the systemic lack of financial literacy in the United States, it is imperative that steps be taken to ensure young adults are exposed to accurate information on a variety of financial topics. To that specific goal, courses are a proven effective method as they allow for discussions and scenarios on a wide range of topics.

Omojolaibi J.A. et al (2019) in their study "Are women financially excluded from formal financial services? Analysis of some selected local government areas in Lagos State, Nigeria'' advised that women are excluded from financial services mostly because of their lower level of education which thus exclude them from being able to utilize financial products such as mobile and internet banking; and the older the respondents get, the lower their willingness to make use of internet or mobile banking, as the emergence of new products in that line is too sophisticated for them to understand.

Chettri P. et al (2018) in their study titled "Financial Literacy among the Tea Garden Labourers in Darjeeling District: An Exploratory Factor Analysis" observed that Financial Literacy' (FL) is the major challenge faced by majority of countries in the world. The study focuses on financial literacy amongst the tea garden labourers of Darjeeling district and endeavors to examine their capacity to make financial decisions. This study aims to develop the constructs in order to test the validity and reliability of Darjeeling tea garden labourers financial literacy (FL) and its determinants such as Knowledge, Attitude, Behaviour, Skill and Awareness.

Objectives of the study

1. To study how the various initiatives taken by the Government for Financial Literacy affect the investment decision of masses.
2. To provide future course of action for increasing the financial literacy levels.

Research Methodology

This paper is basically descriptive and analytical in nature. In this paper an attempt has been made to study about the various initiatives taken by the government of India for promoting financial literacy and also to analyse how far it has influenced the investment decision choices of people. The data used is collected from secondary sources as per the need of this study. Various government websites have been used for sourcing secondary data.

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Result and discussion-

Initiatives taken by Government and financial regulators for increasing "Financial Literacy"

OECD-The Organisation for Economic Cooperation and Development has proposed "Recommendations on principles and good practices for financial education and awareness" The major suggestions given by them are:

It is responsibility of the Government and all the concerned stakeholder to promote financial education that is Coordinated, unbiased and fair.

For higher reach of financial education, it should start as early as at School Level.

Financial education should be a part of the good governance of financial institutions whose accountability and responsibility should be encouraged.

Financial education should not be considered as a form of commercial advice; proper code of conduct should be developed for financial institutions and the staff working in those financial institutions.

Financial institutions should be encouraged to ensure that the clients must read and understand information. More so when it is related to long term commitments or financial services with potentially significant financial consequences.

Basic savings, Debt, Insurance and Pensions are important life planning areas and therefore it should be the main area of focus for the Financial education programmes.

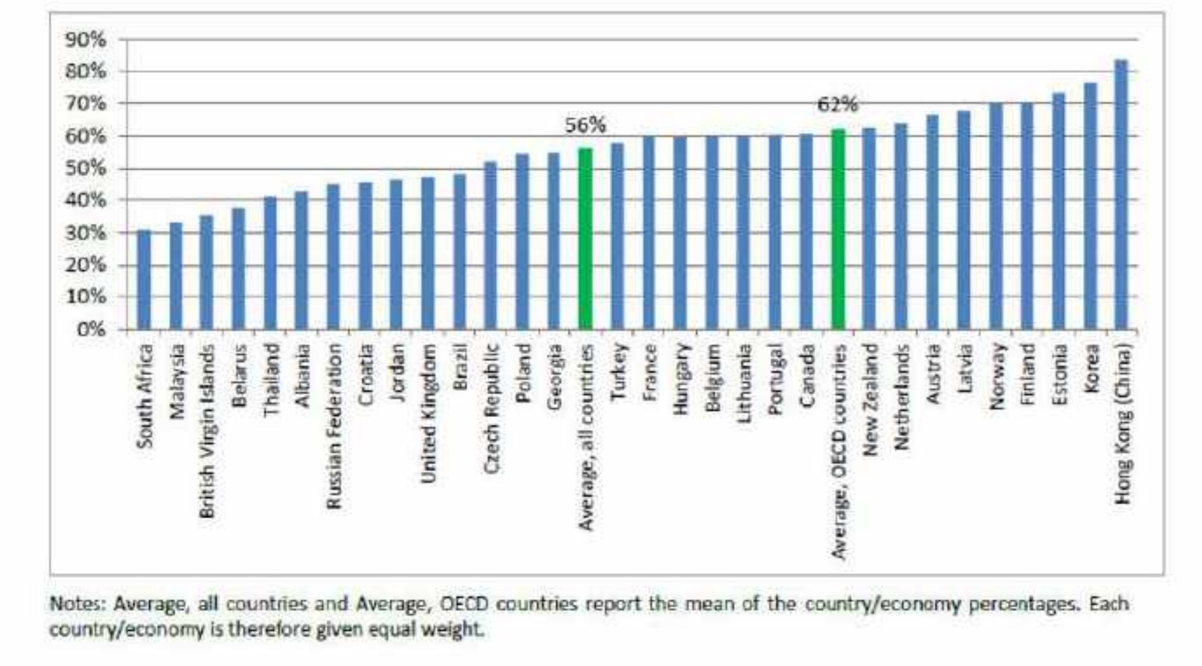


Figure showing minimum target score on financial knowledge of nations.

Source: OECD website

RBI

Reserve bank of India has undertaken a project entitled “project financial literacy”

This project helps spread information about the apex bank in India and educate people about the basic banking practices that are there for the common man. It targets various groups like school going children, college students, people in rural and urban areas, people living below poverty line, women, senior citizens and people from defence. There are differently categorised because there are different financial instruments for these different audience.

The project has been implemented in two modules, one module focusing on the economy, RBI and its activities, and second module focus on general banking.

RBI has taken help of banks, local government bodies, schools and colleges to help spread the information about financial services and banking services available for masses by way of presentations, short movies, brochures, comic books, pamphlets and it also has downloadable series on its website.

As per the Financial Inclusion policy of government and RBI, Financial Literacy includes knowledge about the following:

SEBI

Securities exchange board of India has embarked financial education on a nationwide campaign

To undertake financial education to various segments viz . School students, college students, working executives, middle income group, homemakers, retired personnel SEBI has empanelled resource persons throughout India.

These SEBI certified resource persons organise workshop to the target segments on various aspects like savings, investment, financial planning, banking, insurance, retirement planning etc

More than 3500 workshops have been conducted in various states covering around two lakh and sixty thousand participants

Investors education programs are conducted by SEBI through investor associations all over the country.

Regional seminars are conducted by SEBI through various stakeholders viz. Stock exchanges, depositories, Mutual fund association, Association of merchant bankers, etc

Under “visit SEBI” programme, school and college students are encouraged to visit SEBI and understand its functioning.

IRDA

Insurance regulatory and development authority has taken many initiatives to promote financial education.

To protect people from being duped Awareness programme are conducted. These are also aired on radio and television in which simple messages are spread about the rights and duties f individuals who are policy holders. They are also educated about the availability of various channels for dispute redressal. All this information is disseminated by way of television, radio as well as print media.

IRDA conducts an annual seminar on policy holder protection and welfare and it also partially sponsors seminars on insurance by consumer bodies.

IRDA has got a pan India survey on awareness levels about insurance carried out through the National Council of Applied Economic Research (NCEAR).

IRDA has also brought out publications of ‘policy holder hand books’ as well as a comic book series on Insurance.

PFRDA

The pension fund regulatory and development authority has been engaged in spreading social security messages to the public.

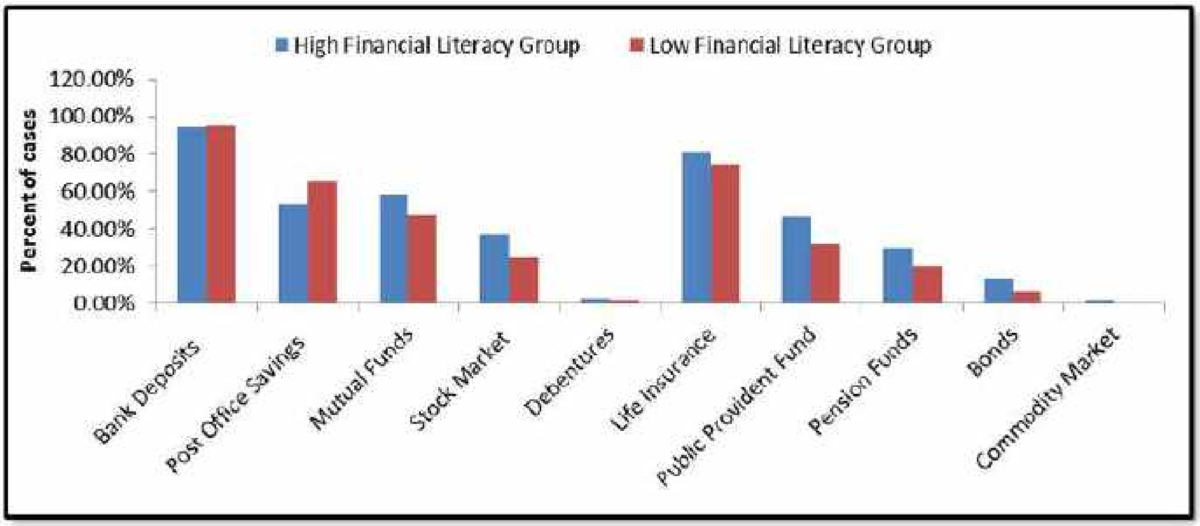
PFRDA has developed FAQ on pension related topics on its website and has been associated with various NGOs in India.

PFRDA has issued advertisements in print media and electronic media through radio and television.

PFRDA appointed intermediaries are called Aggregators who are directly responsible for pension awareness mostly in vernacular languages and in line with socio-economic sensibilities

Financial Literacy and Investment Pattern

The reports published by The RBI show the investment pattern of the people who belong to the high financial literacy category vis a vis people who belong to low financial literacy category. The following graph shows the difference in the investment decisions of the two categories of people.



Source: *www.rbi.org.in*

The above chart clearly shows the difference between the investment choice of the people who belong to High Financial Literacy Group and the people who belong to Low Financial Literacy Group.

The preferred Investment option for both category of people is Bank Deposit which is considered as the safest.

It can also be observed that high financial literate group prefers investing in risky investments like life insurance which is linked to stock market, mutual funds and shares. It is also seen that the people belonging to low financial literacy zone prefers investing in safe and less risky investment options like post office savings schemes and bank deposits.

The above graph shows extremely low level of investment in debentures and commodity market by individuals belonging to high financial literacy category and no investment in these sectors by people belonging to low financial literacy levels.

Conclusion and Suggestions

In India, the decision regarding investment is generally taken by the head of the families in Indian Households, any investment decision is guided by the family members rather than an individual decision. And therefore, it becomes important that the people of the family specially elderly should be aware about the new schemes that are launched from time to time. It can be concluded from the study that confidence of taking investment decisions is based on the financial literacy levels along with the education of the individuals. It can also be concluded that people lacking financial knowledge are less inclined towards risky investments. The need for education and financial knowledge is on the rise as it leads to financial independence of the people. It can also be concluded from the study that people with sound financial knowledge are confident about their investment choices. It is suggested that more such programs must be designed that would help increase financial education along with employment. Investment schemes which are especially targeted at women and are beneficial for their future should be launched so that women also get more inclined towards investment. Government should promote such awareness programs which emphasize on significance of financial independence of individuals and its eventual outcome. It has been seen that people are unable to take wise financial decisions because they lack financial knowledge about the various options available to them apart from the traditional post office and FDR investment. It is only handful lot that is aware of the financial market and can take investment decisions. These people could take wise financial decisions for their future because of their good financial knowledge. Government must also take initiative to introduce the basic financial knowledge in primary classes itself and increase the level of advance financial know how in subsequent years of the school. In this way we would be able to build a financially literate nation and would take a leap towards attaining the dream of a self-reliant India.

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Organizational Culture Influence on Employees Participation in Management

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Abstract

The objective of this research is to investigate the organizational culture in the industries, and its effects on the employee involvement in Management to take all kinds of the decision . Also, to study and investigate the organizational culture and affect the encourage of employee participation in management. Employee involvement is an essential concept to understand and illustrate the nature of association between the employer and its employee. Both the parties collectively taking decisions for automation, modification, expansion which is always beneficial for the organization. The employee's involvement can increase the belief and increase the good relationship between employer and employee. Due to enhancement of organizational ethos, it helps for judgment making process and improve the governance style effectively. The research study helps to the administration and to encourage employee involvement in work related decisions to share the knowledge , ideas , suggestions for the organizational growth.

Keyword: Decision making, Organizational culture, modification, automation, expansion.

Introduction:

Workers Participation in Management includes employee –management co-operation, co-ordination, joint consultation & joint decision-making process. Employee participation in management is an crucial factor for company and its employee as they are the key resources for the organization. Organizational culture includes ethics, attitudes, and behaviors of the employees in the organization. The Managerial philosophy affects the way of employees who are interacting and behaving with each other. Every company's objective is same to enlargement of profit and satisfies the requirements of the employees and the stakeholders. Built a good relationship with employee, increase overall performance within the company.

Employee involvement in management is extremely significant because it assist for ruling making process and minimize the dispute within the organization. Most of the companies are adopt this system and involved the employees in ruling making process; hence it reduces the interaction inequality between the employer and the employee. Through employee contribution the employees can segment their ideas, views , concepts and helps to encourage better decisions , less resistance to change, increase industrial democracy and increases the open communication of employees with management and creates good working environment in the organization.

Objectives:

1. To study relationship between organizational culture and employee participating in

Management for decision making.

2. To study the impact on the organization through workers participation in management.

Literature review:

Saba Gulzar, Avinash Advani (2016), specified that due to the employees participation creates a proper communication between management and employees, the employees can participated in organization's decision making process through suggestion scheme, quality circle , which helps to attain the organizational objectives effectively.

Dr. Shashwat Shukla (2017) stated that various ways are available for employee's involvement in management like suggestions scheme, works council, collective bargaining for the better growth of the organization.

Lucy K. Kuria (2017) stated that various proportions of employee involvement in management such as employee discussion, allocation, joint decision making and collective bargaining. Greater is the employee participation, greater is the organizational performance.

Noor Hazarina Hashim, (2012) , stated that Employee involvement is one of the manipulating factors of job fulfilment and it produces a strong relationship betweenmanagement and employee. All the companies has implemented these approaches ,it willhelp to enhance employee productivity and organizational performance.

Research Methodology:

Sample size- 220

According to literature review presented above we hypothesize that:

H0: There is no significant relationship between employee involvement in management and organizational culture.

Case Processing Summary

		N	%
Cases	Valid	100	100.0
	Excluded[a]	0	.0
	Total	100	100.0

a. Listwise deletion based on all variables in the procedure.

H1: There is a significant relationship between employee involvement in management and organizational culture

Reliability Statistics

Cronbach's Alpha	N of Items
.866	4

Reliability statistics indicate the value of Cronbach's alpha is .866(86.60%). Value more than .70 or higher is considered reliable.

Model Summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.495	2	18.247	51.297	.000[b]
	Residual	34.505	97	.356		
	Total	71.000	99			

a. Dependent Variable: CHNG_MNG

b. Predictors: (Constant), BM_S, HRM

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.320	.271		4.871	.000
	HRM	.223	.071	.271	3.152	.002
	BM_S	.415	.068	.528	6.148	.000

a. Dependent Variable: CHNG_MNG

The tables of regression analysis in indicating *p* value is 0.000. Consequently, if the value of *p* isless than 0.05 i.e. 0.05>0.000 then the relation between dependent and independent is positive.

Hence, there is a significant relationship between employee involvement in management and organizational culture

Hence alternative hypothesis “There is a significant relationship between employee involvement in management and organizational culture is accepted and null hypothesis is rejected.

Respondents based on Organizational culture and Employee involvement

S.No	Particular	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1	Involvement in decision making process	4%	54 %	6%	26%	10 %
2	Involvement in collective bargaining process	46 %	18%	4%	10 %	22%
3	Involvement in quality circle	4%	42 %	18%	26 %	10%
4	Involvement in works council & suggestion scheme	38%	24%	6%	18%	14%
5	Employee Satisfaction	10%	40%	15%	20%	15%

Interpretation –

54% employees are agree for Involvement in decision making process, 46% employees are strongly agree for Involvement in collective bargaining process, 42% employees are agree for Involvement in quality circle , 38% employees are strongly agree for Involvement in works council & suggestion scheme and 40% employees are Satisfied with work culture

ONE WAY ANOVA

Summary of Data						
	Treatments					
	1	2	3	4	5	Total
N	5	5	5	5	5	25
∑X	100	100	100	100	100	500
Mean	20	20	20	20	20	20
$\sum X^2$	3744	3040	2880	2576	2616	14856
Std. Dev	22.88	18.12	16.83	14	14.40	16.22

Result Details				
Source	**SS**	**df**	**MS**	
Between-treatments	0	5	0	F = 0
Within-treatments	4656	21	224	
Total	4656	26		

The Std. Dev is 16.22, The f-ratio value is 0. The p-value is 1. The result is not significant at $p < .05$.

Std.Dev of Involvement in decision making process is 20.8806, Standard Deviation of Involvement in collective bargaining process is 18.12, Standard Deviation of involvement in quality circle and work is 16.83, Standard Deviation of Involvement in works council & suggestion scheme is 14.

Finding:

Employee involvement in management is one of the best approach for the development of organization, there are number of approaches are available for employees involvement in management like collective bargaining, works council, suggestion scheme and quality circle for the organizational growth. Some companies does not involve the workers for the decision making process, the bad result will get for these organization Most of the companies are adopt such types of employees' participation in decision-making process. Employee contribution is one of the traditions of Job satisfaction and better decision making, establishment has to permit the employee in their administration process it has rise the communication, efficiency of the employees, productivity, increase the trust level and industrial peace and eliminate industrial disputes.

Suggestions:

1. Management should have a more liberal attitude towards employees; It should be progressive in sharing information.
2. The trade union should be fully supporting the management for the participation in management.
3. The decisions of joint works councils must be implemented in good faith.
4. Managements and workers should develop a proper attitude, proper co-operation and co-ordination with each other.
5. The participation should be indisputable. The decisions should be timely implemented and strictly followed.
6. Encourage the mutual understanding between management & workers.
7. Generate a proper atmosphere for pleasant & melodious employer-employee relation.

Conclusion:

Employee involvement is one of the changing factors of job fulfilment and it generates strong relationship between administration and employees. Nearly all the enterprises having transmission gap between employer and employee. Employee involvement help to reduce transmission difference between employer and employee. Management tries to increase communication with the workers through suggestion scheme, quality circle and works council so the employees can communicate their views and ideas with the management, the valuable ideas of the employees help to increase the productivity as well quality and helps to achieve the organization goals. Association must create good working environment, through collective bargaining process, It will be beneficial to the organization to attain its aims and increase the productivity.

There is a substantial association between organizational culture and employee contributing in management while taking of any types of decisions. The companies must accept the organizational culture that creates good working environment which inspires workers for participation in decision making process.

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EXIT INTERVIEWS ARE THEY EFFCTIVE ?

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Abstract:

A competitive edge enjoyed by an organization today over other market players is likely to vanish tomorrow. Organizations are increasingly becoming aware of this challenge. To keep ahead of others, they are required to constantly innovate. So, diligent harnessing of knowledge has become the new mantra for them. In its pursuit, businesses are leaning heavily towards cross functional teams; process and product based teams or simply work groups. Organizations are encouraging team members to capture new ideas and spread knowledge across the organization for an overall increase in efficiency. High performing businesses are known to gather more and better information about their business and that of their competitors. They use information so collected and its analysis for decision making. They monitor their performances critically and use their feedback to continuously improve their business processing. In the process, people have become the critical input for organizational growth.

Thus every organization is today looking for the best, brightest, most dynamic and the mostproductiveworkers.Indeed,locatingknowledgeworkers,hiringandretainingthemintheorganization has become the prime function of organizations. Simultaneously, employees too have become choosier of their employees. Today, they look for organizations which offer them the chance to use their skills to the maximum, an employer who can tell them what they can do better, an organization that offers them excellent scope to do better, an organization that offers them excellent scope to grow intellectually, a job that challenges their wisdom, a leadership that can be relied upon.

It is often noted, particularly in the field of IT that the attitude of an employee and the way it is being respected by the employer play a significant role in Building commitment to work and loyalty for a company. For instance, incubators often feel that the best way to learn developing a business idea is to do it oneself something which good organizations encourage their employees to do. Organizations are known to consider failure as a positive input as it helps ensure that the same mistake would not recur. Having said that, the penalty for failure in India is very high. Thus, "employee satisfaction" at a given job has become the prime

determinant of "employee performance " and " employee loyalty".

Keywords:

Employee turn over and its Consequences**,** Process and product based teams, Competitors, Employee satisfaction, Employee performance, Employee loyalty. <u>Employee turn over and its Consequences</u> "Employee turnover" is the employee's voluntary decision to leave an organization. It is a mere exercise of choice by an employee - a choice to move from one organization to another, often in search of better prospects as perceived by the employee. Common sense dictates that it is a mostly a migration from the "existing dissatisfying" environment to a "prospective- satisfying" environment dissatisfaction in any form. Traditionally speaking, an employee exercises such a choice when the present job is not satisfying and at the same time it is pretty easy to find a new one. Thus, leaving an existing job for a new one is quite a deliberate and pre determined act of employee. Incidentally, all such employees are able of in new job seasily are mostly found to be highly skilled and that is what is disturbing the business most, for in today's knowledgeeconomy,suchmigrationofknowledgeworkersresultsinheavycosts.

Employee turn over reveals that it has many adverse implications for a business:

Employee turnover is pretty expensive in terms of frequent recruitments, training and induction of new employees in to the system:

❖ Excessiveemployeeturnovernecessarilyresultsindisruptionofdeliveryofquality servicetothecustomersleadingtopoorgrowthinsalesandinbusinessasa whole and

❖ It also impacts the overall productivity of teams, besides affecting the morale of employees by forcing them to share extra loads resulting from frequent shortages of staff.

In today's knowledge intensive economy, such frequent employee turnover imposes indirect costs in terms of loss of skills, loss of organizational knowledge and adverse impact on the morale of the employees continuing in the organization. At times, such indirect costs may be been higher than the direct costs. Employee turnover has thus become the concern of whole business calling for effective measures to keep it under check. It is to understand better the underlying reasons for employee turnover that the organizations have started conducting "exit interviews". It is indeed considered one of the best tools to obtain feedback on employees' experiences within the organization. In these times of low unemployment and high staff turnover, it's only natural for the employer to want to identify the reasons for a employee leaving. From the company's point of view, an exit interview can provide invaluable feedback about employee's attitudes towards the working environment, the terms and conditions of their work, whether there are any systems or procedures that they need to adopt and the effect of morale (or lack of it) at the work place and the organization as a whole

<u>What is an Exit Interview ?</u>

An exit interview is typically a meeting between at least one representative from a company's human resources (HR) department and a departing employee. (The departing employee usually has voluntarily resigned vs. getting laid off or fired.) At an exit interview, former employees or volunteers are asked for their feedback on the agency and their experiences, and the reason(s) for leaving.

According to a white paper titled "Exit Interviews" by Nina Drake and lan Robb from the Society for Human Resource Management (SHRM), "exit interviews represent a prime opportunity to gain candid information on employment conditions" within a company. One should, however not confuse exit interview with counseling sessions, which many organizations routinely conduct, whenever an employee resigns, to find out as to the real reasons for such an extreme step. Also, whether the employee is prepared to reconsider his decisions provided the management make some marginal concessions. These are part of the pre- acceptance stage. Once it is decided to accept the resignation letter, or to actually fire an employee, the stage is set for conducting an exit interview.

PURPOSE

- Anexitinterviewsamongstotherthingsoffersthe organizationanopportunityto:
- Ascertain the actual reasons for an employees resignation
- Gather data on problem areas, in order to help the management take corrective actions
- Help in identifying disturbing trends and patterns
- Identify root causes of turnover
- Retain a competent employee by understanding the origin of discontent and agreeing on feasible solutions
- Encourage good relations with the separated employee

Exit interviews are also an opportunity for the organization to enable transfer of knowledge and experience from the departing employee to a successor or replacement, or even to brief a team on current projects, issues and contacts. Good exit interviews should also yield useful information about the employer organization, to assess and improve all aspects of the working environment, culture, processes and systems. management and development, etc., in fact anything that determines the quality of the organization, both in terms of its relationship with its staff, customers, suppliers, third-parties and the general public. From the departing employee perspective, an exit interview is a chance to give some constructive feedback, and to leave on a positive note, with good relations and mutual respect. The exit interview is an opportunity to shake hands and leave friends, not enemies.

On many occasions employees' leave an organization because of reasons which can, if communicated properly to the concerned authorities, can be easily rectified or removed completely. These are generally employees with a timid nature and approach who would rather quit silently than create a nuisance. An exit interview presents a perfect opportunity to overcome this situation by opening up the lines of communication and allowing the departing employee to give vent to his feeling sand his reasons for leaving. If the employee is considered an asset to the organization and if the reasons for leaving can be resolved amicably and feasibly, the employee can be convinced to stay on in the organization. This can save a lot of costs as the recruitment process is a very expensive process. Exit interviews can provide vital clues about the functioning, culture and ethos of an organization. A clear understanding of these issues is important for strategic orientation and sometimes can throw up revealing and embarrassing issues which when addressed can bring about dynamic and revolution any progress in organizations.

EFFECTIVE EXIT INTERVIEWS

Given the nature of exit interviews and the kind of information that tends to be exchanged in the process, it is imperative that these interviews are conducted with utmost care and precision. For exit interviews to be effective one has to pay attention to all the aspects which have a bearing on the outcome of the interview. Its primary objective is to gather as much detail from the departing employee and hence it is necessary to create a congenial environment and climate for the same and care should be taken as to who conducts the interview, the questions asked, the timing of the interview and the physical setting.

✓ THEINTERVIEWER

It is up to the discussion of the top management to decide who conducts the interview, depending on the organizational norms. If the culture of the organization is open and encourages eliciting frank and candid responses from its departing employees, it is always better to go for an internal interviewer. Then, the question arises as to who it should be. A very good choice is a person from the HR department. There as on being : 1) They are better trained to conduct exit inter views; 2) It avoid she at arguments if the departing employee has a problem with a functional area. If the employee is likely to have a lot of negative feelings which he may not be very comfortable to share with employees of the same department, for the fear of damaging his future references, a neutral third party can be arranged to conduct the exit interview. This motivates the employees to let out their opinions more candidly instead should actively pay attention to both verbal and non verbal communication and make note of everything being said by the employee. It should be made amply clear to the outgoing employee that he will not be harmed or victimized for whatever he says. The interviewer should bear in mind that there are no wrong or right answers and he is only interested in knowing how the employee perceives the organization and its policies. They are supposed to be good listeners and have an ability to judge the truthfulness of the employees' responses.

✓ KINDOFINFORMATIONSOUGHT

While seeking information from the employees the following aspects must be covered: How was the employee recruited, why the employee joined the company (reasons like association, compensation, etc), and the employees' perception of his job, employees' expectations, training and development, compensation, supervision, career advancement, recognition, organization culture, goal congruence, co-workers and soon. What can you say a bout the processes and procedures or systems that have contributed to the problem(s) / your decision to leave?

- What specific suggestions would you have for how the organization Could manage this situation / the issues better in future?

- What has been enjoyable/satisfying for you in your time with us?

- What has been frustrating/ difficult to you in your time with us? How could the organization have enabled you to make fuller use of your cap abilities and potential?

- How well do think your training and development needs were as sessed and met?

- What can you say about communications within the organization / your department?

- How would you describe the culture or 'feel' of the organization?

- How could you have been helped to better know / understand / work with other departments necessary for the organization to perform more effectively?

- What can you say about the way your performance was measured, and the feed back to you of your performance results ?

- Howcouldtheorganizationreducestresslevelsamongemployeeswherestress is an issue?

Whatcantheorganizationdotoretainitsbestpeoplewouldyouconsiderworkingagainforusifthesituationwere right?

✔ TIMINGOFTHEINTERVIEW

It can be conducted as soon as the employee informs about the decision to quit. That gives an opportunity for the interviewer to direct the employee towards rethinking his decision. It can also be planned on the last day o the employees' stint with the organization. The timing become scrucial in the sense that if it is too early then there is a chance that the employee.

Might not open up for the fear of any backlash. On the other hand if it is conducted after the employee has left the organization, say two to three months later, it is more likely that the employee may not take the interview seriously or is least interested as he might have already moved on with his life and might have lost the emotional bond with the organization.

✓ INTERVIEWCLIMATE

The climate in which the interview is being conducted should be positive and professional. A clear understanding about the purpose of the interview should be clear for both the interviewer as well as the interviewee. This helps in creating a congenial atmosphere for fruitful discussionsra ther than just completing an other formality.

✓ PHYSICALSETTING

The physical setting should be given proper attention. Exit interviews should not be conducted in public place slikec of fee shops or can teens or in places where they may be over heard by supervisors or other employees passing by. It is always better to conduct them in the HR department's private office or in the premises of the third party do in git.

BACKGROUNDSTUDY

Prior to meeting the employee, the interviewer should analyze all the available in formation relating to the employees personal history, work performance and conditions. The super visor must be asked to make available resources such as competence ratings; production records and other significant data.

✓ RECORDINGINTERVIEWDATA

✓ An exit interview report must be precise; include adequate details and must be recorded as soon as possible after the interview, but not in the presence of the employee. Information may be put down discreetly after the interviewer establishes good understanding with the worker.

DATAANALYSIS

The data collected from the interviews must be aggregated for the organization as a whole to identify the prime causes for employee turnover. Depending on the size of the organization and the prevailing level of employee turnover, such aggregation may be made semiannually or quarterly. The same may be accessible to all those concerned with the working climate in the organization and its improvement. The outgoing employees' feedback can be shared with the supervisor or manager. However anonymity must be maintained by not giving specific feed back to the immediate supervisor or manager of the outgoing employee. This feedback can prove to be reflective and productive. It is important that the interviewer share his understanding of the out going employees' feedback in generic terms with the concerned supervisor or manager. It should be made very clear to the supervisor or manager that whether the feedback is positive or negative they should asses it objectively and non-defensively to identify the value of the feed back for improving the overall work atmosphere in the organization. In the ultimate an alys is, organizations must realize there is no single solution to employee turnover, but if exit interviews are properly conducted, the feedback so received can be best used to improve organizational culture that paves the way for employee retention and loyalty.

EXIT INTERVIEW METHODS

There are a variety of methods available for conducting exit interviews. Each of them has its own pros and cons. It is up to the discretion of the top management and the HR department of the organization to select the method which best suits their needs.

✔IN PERSON EXIT INTERVIEW

For "in person exit interviews" an HR representative meets individually with each employee. This method gives a personal touch to each employee and provides an opportunity to probe for more information on each interview question. The downside of conducting an in person exit interview is that employees might be afraid to share sensitive information. For larger companies, it may be too consuming to exit interview every employee. Also, it's difficult to track information received verbally during an interview.

✓ TELEPHONEEXITINTERVIEWS

Telephone exit interviews are conducted over the telephone by an HR representative or an outside third party consultant. Using this method the interviewer can probe for more information and enter data into a tracking system while conducting the exit interview. In addition, this can be easier to schedule than an in-person interview. The disadvantages of this method are that, it is time consuming if done in house by an HR representative, expensive if done with an outside consultant and employees are often reluctant to verbally share sensitive or negative information.

✓ PAPERANDPENCILEXITINTERVIEW

These interviews are usually conducted by using "form" that is given to the employees on their last day or mailed to the employees' residence. The advantages of conducting a paper pencil interview are that it takes less time to provide an exit interview form compared to conducting an in person or phone exit interview, employees can share information on paper which they migh be reluctant to say in person. The negative aspect of using this method are that it is difficult and time consuming to compile and track data from paper and pencil interviews.

✓ ONLINEEXITINTERVIEWSYSTEM

Online exit interviews are easy for the HR staff to administer, employees are comfortable sharing information through computer and so there are more honest responses, and information is automatically compiled and tracked. Added advantages are that reports are available at the click of a button and participation rates are double than for paper and pencil interviews.

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OUTSOURCINGEXITINTERVIEWS

While hiring, more and more organizations are turning to professionals to do the screening of prospective candidates through the services of Assessment and Development centers. When it comes to conducting exit interviews for departing employees, the company can turn to many HR firms who to do a professional job and get the employees feedback on a wide area of concerns. These firms provide an efficient method to identify specific issues and discover manager practices that may be contributing to employee turnover in organizations. They also provide professional guidance as to how to conduct such interviews, effectively, in house. Exiting employees might understandably open up more freely with outsiders and if the professionals are briefed well in advance the interview process can be very meaningful. The employee may clam up as soon as his immediate boss or any colleague walks in while the interview is in process. As such, even if the interview is conducted in house in a different office there are chances of the process being disturbed.

BENEFITS

- Exitinterviewsprovideanopportunityto'makepeacewithdisgruntledemployees,whomightotherwiseleave with vengeful intentions.
- Exit interviews are seen by existing employees as a sign of positive culture. They are regarded as caring and compassionate - a sign that the organization is big enough to expose it self to criticism.
- Exit interviews accelerate participating managers' understanding and experience of managing people and organizations. Hearing and handling feed back is a powerful process.
- Exit interviews help to support an organization's proper HR practices. They are seen as positive and necessary for quality and effective people-management by most professional institutes and accrediting bodies concerned with quality management of people, organizations and service.
- The results and analysis of exit interviews provide relevant and useful data directly in to training needs analysis and training planning processes.
- Exit interviews provide valuable information as to how to improve recruitment and induction of new employees.
- Exit interviews provide direct indications as to how to improve staff retention.
- Sometimes an exit interview provides the chance to retain a valuable employee who would otherwise have left (organizations often accept resignations far too readily with out discussion or testing the firmness of feeling the exit interview provides a final safety net)

A significant proportion of employee leavers will be people that the organization is actually very sorry to leave (despite the post- rationalization and sour grapes reactions of many senior executives to the departure of their best people). The exit interview there for provides an excellent source of comment and opportunity relating to management succession planning.

Good people leave often because they are denied opportunity to grow and advance. Wherever this is happening organizations need to know about it and respond accordingly.

- Every organization has at any point in time several good people on the verge of leaving because they are not given the opportunity to grow and develop, at the same time, ironically, that most of the management and executives are overworked and stretched, some to the point of leaving too. It therefore make good sense to raise the importance of marrying these two situations to provide advantage both ways - i.e., facilitate greater delegation of responsibility to those who want it? Exit interviews are an excellent catalyst for identifying specific mistakes and improvement opportunities in this vital area of management development and succession.
- A properly organized, positive exit process also greatly improve the chances of successfully obtaining and transferring useful knowledge, contacts, insights, tips and experience, from the departing employee to all those needing to know it, especially successors and replacements. Most leavers are happy to help if you have the courage and decency to ask and provide a suitable method for the knowledge transfer, be it a briefing meeting, a one-to-one meeting between the replacement and the leaver, or during the exit interview it self.

➢ BENEFITS : A WIN - WIN SITUATION FOR THEE MPLOYEE AND THE ORGANISATION

WIN-WIN INTERVIEW : BENEFITS FOR THE EMPLOYEE AND THE RGANISATION				
BENEFITS	EXISTING		ORGANISATIO	BENEFITS
• ABILITY TO EXPRESS SELF		REASON (S) FOR DEPARTURE SECURITY CONFIDENT IALITY		• INCREASE RETENTION
• SENSE OF CLOSURE				• IDENTIFY ROOT CAUSES OF TURNOVE
• SENSE OF CLOSURE		PROCESS IMPROVEMENT SUGGESTIONS		• IDENTIFY CORRECTIVACTIONS
• UNDERSTANDING OF SEVERANCE AGREEMENT		PROCESS IMPROVEMENT SUGGESTIONS STRUCTERED QUESSTIONNAIRE		• IDENTIFY PREVENTIVEACTIONS
• PROCEDURE FOR RECEIPT OF FINAL PAYMENT PPF GRATUITY ETC		ADVICE FOR SUCCESSOR		• ENHANCE WORK FOR CECOMMITMENT

• OPPORTUNITY TO SKQUESTIONS	E M P L O Y E E	PROFESSIONAL IMAGE INSIGHT IN TO CULTURAL CLIMATE SENSE OF TAKING EMPLOYEE SERIOUSLY POTENTIAL LEGALISSUES	N	• TAILOR NEW • EMPLOYEE ORIENTATIO N • GAIN CULTURAL AWARENESS • IMPROVE ORGANISATIONAL PERFORMANCE

EXITINTERVIEWSAS AKMTOOL!

In recent times, the concept of Knowledge Management (KM) has underlined the importance of conducting exit interviews. In recording both the explicit knowledge and the tacit knowledge with the employee leaving the service, the organization could have the benefit of a shorter learning curve for new employees joining the service; at the same time, it would not lose vital market knowledge. The outgoing person is also likely to feel lesser hostility towards the organization, if his expertise is recognized, even if belatedly. If the company organizes extensive de briefing sessions, indicating their acknowledgement of the employees' superiority in his particular area of work, the bitterness, if any, will disappear. If done correctly, it can be a win-win situation for both. As soon as an employee puts in his paper or is asked to leave, the concerned division of the organization should go into a higher state of alert. A replacement

should be chosen, unless the job is being phased out, who should get in touch with the out going employee.

All relevant information on the PC should be transferred to a shared area, and personal briefings should be organized for picking up the "tips". If this is done for senior level employees, valuable insights would not be lost for ever. Some degree of understudy period with the out going employee will yield immense benefits, especially as his guidance may not be available hence forth. During this period, or, more so if it is restricted to only an exit interview, lasting for about an hour or so, the domain knowledge and the skill areas should be marked out, and specific questions on danger areas, which require to be constantly monitored, should be noted down to make the interview process meaningful. In the process, one must not lose sight of the original purpose of the interview as a diagnostic tool in HR.

2.ITandITESIndustry

(Information Technology and Information Technology Enabled Services / Remote Services or Web Enabled Services)

The high percentage of females in the workforce (constituting 30-35 percent of the total), adds to the high attrition rate. Most women leave their job either after marriage or because of social pressures caused by irregular working hours in the industry. All this translates into huge losses for the company, which invests a lot of money in training them.

If a person leaves after the training it costs the company about Rs 60,000. For a 300-seater call centre facing the normal 30 percent attrition, this translates into Rs 60 lakh per annum. Many experts are of believe that all these challenges can turn out to be a real dampener in the growth of this industry. This only raises the responsibility of "finding the right candidate" and building a "conducive work environment", which will be beneficial for the organization. The need is for those individuals who can make a career out of this.

All this has induced the companies to take necessary steps, both internally and externally. Internally most HR managers are busy putting in efforts on the development of their employees, building innovative retention and motivational schemes (which was more money oriented so far) and making the environment livelier Out side, the focus is on creating awareness through seminars and going to campuses for recruitment High Attrition is a major problem. At least60,000 of the 171,000 workforce change jobs every year. About 80% of them look for better leaders. Team leaders want to upgrade to supervisors, quality professionals or operations heads. The HR problem threatens to soon become grave Good agents are becoming hard to find and with tardy infrastructure, big moves to the much talked about smaller towns will take longer. This means costs will rise making it difficult for small VC-funded companies to survive (Venture Capital).

ATTRITIONRATES

UG	42%
AUSTRALIA	29%

EUROPE	24%
INDIA	18%
GlobalAverage24%	

An attrition rate in call (or contact) centers has become legendary. Indeed, the attrition rates in some Indian call centers now reach 80%. This is an extreme figure but the average attrition rates in Indian call centers are up around 30-40%. There are various costs associated with attrition:

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Costs Due to a Person Leaving

- The cost of the person(s) who fills in while the position is vacant. Calculate the cost of lost productivity at a minimum of 50% of the person's compensation and benefits cost for each week the position is vacant, even if there are people performing the work. Calculate the lost productivity at 100% of the position is completely vacant for any period of time.
- The cost of conducting an exit interview to include the time of the person conducting the interview, the time of the person leaving, the administrative costs of stopping payroll, benefit deductions, benefit enrollments.
- The cost of the manager who has to understand what work remains and how to cover that work until a replacement is found.
- The cost of training your company has invested in this employee who is leaving.
- The impact on departmental productivity because the person is leaving. Who will pick up the work, whose work will suffer, what departmental deadlines will not be met or delivered late
- The cost of lost knowledge, skills and contacts that the person who is leaving is taking with them out of your door.

Recruitment Costs

- The cost of advertisements ;agency costs; employee referral costs; internet posting costs.
-
- The cost of the internal recruiter's time to understand the position requirements, develop and implement a sourcing strategy review candidates backgrounds, prepare for interviews, conduct interviews, prepare candidate assessments, conduct reference checks, make the employment offer and notify unsuccessful candidates. This can range from a minimum of 30 hours too ver100 hours per position.
-
- The cost of the various candidate pre-employment tests to help assess a candidates' skills, abilities, aptitude, attitude, values and behaviors. Training Costs

- The cost of orientation in terms of the new person's salary and the cost of the person who conducts the orientation. Also include the cost of orientation materials.
- The cost of departmental training as the actual development and delivery cost plus the cost of the salary of the new employee. Note that the cost will be significantly higher for some positions such as sales representatives and call center agents who require 4-6

weeks or more of classroom training.

- The cost of the person(s) who conduct the training.
- The cost of various training materials needed including company or product manuals, computer or other technology equipment used in the delivery of training.

Lost Productivity Costs

- As the new employee is learning the new job, the company policies and practices, etc. they are not fully productive, the cost of this lost productivity:
- Upon completion of whatever training is provided, the employee is contributing at a 25% productivity level for the first 2-4 weeks. The cost there fore is 75% of the new employee’s full salary during that time period.
- During weeks 5 12, the employee is contributing at a 50% productivity level. The cost is there fore 50% of full during that time period.
- During weeks 13 20, the employee is contributing at a 75% productivity level. The cost is there fore 25% of full salary during that time period.
- The cost of mistakes the new employee makes during this elongated indoctrination period.

New Hire Costs

- The cost of bring the new person on board including the cost to put the person on the payroll, establish computer and security passwords and identification cards, telephone hookups, cost of establishing email accounts, or leasing other equipment such as cell phones, automobiles.
- The cost of a manager's time spent developing trust and building confidence in the new employee's work.

Lost Sales Costs

There venue per employee by dividing total company revenue by the average number of employees in a given year. Whether an employee contributes directly or indirectly to the generation of revenue, their purpose is to provide some defined set of responsibilities that are necessary to the generation of revenue. Calculate the lost revenue by multiplying the number of weeks the position is vacant by the average weekly. RESEARCH METHODLOGY

SAMPLING TECHNIQUE

We have used Snowball sampling which is a special non probability method. Snowball sampling relies on referrals from initial subjects to generate additional subjects. For our sample we have relied on our acquaintances in the IT industry and their contacts in the IT industry.

DATA COLLECTION METHOD

The project demanded an extensive first hand data collection so primary data was a major source of information but even secondary data through reliable sources played an important part in the completion of the project. We interviewed our target audience face to face and on a one to one basis.

AN ALYSIS PROCEDURE

Firstly we systematically arranged the data in the excel sheet. Since the piediagram facilitates to diagrammatically represent our findings we have extensively used it in our report.

SAMPLE

I surveyed 56 professionals from the IT industry which covered companies like Infosys, Aptech, Hexaware, Reliance, HCL, Tata Tele, Patni, etc. The survey was conducted by administering as tructured questionnaire through online and personal interviews.

Number of Response: 56

Name of IT Industry	Tata Tele	Hexaware	Patni	HCL	Satyam	Godrej Infotech	Infosys	Others
Number of Professonals	9	7	15	9	4	6	3	3

FINDING & ANALYSIS The major findings of our survey are as under.

- Who conducted your exit interview?

Out of the 56 employees surveyed, 39 employees said that the HR manager conducted the interview. 5 employees said that the interview was conducted by the functional head. 12 employees said that the interview was conducted by the immediate boss.

EXIT INTERVIEW CONDUCTED BY

HRMANAGER	IMMEDIATE HEAD	FUNCTIONAL HEAD	OTHERS
39	12	5	0

The exit interview may not be effective if it is conducted by the immediate boss. This is quite evident from our survey results, which show that, in most of the IT companies, exit interviews are conducted by the HR managers.

- What was your impression about the exit interview process?

Out of the 56 employees surveyed, 78% felt that their exit interview was structured and formal,whereas22%feltthatthe interview was unstructured and informal.

INTERVIEW FORMAT

Structured	Unstructured	Formal	Informal
23	10	17	4

Exit interviews should be structured so that all the relevant information can be properly recorded for analysis and implementation. It should also be formal for middle level employees, whereas it can be informal for higher level employees. Utmost importance should be given to the environment in which the interview is conducted, so that the employees feel comfortable in divulging the exactre as on that lead to for their leaving the organization.

- Did you take the process seriously?

Out of the 56 employees, 44 employees said that they took the exit interview process seriously,whereas12employeessaidtheywere not serious while being interviewed.

Serious	Not serious
44	12

Were you honestiny our replies in the exit interview?

50 employees of the 56 employees said they were honest with their replies in the exit interview where as,

6 employees said that they were not too honest in their replies.

Yes	No
50	6

Employee is honest with his answers. Only is such a case, will the information collected be useful.

- Do you think that the opinions given by you in the exit interview can be used against you? If Yes, then in what way?

Only 19 of the employees felt that the opinions given by them in the exit interview can be used against them. While majority of them felt the opinions given by them during the exit interview can adversely affect their references, others felt that it may adversely affect the background checks by prospective employers. Some employees felt that negative feedback given by them in the exit interview may ruin their chances of joining the same company in the future. Employees, who left the company after a prolonged strained relation, also feared the chances of future litigation by the company.

Hence, it is imperative that the feedback given should be kept confidential and also it has to be communicated to the employees that such information would not be used against them in any case whatsoever. Only then, would the employees be honest in the ir replies.

- Did the interviewer make an attempt to retain you in the organization?

Of the 56 employees who were interviewed, 48 of the employees replied that an effort was made to retain them in the organization while the other 8 replied that an attempt was not

Yes	No
48	8

made.

Exit interviews should be used as the last resort to retain valuable employees. It should be used as a platform to clear misunderstandings with the employees. Moreover, the costs involved in hiring a new employee would be higher, so efforts should be made to retain valuable employees.

- If yes, was the interviewer successful in retaining you?

Of the 56 employees who said an attempt was made to retain them in the organization, 6 employees said they were successfully retained in the organization, whereas the other 50 said the organization was unsuccessful in retaining them.

Yes	No
6	50

Though the % of employees retained is less, it still proves that exit interviews can be used as a successful tool to retain employees.

- If yes, what was the reason that prompted you to stay back?

The various reasons given by the employees that prompted them to stay back in the organization were:

CHANGEINJOBPROFILEPROMOTION

SALARY HIKERELOCATIONBENEFITS

Though the reasons for this were varied but it shows that if an attempt is made to find out why the employee is leaving and if appropriate steps are made to retain desired employees by using the information given by them, the company is successful in retaining these employees.

Do you think that the feedback taken in an exit interview will be analyses and the existing processes improved based on the same?

Of the 56 employees who were interviewed 81% of the employees felt that the data would be analyzed and the process improved based on the same. Hence, organizations should record the valuable feedback given by the employees, analyze it and improve the system based on the same.

- Are you a ware of any changes that have been implemented based on your feed back in the exit interview?

Yes	No
18	38

Though only 32% of the employees said, changes were made based on their feed back ; it shows that exit interviews can be used as an effective tool to improve the system.

- Do you think the exit interviews are effective?

Out of the 56 employees,36 employees felt that exit interviews are effective, where as 20 employees felt that they are not.

Effective	Non effective
36	20

CONCLUSION:

Exit interviews offer an ephemeral, though useful opportunity, to gather information that might be otherwise difficult or impossible to find out. They provide a good mechanism to take a hard look at how the company is being perceived and help gather data for improving working conditions. They help avoid costly litigations down the road, caused by disgruntled employees and help maintain good relations with the departing employee. These interviews can also result in the departing employee having a more positive view of the organization resulting in a win-win situation for the organization Exit interviews also help cross check the validity of the employee perception survey and opinion polls. They not only help hold back the exiting employees but also retain them, by working on the information gathered during the interview. They also help assess key dimensions of the organization like supervision, compensation; training and development, infrastructure, culture and communication etc. Finally these interviews help identify malicious staff, manipulative managers and other day to day concerns. Though exit interviews are being used extensively across all the industries, utilization of the information so collected is questionable. Lack of proper documentation of the information and lack of follow up activit defeats the very purpose of this interview. The information collected during the exit interview must be properly documented so that atrend analysis can be made and the results analyzed. It is a common refrain that the CEO's or other senior officers designated to conduct these interviews do not find time for the same Action on the issues raised in these interviews also has to be addressed with some urgency. Companies should note that inordinate delays not only undermine the employees' perception about the entire process but send negative signals about the company's commitment. Exit interviews are excellent tools, the onus

However lies on the organization to utilize them not only as indispensable tools for retention, but also for the overall organizational development.

Hence based on these find ingsit can be concluded that

EXIT INTERVIEWS ARE EFFECTIVE AND CAN BE USED AS A LAST RESORT TORETAIN EMPLOYEES SUBJECTED TO THE CONSTRANTSTHATITISCONDUCTEDSERIOUSLYINANENABLINGENVIORMENT ANDDATASO

COLLECTED IS ANALYSED AND IMPLEMENTED. RECOMMENDATIONS:

To make sure that the Exit interviews are effective the following things should be kept in mind

while conducting exit interviews

- The objective of the interview should be clearly communicated to the employee. When the purpose behind conducting the interview is communicated effectively to the employee, the employee takes the interview seriously and provides valuable inputs which will subsequently help the HR manager.
- It should be more of a listening process for the HR manager. The HR manger should not be judgmental about the views expressed by the employee and should not try defend the company if the employee expresses his displeasure.
- Confidentiality should be strictly maintained. The HR manager should assure the employee that the interview details would be confidential and would not be used against the employee. This helps the employee loosen up and provide accurate details with out any fear of litigation.
- The data collected should be properly documented for analysis at a later period. The whole rationale behind conducting the interview is to make sure that the feed back provided analyzed and improvements if any are implemented. So the documentation holds the key to a successful exit interview procedure and should not be carelessly done.
- Issues raised should be tackled with sense of urgency. It is possible that the issues raised are important and is amajorfact or affecting turnover. In that case the HR

manager should take effective measures with respect to the feedback provided to curb turn over immediately.

- de ally it should be conducted on the last day and not later as the emotional touch is lost if conducted later. The timing becomes crucial in the sense that if it is too early then there is a chance that the employee might not open up for the fear of any backlash. On the other hand if it is conducted after the employee has left the organization, say two to three months later, it is more likely that the employee may not take the interview seriously or is least interested as he might have already moved on with his life and might have lost thee motional bond with the organization.

- Notice period should be used for informal retention efforts. Informal retention method scan be used as soon as the employee informs about the decision to quit. That gives an opportunity for the interview ertodirect the employee to wards rethinking his decision.

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Analysis of Asymmetric Cryptographic Algorithms: A Review

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Abstract

Cryptography is a subject which is widely discussed and researched upon in the field of computer science in domain of network security. In data communication it is essential to ensure that no unauthorized entity is able to access the messages that are being communicated between a group of authorized persons, which may be possibly working for an organisation. Security of the data, messages or transactions is of the utmost importance when there is requirement of exchanging confidential information. Cryptography is a process to develop algorithms using mathematical or logical formulas and hypothesis that can convert the readable messages into non-readable textual format(encryption) , these cryptographic algorithms also make use of keys for encrypting and decrypting the messages, and with the use of the keys there comes an issue of key management apart from the process of encryption and decryption of the messages. Various techniques are discovered and practiced to enforce this type of security to the messages, and are categorized into two broad fields i.e. symmetric and asymmetric cryptographic algorithms. This paper analyses and discuss the various asymmetric cryptographic algorithms and their applications in the domain of security.

Keywords: Cryptography, symmetric cryptography, asymmetric cryptography, encryption, decryption, network security.

1. Introduction

Establishing and enhancing the communication between computers and network devices is a common way of exchanging valuable data and confidential information that is essential for carrying out simpler to complex business tasks. But at the same time it is equally important to ensure the security of these messages, and maintaining its integrity, because if the security of such confidential information is compromised and it gets leaked or moves out of control, then it would be easier for the attackers to get access to these information and gets control of it, and then they could alter or make false copies of these information, which ultimately lead s to harm to the business. Cryptography in its simplest sense is basically an art and science of protecting the confidentiality, integrity and authenticity of data by transforming the readable data messages or transactions into a non-readable textual format which does not highlight any sensible information. This procedure of securing the data by changing its textual representation is also known as encryption and the encrypted form of the data (the non-readable textual representation) is called cipher text, and the original form of the data (or the original messages) which are encrypted is called plain text. Encryption is done so that if at any instance the network over which the data is being transmitted gets corrupted and any unauthorised personnel gets access to the data messages, that he/she is unable to extract any information out of that encrypted message. Only the sender and the receiver of the message has the mechanism to encode or decode the message and authority to fetch its true meaning. The process of converting the cipher text back to its original representation i.e. plain text is also known as decryption.

Various techniques are used in process of encryption and decryption of the messages, and these techniques are broadly classified into transposition and substitution. The basic difference between these two is that in substitution technique the characters of the plain text message are substituted or replaced with other characters based on some specific replacement policy, while in transposition technique the characters of the plain text messages are not changed but their position in the text is changed based on a specific rotational policy. Some of the common techniques based on the substitution and transposition techniques are:

1. Substitution Cipher
   - Caesar Cipher – Encrypts the plain text by replacing each character in the plain text by replacing it with characters that is three position ahead or upwards alphabetically. E.g. 'A' in "APPLE" is replaced by 'D' and the corresponding cipher text obtained is "DSSOH".
   - Polyalphabetic cipher – Each character in the plaint text can be replaced by different characters, for e.g. if there are 2 'P's in "APPLE" then each 'P' can be replaced by a completely different character.
   - One time pad – The name "one time pad" comes from the fact that in this technique the key is used for encryption and decryption only once and then it is discarded, also the key of the same length as the plain text is used.
   - Monoalphabetic cipher – All occurrences of each character in the plain text is replaced by the same character. For e.g. in "APPLE" , each 'P' will be replaced by the same character. The replacement policy(i.e. which character will be replaced by which alternative) is decided first before encoding the message.
2. Transposition Cipher
   - Rail-Fence technique – In rail fence technique the plain text is written in zig-zag manner from top to bottom to the depth of no. of rails. Then the individual rows of the alphabets are combined to form the cipher text.
   - Simple Columnar technique – In this technique a matrix with a fixed length

rows is used for writing the plain text characters. We start filling the matrix with the plain text characters row by row and then the cipher text is obtained by picking up the characters column-wise. The columns can be selected in any random order.

The concept of keys were used in the encryption and decryption of the messages, which introduced new techniques that were classified in two major categories i.e. symmetric and asymmetric cryptographic algorithms. Symmetric key algorithms are based on the concept of that same key is used for encryption and decryption for the messages, while asymmetric algorithms based on the concept of the public and private key. The public key is used for the encrypting the messages while private key is used for the decrypting messages. The issue of the key management is also very important and complex in both the techniques. As the technology has gain significant improvement in almost all sectors today, discovering more secure and reliable means to send messages upon a network has become a major topic of research. This paper sheds light to the different asymmetric cryptographic algorithms that is used for the purpose of providing security.

2. Symmetric Key Cryptography

Symmetric key cryptography is a technique in which plain text messages are both encrypted and decrypted using the same key. The point is that the key is available to both the sender and receiver only the sender first encrypts the message using the key, while the receiver decrypts it using the same key. So both the parties are required to exchange the keys prior to exchanging the information. The symmetric key cryptography consumes less computational power as there is a need for only one key, therefore encryption and decryption process takes less time. But the main issue resides in the key management. Key management describes how the keys are shared among the participants and how they are effectively stored and managed, now since there is only one key used for the encryption and decryption, there might be a possibility that while exchanging keys prior to the exchanging confidential information the keys might gets revealed to the attackers especially if the network over which they are being shared is not secured. Also the number of keys that are required to be shared is also very large. For n people to communicate there must be n*(n-1)/2 keys present, e.g. for 20 people there must be 190 keys shared and maintained. Therefore key management is very difficult to achieve in symmetric cryptography. Some of the most popular and standard Symmetric cryptographic algorithms that are used are DES(Data Encryption Standard), AES(Advance Encryption Standard), Triple DES, IDEA(International Data Encryption Algorihtm). However , the DES algorithm was cracked by EFF DES cracker machine in 1998 which was built by Electronic Frontier Foundation. The machine took almost 56 hours to break the DES algorithm. This proved that the key size used for DES was not sufficient which was 56 bits, i.e. approx. under 2^{56} keys the message could be encrypted.

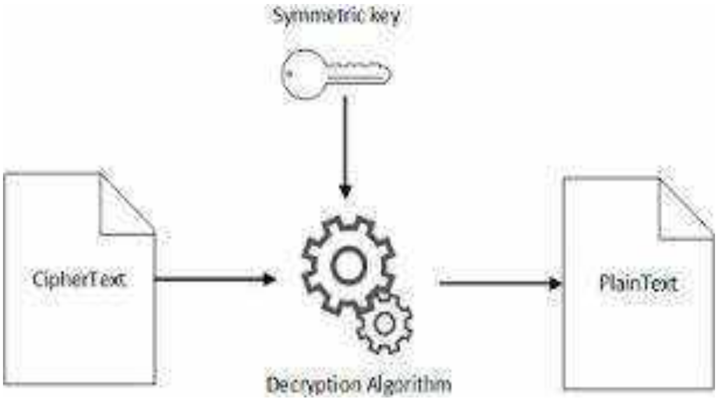
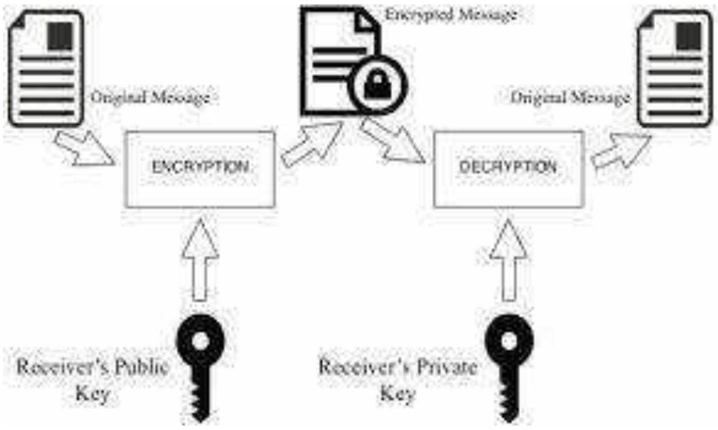


Figure 1: Symmetric Key Cryptography

3. Asymmetric Key Cryptography

In Asymmetric Key cryptography there are separate keys used for the encryption and decryption process. It works on the concept of public and private key. The public key of all the participants is made available in the pubic domain, i.e. it is accessible to all the



participants , while the private key is only known to the individual participants. The sender will use the public key of the receiver to encrypt the message, and the receiver will use his own private keyto decrypt the message. Both the keys can decrypt the data which is encrypted by each other. The data encrypted with public key of a user can be decrypted using its private key and vice- versa.

Figure 2: Asymmetric Cryptography

The concept of the private and public key enables us to use the concept of digital signatures. Digital Signatures is a mathematical concept that is used in authentication of messages, verification of electronic documents, software validation etc. Digital Signatures provide an effectual way to ensure the authenticity and data integrity of the messages, also it helps to maintain with the non-repudiation of the messages. Let us say there are two users U_A and U_B exchanging communication. The concept of digital signatures works in the process as follows:

1. The user U_A wants to send a message to the user U_B , it creates a digital signature using his own private key, and then by using the public key of U_B it encrypts the message and sends the encrypted along with the digital signature it created to the user U_B.
2. User U_B upon receiving the message uses the public key of the user U_A to decrypt the digital signature. If the signature is successfully decrypted then it means the origin of this message is valid(i.e. this message is indeed come from user U_A) and then user U_B decrypts the data by using its own private key. But if the digital signature is not validated(i.e. not decrypted using the public key of U_A), then it means the origin of this message is not valid, and this message is not come from user U_A, it can be someone else posing as user U_A and sending messages to U_B. Since the signature is signed by private key of U_A it can only be decrypted using public key of U_A.

4. Asymmetric Cryptographic Algorithms

There are various kinds of Asymmetric cryptographic algorithms that are used in data security. While each of them provides a special advantage and based on different mathematical concepts such as factorisation, discrete logarithm problem etc. These different techniques includes RSA, Diffie-Hellman key exchange, ELGAMAL Cryptosystem and Elliptic Curve Cryptography(ECC) that are discussed in detail as follows:

4.1 RSA Cryptosystem

RSA cryptosystem is a public key cryptosystem that is used in securing the data transmission. It was developed in 1977 at Government Communications Headquarters which is a British signals intelligence agency, by Ron Rivest, Adi Shamir and Leonard Adleman. The name RSA is derived from the sir names of the designers of this algorithm. The main idea behind developing the RSA cryptosystem was to create a one- way function which was supposed to be almost impossible or extremely difficult to invert. It is based on the mathematical fact that it is easy to find and multiply 2 very large prime numbers but very difficult to factorise them. The public and private key in the RSA cryptosystem is based on two very large prime numbers. The encryption and decryption process in RSA is described by the following mathematical procedure.

4.1.1 Encryption

- Choose two very large prime numbers P and Q.
- Multiply P and Q to get product N (P*Q = N)
- Select Encryption key (E) such that E is not a factor of (P-1) and (Q-1), and E is a prime number.
- Select a Decryption key (Private Key) such that it satisfies the equation (D*E) mod (P-1)*(Q-1) = 1.
- Calculate the cipher text (say CT) from plain text(say PT) as follows CT = $(PT)^E$ mod N.

4.1.2 Decryption

- Calculate Plaint text(PT) from Cipher Text(CT) as follows PT = $(CT)^D$ mod N.

4.1.3 Advantages of RSA

- RSA cryptosystem uses public key that can be shared to everyone, so that there is no need to share a secret key separately.
- RSA cryptosystem comprises multiplication of two large prime numbers, it is difficult to prime factorisation of such large prime numbers, therefore it is difficult to break.

4.1.4 Disadvantages of RSA

- RSA algorithm requires third party for reliability of their keys.
- RSA algorithm takes more computational power and processing time to perform large computations.

4.2 ELGAMAL Cryptosystem

ELGAMAL cryptosystem is an asymmetric encryption, used for public key cryptography. It is based on the Diffie-Hellman key exchange algorithm. This algorithm was developed by Taher Elgamal in 1985. The security of this algorithm is based upon the difficulty of finding the discrete logarithm problem in a cyclic group that is even if we know g^a and g^k, it is extremely difficult to compute g^{ak}, its security relies on the difficulty in computing the discrete logarithms in less time frame. Elgamal encryption can convert a single plain text into multiple cipher text. The encryption procedure in Elgamal lgorithm requires two exponentiations while there is only one exponentiation required in the decryption process. Elgamal encryption consists of a key generator, an encryption algorithm and a decryption algorithm.

4.2.1 Key Generation

- Select a large prime number P.
- Select decryption key D such as 1 <= D <= P-1
- Select the second part of encryption key E1 such as 1 <= E1 <= P-1.
- Select the third party of encryption key E2, as follows E2 = $(E1^D)$ mod P.
- Public Key is made as (P,E1,E2).

4.2.2 Encryption

- Input plain text PT into the encryption algorithm.
- Choose a random integer R and calculate the cipher text (C1,C2) such that C1

  = $E1^R$ mod P, and C2 = (PT * $E2^R$) mod P.

- This cipher text(C1,C2) is send to the receiver.

4.2.3 Decryption

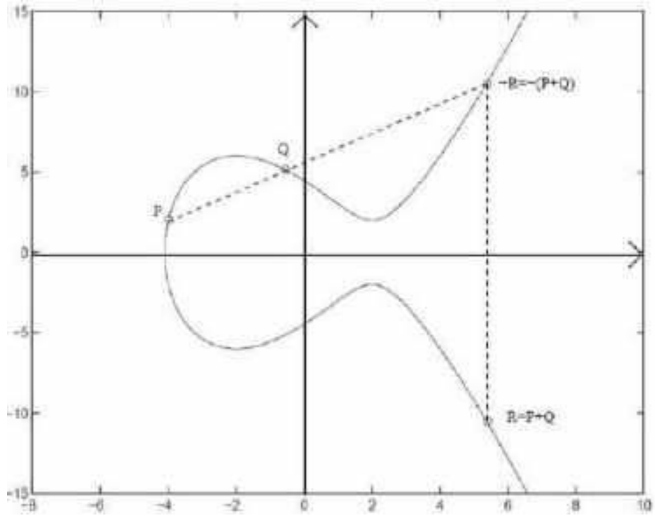
- The Decryption algorithm in ELGAMAL cryptosystem, takes the cipher text (C1,C2) as its input and use the following relation.

PT = (C2 * $C1^{(-D)}$) mod P.

- The plain text PT is obtained by the Reciever.

4.3 ECC (Elliptic Curve Cryptosystem)

ECC is a term used for describing a suite of protocols here security is based on the special versions of discrete logarithms, which does not uses number modulo p. ECC uses a set of numbers associated with mathematical objects known as elliptic curves, and there are certain rules for adding and computing these values just like number modulo p. ECC is used on an assumption that discrete logarithms are harder to find when they are applied to elliptic curves. In mathematics an elliptic curve is defined as a smooth algebraic curve defined by a certain type of cubic equation in two variables. The curve is represented by the equation



$$Y = X^3 + AX + B$$

Figure 3: Elliptic Curve

Which is a cubic equation comprising of two variables. The elliptic curve figure is illustrated on a 2D plane as follows.

The curve is symmetric to x-axis and when a line is drawn it can pass through a maximum 3 possible points. The advantage that ECC cryptosystem provides over RSA or other asymmetric cryptosystems is that it provides the same level of security while using a key of shorter size, for e.g. the amount of security that RSA or DSA provides while using a 1024-bit key, ECC can provide same amount of security while using only a 160-bit key. The ECC key-generation algorithm, encryption and decryption procedure are discussed in detail as follows.

4.3.1 Key Generation in ECC Cryptosystem

For generatio of public and private keys in ECC cryptosystem ew requires some global public elements. Let say Eq(a,b) is an elliptic curve with parameters a and b, and q is any prime number or integer of the form 2^m. G is any point on the elliptic curve, lets say there are two user U_A and U_B. The U_A's private key(generation of U_A's key) is done by selecting the private key of $U_A = N_A$ such that $N_A < N$, then we select the public key of U_A as P_A such that $P_A = N_A*G$. Similarly the private and public key of User U_B is generated where private key of U_B is N_B such that $N_B < N$ and the public key P_B generated such that $P_B = N_B*G$. Now secret key for both the users is generated the secret key for U_A is generated as $K_A = N_A*P_B$, and secret key for U_B is generated as $K_B = N_B * P_A$.

4.3.2 ECC Algorithm (Encryption)

Let the message be M. First we convert this message into a point on the elliptic curve, let this point be called as P_M. The generation of the cipher point will be as follows:

$C_m = \{K*G + P_M + K*P_B\}$, Send this cipher point to the reciever.

4.3.3 ECC Algorithm (Decryption)

The x-coordinate of this cipher point is multiplied by the private key of reciever. RES = $K*G*N_B$.

Now this result is subtracted from y coordinate of cipher point as follows: $(P_M + K*P_B) – RES = (P_M + K*P_B) – (K*G*N_B)$

We know that $P_B = G*N_B$.

$P_M + K*G*N_B – K*G*N_B = P_M$

Here reciever gets the point that the sender sent, now the reciever will decode this point on the elliptic curve to obtain the original message..

ECC offers a numerous advantages over other asymmetric cryptographic algorithms, one of them is using a smaller size key and providing equivalent level of security. This also provides a major advantage of faster key generation and thus also consumes relatively less computational power. One more advantage it offers is of creating fast digital signatures. Although the public key operations consumes more time such as verifying the digital signature, because first the receiver has to decrypt the message using his private key, but this will not provide the plain text message straight away, as discussed a point on the elliptic curve is received then this point is to be decoded back to obtain the original plain text message. However ECC is used in many practical applications especially in end-to-end encryption message communication and in creating pseudo-random number generators for security purposes.

Conclusion

This overview shows the most important cryptographic algorithms used in the current scenario. These cryptographic algorithms are studied and analyzed by the researcher to help improve the performance of current cryptographic methods. A comparison between symmetric and asymmetric algorithms shows that symmetric algorithms are faster than their asymmetric counterparts. Through previous studies and comparison results, we found that AES is the most reliable algorithm in terms of encryption speed, decoding speed, key length, structure, and usability.

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How artificial Intelligence has been used in the administration of COVID -19 in India

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ABSTRACT: Over 2.52Cr covid-19 cases in India. Using data and algorithm route block rapid progress of covid-19.AI & ML to solve real world problem like the corona virus outbreal.AI used powerful complex algorithm with them process data which them immolated human cognation to interpretation and compression of complicated medical and health care data for any artificial intelligence, need to be big data needed. This paper mostly focuses on how to manage spread of infection using Artificial Intelligence. Also focuses on the topic and the challenges a developing country such as India faces and overcome. The condition is troubling and new scientific, environmental and infrastructure needs to play a crucial role in removing this important problem globally (including India). It focused in this report on how India, a developing country is trying to stop corona spreading, and how artificial intelligence (AI) plays an essential role in controlling and monitoring the disease.

INTRODUCTION: India now fights against this pandemic COVID-19 (now called SARS-CoV-2) It was first confined from three people with pneumonia hooked up to the batch of serious respiratory illness cases in Wuhan. All structural aspects of the novel SARS-CoV-2 virus particle occur in linked corona viruses in natures. The early case of COVID-19 disease was reported in Kerala, India. On January 27, 2020, a 20-year-old female cited to the Emergency Department in General Clinic. In past few year in medical field are used AI and Data Science. Data science is an associative field that uses approaches such as machine learning and artificial intelligence to derive meaningful information and to predict future impressions and managements. few Indian states are now at the borderline to join the transmitting stage of the virus. In India Covid-19 infection cases are increase rapidly but resources in health care system are limited, like doctors, staff, bed, ventilator, X-Ray, medicine.etc.

To manage the rapid progress of covid-19 cases multiple strategy have been execute in India. Various clinical trials performed by medical expert, diagnosis, supported decision making for physician and patient appointment and tracking.

Important point will focus on this paper

1. Collaboration of AI for Chest X-Rays diagnosis.

2.Contact tracing through AI

3.Identify Mask Violators using AI

4.Medication Through AI

5.Monitoring Patient quickly and accurately through AI

6. My lab testing kit and Vaccination using AI

Key words:. Artificial Intelligence(AI), Data Science, PCR, Drone, Aarogya setu App, Robert, RT-PCR, Mylab ,Google AI

Collaboration of A for Chest X-Rays diagnosis

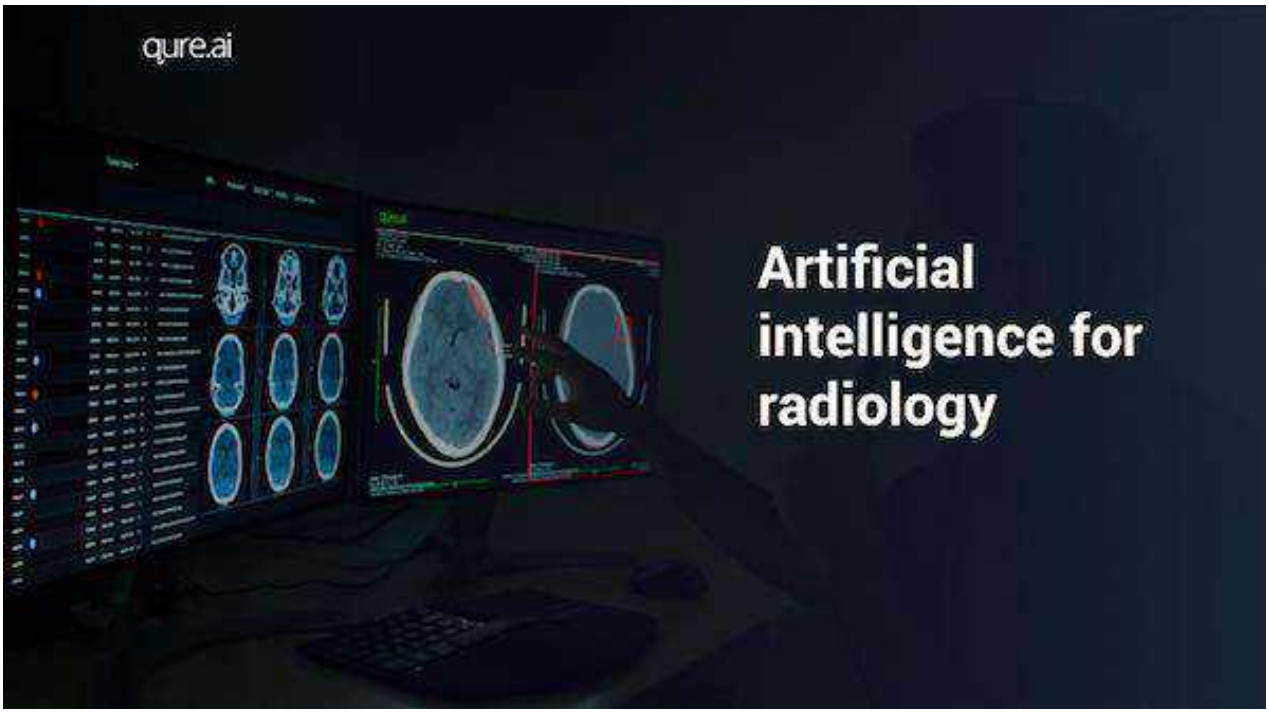
Caused by a Novel corona virus i.e. Covid-19, Acts a respiratory disorder that speedily spread common progression with huge morbidity and deadliness. in present year. It has had an impressive impact on civilization and world economies. COVID-19 has presented diverse claims for healthcare inflation, including decent methods for diagnosis, treatment, and avoidance.

Artificial intelligence (AI) is an expeditiously growing field of computer science with many functions for health management. Data Science is a member of AI that uses deep learning with neural network algorithms. It can recognize patterns and conclude complicated computational tasks often far quicker and with added precision than humans.

Now more than ever, we are regulated to our mission of facilitating excellent and fair diagnoses across the world. We are faithful to providing healthcare providers with the support to challenge the COVID-19 pandemic.

Working process of Qure.ai in chest radioactivity for examination of Covid-19.

There is no rocket science they required data object Chiranjiv singh, who is a chief commercial officer of qure.ai.
Qure.ai is an Mumbai based company, is now deploying AI-powered pandemic response solutions for COVID-19 management.



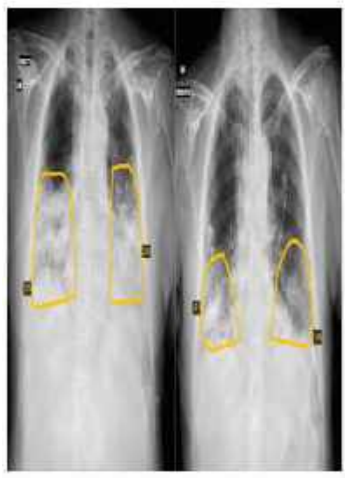
COVID-19 Acknowledgment Results

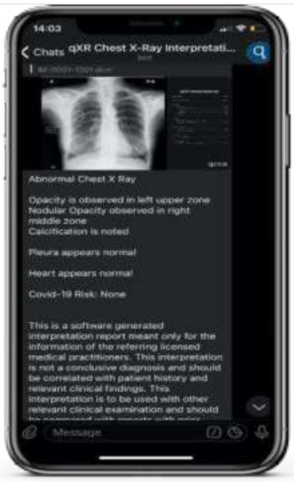
qXR Use Cases for ***COVID-19***:Cases Finding

• Screen chest X-rays for COVID-19 clues

• Detects ground-glass opacities and consolidation symptomatic of COVID-19

• Lesion localization in lung parenchyma with COVID-19 hazard and damaged area measure





Cases Find Progress Scanning Clinical Support

Progress Scanning

• Invigilator evolution of infected victims via daily bedside chest X-rays

• Automated over read in moments without hampering the radiology team

• Assessments percentage range of the lung and records change with each chest radiograph

Clinical Support

- Telegram based free service for interpretation of chest X-ray images to support in under-resourced settings
- Supports DICOM as well as smart phone acquired image formats
- Results available within the Telegram bot in < 1 minute
- Available by invitation only, please write to us for access: partner@qure.ai

Contact detecting through AI

In April 2020, Apple and Google, these two technology companies, participated in tracing influence.

This app acts on Bluetooth and is mostly used in western countries. India developing similar strategy to developing Arogya setu app. In June 2020 drones and contact tracing app are help India to manage covid-19 cases. These app employer Bluetooth location data to used any suspected patient nearby.

Aarogya Setu Mobile App: My Gov is an original platform to build an association between citizens and government with the help of technology for the improvement and development of India.

Keeps India at large secure. The app helps the Govt. India has determined hotspots, hence assisting in controlling the spread of the infection. The crowds us it

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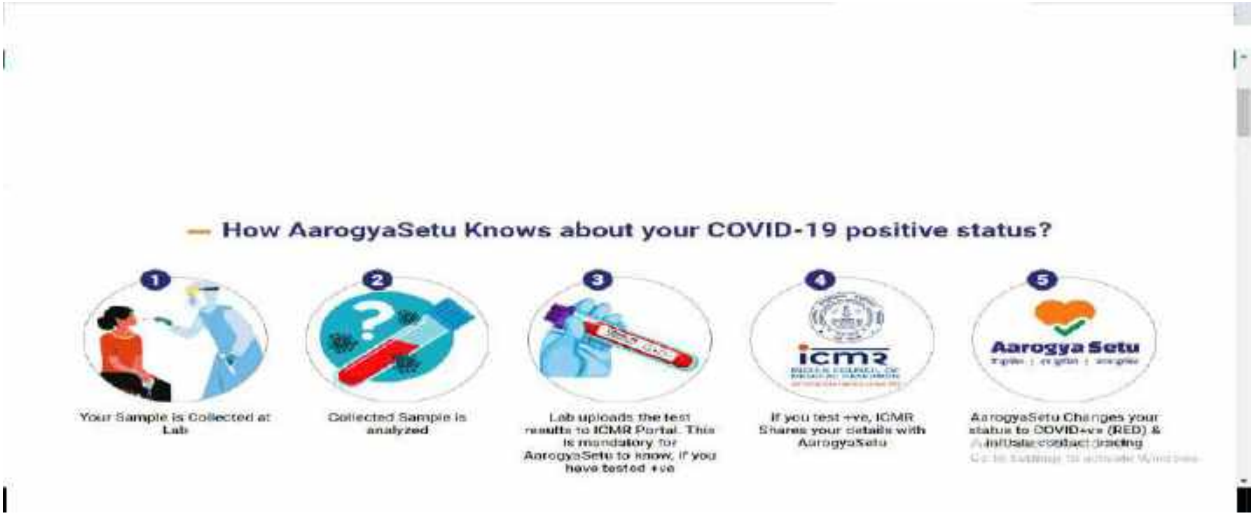


Dealing with the Aarogya Setu mobile app, he told the powerful meeting that the assisted development of the influence detecting app and original artificial Intelligence-based COVID-19 examination kits have enabled India's efforts to control the pandemic. The Aarogya Setu app uses contact tracing to record details of people who may have come in touch with a corona virus case. The app, which is available in 12 languages and various platforms, has over 114 million users as of May 26, which is more than any other contact tracing app in the world.

Drones, contact tracing apps:. Nowadays that the world is in the thick of the corona virus pandemic, governments are quickly deploying their appetizers of tracking methods. These include device-based contact tracing, we arables, thermal scanning, drones, and facial recognition technology. It's important to figure out how those tools and technologies work and how ministries are using them to track not just the spread of the corona virus, but the actions of their citizens.

Contact tracing and smart phone data: That's where device-based contact tracing (usually via smart phone) comes into play. This involves using an app and data from people's smart phones to figure out who has been in contact with whom — even if it's just a casual passing in the street — and alerting everyone who has been exposed to an infected individual. Go Corona Go (GCG) is a digital touch detecting app for COVID-19. It uses Bluetooth Low Energy (BLE) to promote and gather a random device ID of other adjacent GCG users. These anonymized "contact" IDs are sent to a backend server and stitched to form a temporal contact network. Analytics over this network helps calculate various hazard scores for a user. It also helps quickly identify primary, secondary and tertiary contacts with users who are later investigated as COVID positive.

'SAMPRAC' DRDO introduces Covid-19 tracking app: A team of 20 scientists is said to have worked behind progressing this solution –' SAM PARC', which means: Smart computerized management of patients and risks for Covid-19.

The Defense Research and Development Organization (DRDO) has come up with yet another solution to promote India's action against COVID-19. The Center for Artificial Intelligence and Robotics (CAIR), a Bangalore-based lab of DRDO, has developed an app called 'SAMPRAC' to enable capturing people under separation.

Affirming to the DRDO, "SAMPARC is a software that includes an app that would be installed on the phones of the infected Covid-19 patients. It is a server-side application that would be used by the state authorities to track the patients."

In Orissa, with contact with the IT industry to develop drones which prove to be helpful inflammation rules in restricted zone.

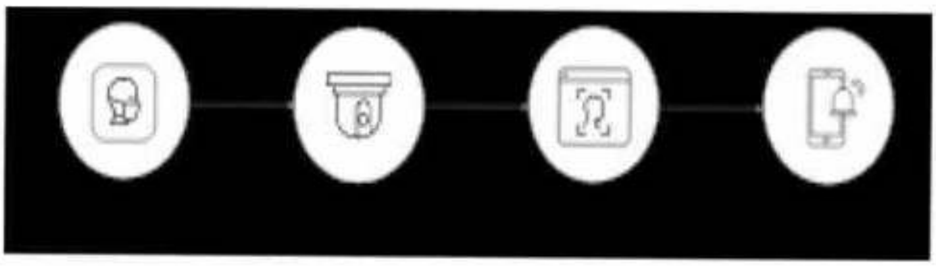
Identifying Mask Violators by using AI

In Telangana, the state police branch has come up with installing a software tool in the CCTV cameras to determine the masked violators.. After identifying it, send a warning to the police headquarters, which in turn circulates the update to the patrolling police unit. This pattern is similar to the AI model are used in Hyderabad.

Face Mask revelation System using Artificial Intelligence

The Face Mask uncovering System uses existing IP cameras and CCTV cameras linked with Computer Vision to catch people without masks.

How does it achieve?



Steps 1.Subscribe to face mask Alarm app Appsstore.ai.

Steps 2. Add your ongoing cameras

Steps 3.Start receiving No-mask data and alarms

Steps 4. Dispatch SMS alarm and admin Violators.

Medication Through AI

Artificial Intelligence (AI) is ideal for pharmaceutical repositioning in the Covid-19 medication: The Indraprastha Institute of Information Technology (IIIT-Delhi) has developed. an This means that in place of manually going through applicable medicine and finding out its effect against Covid-19 (which is a painstakingly lengthy mechanism), one can now rely on AI to boost things up and find the remedies which have the greatest possibility of success against the condition.
Some notable examples of repositioned remedies are Hydroxychloroquine (HCQ), Dexamethasone, Remdesivir, Avifavir / Favipiravir, etc.

Tata Consultancy Services is still using AI technology to chunk down the large molecules of drugs into extremely effective molecules against the disease, thus cutting down the time duration of the action.

AI gives online support in Chattisgad training of medicines for controlling the Covid-19 pandemic.

In Kerala, Robert is used for handing hand sanitizer and public health messenger at the entryway of the offices and isolation ward.

Robo-Sapien : Stanford, IIT Alumni Develop 'Intelligent Robot' For Chemical-Free Disinfection Of Community Places

An 'intelligent robot' machine that can travel to hospitals, bus stops, railway stations, shopping malls, alternative crowded civil places and sterilise surfaces with a profitable and secure water-based technology is the latest innovation churned out by scientists in their battle against the spread of the dangerous COVID-19. In their attempt to solve the problem of disinfecting larger places, a team of the Indian Institute of Technology (IIT) and Stanford alumni have developed an innovative technology "Airlens Minus Corona".

The technology for the appliance works on the basis of the electrification of molecules.

"Charged or ionised water droplets will kill the virus by killing its proteins and hence making it inefficient," Stanford alumnus Shashi Ranjan, co-founder and founder of Delhi-based company Per Sapiens Innovations, told ANI.

"Such ionised water droplets can help in the oxidation of viral proteins into non-harmful molecules. Oxidation is one of the most potent antimicrobial tools,"

"Airlens Minus Corona", works on the 'Water Electro Activation' technique, which unlike other techniques like applying Ultra Violet rays or using chemicals to deactivate the virus, is not risky to humans".

It is a machine in the form of a "Robo-Sapien" (an intelligent robot) that operates on water being superbly charged with the help of large electric power. This activated water when sprayed oxidizes the viral protein, cutting down it to a non-harmful molecule.

Monitoring patient quickly and accurately

Many hospital and screening center are using AI in Covid-19 management.

Early identification and isolation of suspected patient but implementation strategy face with challenges. Test kit, manpower and resources are limited. When patient are overflowing that where AI comes into picture. Helping triages Patients as instantly probable, L unit INSIGHT CXR, an AI solution for chest X-ray, detecting radiologic findings including consolidation and GGO(Ground Glass Opacity) on chest X-ray images. These findings indicate possible corona virus infected pneumonia.

Once a mobile X-ray devices safety takes chest X-ray examine. L unit INSIGHT CSR analyses

Them within a few seconds enabling prompt isolation before RT-PCR result arrive.

Once a patient are admitted to hospital community isolation facility, there condition should be checked on a regular basis.AI aided chest X-ray examines can help monitors the progression and regression of pneumonia, safely, accurately and easily.

AI-aided chest radiography can be a reliable screening exam to identify covid-19 patient, facilitation patient screening and isolation decision and ultimately reducing the workload of medical staff during the pandemic. According to the study published in the Korean journal of radiology, the turnaround time of the AI-aided chest radiography report was significantly shorter than that of the RT-PCR result.

The study suggest that AI-aided chest radiography interpretation can support timely decision making and treatment that minimizing the spread of covid-19 while waiting RT-PCR result.Try Lunit INSIGHT CXR for Covid-19 at lunit.io/covid-19

Mylab Coviself testing kit and Vaccination using AI

- Mylab is the first Indian company getting commercial COVID-19 PCR kit approved by CDSCO
- Mylab COVID-19 test kits cost nearly one-fourth of the currently procured kits
- Mylab uses advanced protocols which can reduce testing time by 65%

PUNE: As India fights back the epidemic COVID-19 (aka Coronavirus), limited testing facilities and expensive testing kits has become the biggest concern for the authorities. To combat this challenge, the Pune-based molecular diagnostics company Mylab Discovery Solutions Pvt Ltd which specializes in molecular diagnostic kits has developed the first made in India test kits for COVID-19 in a record time of six weeks. The kit is the first one to receive commercial approval from the Indian FDA/ Central Drugs Standard Control Organisation (CDSCO) and is named as Mylab Patho Detect COVID-19 Qualitative PCR kit. Further, Mylab is the only Indian company to have achieved 100% sensitivity and 100% specificity in the ICMR evaluation.

Many states are going through the second wave of infections, placing pressure on diagnostics laboratories. The RT-PCR test considered the gold standard for Covid-19 testing, takes 3-4 days to give results that delay hospitalization and treatment.

Self-test kits can probably be a game-changer for Covid-19 management in India. These can cut queues in laboratories, reduce costs, disperse the burden on existing manpower for a sample collection from homes, and provide quick results (within 15 minutes), leading to quick treatment and segregation.

Myab committed that it could take up to 1 lakh of tests in a week which can be further scaled up if needed. Further, the company claims that its test kits can test about 100 patients with one kit. A moderate lab with automated PCR can test more than 1000 patients a day.

COVID-19 vaccination

Millions of people across the world have already started the process of receiving COVID-19 vaccines. More than half of all adults in Indian. have gotten at least one dose of a COVID-19 vaccine while state and local officials explore to get even more people injected as quickly as possible. Some health experts have said artificial intelligence will be integral not just in managing the process of creating boosters for the variants to COVID-19 but also for the distribution of the vaccine. Artificial intelligence is being used in a diversity of approaches by those trying to address variants and for data management.

The Central Drugs Standard Control Organization (CDSCO) in India has granted emergency use authorization to two vaccines: Covishield® (AstraZeneca's vaccine manufactured by Serum Institute of India) and Covaxin® (AstraZeneca's vaccine made by Serum Institute of India) (manufactured by Bharat Biotech Limited). In the month of April 2021, EUA was granted to Sputnik - V.

Following the global Covid-19 pandemic, the world organised for an incredible fight, and safe and efficient vaccines were developed in record speed. The world now faces three major challenges: manufacture, distribution, and administration, now that the first vaccines have been released.

The artificial intelligence (AI) community is in a great position to help with these efforts by inventing or reusing technology advancements that can enhance human decision-making. Gartner has suggested four methods in which artificial intelligence (AI) can aid Covid-19 vaccination efforts.

The distribution of covid-19 vaccination separately but related problem

Demand forecasting:

For casting this demand this vaccination accuratedly ultra low temperature at which this to be stored of the cost of manufacturing is very high government can not let any of there dosages go to wastage

IBM Watson software is helping us US government and State Government to managed the limited supply of vaccination available so far by using its zip-code level data on demographics and health status

In conjuction with information on people attitude toward vaccination to try to forecast demand and also ensure vaccines are distributed equitability. Supply chain management and demand forecasting even more acute.

Micro-Eyes: AI based company in CIFI it analysis data including statellite imagery and map, the number of mobile phone user in a certain area, social media posts and official government data to try to predict how many people will show uo for healthcare at any one place. Each data set on its own may be marginal value. But by combining lot of data sets. Macro_Eyes is able to make accurate predictions.

Macro-Eyes way able to forecast were improved for childhood vaccination demand in African country.

Wastage of dosages was reduced to just 2.42 vials per 100 shipped

AI Advance even survey : Other area where government focus toward people those we are receiving vaccine should be monitor for any side effect even to clinical trial was already be carries out thousand of people. A lot of side effect and safety issue might be appear this vaccine distribution to million.

For that purpose British government has contracted to genpact ML software that can identify potential side effect toward particular person which indicate problem causes for concern.

The system genpact in plain text, automatically codilies it and searches for pattern that could be indicated of an emergine safety issue, flagging this to the regulator for further investigation. This software has been trained on many different types of writing. So that it can understand both the medical terminology a doctor might use in reporting symptoms as well as the more colloquial expennsions a member of the public might use”.

Another area which is not currently will require a assistant of AI is analyse the supply chain any bottleneck challenges for lot of supply chain management software will be there were design for single organization. The distribution of covid-19 vaccine include a lot of other parties on top of these lot of other parties may be competitor each other related to share there data. Some party can not share there data weing to regularity and security concern.

Digital Distributed Ledger Technology: Under crypto currency $ Bitcoin play an vital role in combinative these problem. This types of digital ledger provide trusted secured result and verify record. For chain of custody for even vial of vaccine that could be used by every organization.

Artificial intelligence Can Decrease Vulnerability:

There has been no deficiency of vulnerability during the pandemic. While man-made intelligence can't dispense with vulnerability, it can surely assist with diminishing it. For instance, toward the start of the pandemic, information researchers utilized simulated intelligence to fabricate example of the Corona virus spread. While the standpoint was loose from the outset, with more information, researchers had the option to anticipate the illness spread all the more precisely. Presently, similar individuals are quickly repurposing existing artificial intelligence answers for make models for antibody dissemination and organization. This lessens mystery, for example, for site-based immunization should be founded on Corona virus spread and waves. As more information about the adequacy of antibodies opens up, these figures will improve.

Artificial Intelligence Can Perform Monotonous Human Errands at Scale:

"In contrast to people, computer based intelligence has the advantage of having the option to work every minute of every day," said Svetlana Sicular, research VP at Gartner. "Computer based intelligence doesn't get drained, and all the more significantly, it doesn't get disappointed, which are basic advantages when working with an issue at a particularly huge scope and intricacy."

For instance, chatbots and man-made intelligence empowered contact places can address inquiries regarding the antibody, its incidental effects, timing, and costs, and can do as such in numerous dialects. For picture, acknowledgment can be utilized to help clinical imaging examination, diagnostics, and patient emergency for conditions identified with the immunization and to the infection.

Artificial intelligence Can Assist with figuring out Who Gets the Vaccine

"Recollect that the difficulties of antibody dissemination are massively convoluted, particularly given the restricted and divided information right now accessible. Computer based intelligence can assist with responding to questions and sort through information, however it can't and ought not plan impartial antibody appropriation,"

Artificial intelligence Can Assist with overseeing Supply Chain Challenges

The production network is at the focal point of each of the three major inoculation tasks — creating, scattering, and association. A couple of man-made intelligence abilities for the store network are as of now normal, surely knew, and attempted. The location as of now is the manner by which to quickly execute those equivalent methodologies, spare resources and amplify the speed of inoculation.

A couple of instances of existing computer based intelligence arrangements that can assist with settling these difficulties incorporate store network planning and perception, all encompassing stock perceivability and guaging of various types.

Regardless, various crucial artificial intelligence capacities are unused to the inventory network, because of the conditions introduced by the broad and since of the insignificant size of tasks. In any case, they enable those managing counter acting agent supply chains to:

- Decide state/local area/site-put together immunization needs based with respect to Corona virus spread and waves
- Intensely direct store network for drugs, center stuff, and non-drug materials relying upon the condition of inoculation
- Screen temperature controls and timeframe of realistic usability of the antibody

CONCLUSIONS

This paper summarizes the issue overcome by AI to the administration of covid-19. AI innovation can without a doubt bring unused efficiencies and quality to overseen healthcare results in India. Be that as it may, crevices and challenges within the healthcare segment reflect deep-rooted issues around lacking subsidizing, powerless direction, deficiently healthcare framework, and profoundly inserted socio-cultural hones. These cannot be tended to by AI arrangements alone.

Besides, the mechanical plausibility cannot be likened to appropriation. In India , destitute computerized foundation, a huge, assorted, and unregulated private segment, and variable capacity among states and restorative experts alike cruel that the appropriation of AI is likely to be moderate and profoundly heterogeneous. The same components too make it very likely that well-established private clinics will be the most adopters. This in turn would infer that much of the overwhelming account or method of reasoning for the improvement of AI in healthcare, in terms of making strides value and quality, is improbable to be tended to through showcase strengths alone: these arrangements are more likely to serve populaces who as of now have get to high-quality care, ordinarily in cities with a well-developed computerized framework.

The viability of these frameworks will depend on the precise distinguishing proof of issues and their coordinating to suitable arrangements. Right now, there's a hazard that solutions are technology-led instead of problem-led, and they are as a result frequently dazzle to particular relevant needs or imperatives. The Parameter say in this paper after the fruitful adjustment of AI.

Lot of technology said that AI was not much of help during this pandemic taking into consideration its impact on epidemic mapping, police making and creating vaccine for this pandemic was negligible some of them could AI will so sophisticated in future predict in next pandemic it will happens and timely manner prove.

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AN EXPLORATION OF THE FACTORS INFLUENCING THE ADOPTION OF CLOUD COMPUTING WRT. CI/CD PIPELINES: A SYSTEMATIC STUDY.

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Abstract:

The majority of enterprises today still maintain their mission-critical systems with their outdated on-premises apps. These outdated on-premises (legacy) systems do, however, have a number of serious flaws, including maintainability and scalability problems. With reference to this, the businesses using cloud services provide a more flexible and cost-efficacious platform solution for fortifying many immensely colossal business applications and IT infrastructure. Due to increased academic research on cloud migration, cloud adoption also increases. The purpose of this study is to identify, organize, and compare current research work in the field of on-premises to cloud migration in a scientific and methodical manner. The role of the CI/CD pipeline in cloud migration is also discussed in this paper. The cloud migration provides numerous benefits for CI/CD. CI/CD tools helps to make development, operations, testing/quality assurance, and security easier for IT teams.

Keywords: Cloud Computing, CI/CD Pipeline, Continuous Integration, Continuous Delivery, Cloud Adoption, Cloud Migration, Legacy System, Quality Assurance.

Introduction:

Most of the academia as well as industry are interested in Cloud computing now days. Many IT firms & small and medium-sized enterprises see this technology as a great chance for business growth, resulting in a competitive advantage in market. The pay-as-you-go model i.e. cloud computing model , which offers flexible pricing options in addition to the scalability feature, is the primary attraction for small and medium businesses in adopting cloud technologies. Large corporations want to use this technology as part of their business continuity plans for exponential growth (Buyya et al. 2009; Khajeh-Hosseiniet al. 2012). Maintainability and scalability issues plague traditional legacy systems that support core enterprise IT processes. In this paper a review of the CD/CI Pipeline has identified a workable alternative for facilitating secure migration of on-premises software applications to cloud environments.

As a consequence of the inherent benefits of cloud computing and the desire to migrate to the cloud, a large cloud migration research (Khadka et al. 2013; Andrikopoulos et al. 2013) was conducted. Many strategies have been established that provided various structures, approaches, procedures, and methodologies to help in the cloud migration and decision making process.

Literature Review on Cloud Migration and Use of CD/ CI:

Cloud Migration:

Cloud migration study is insufficient without discussing SOA (Service-Oriented Architecture). Because cloud migration and SOA have several parallels and differences, we cannot position the study on cloud migration without considering SOA migration. Both of these technologies provide significant benefits to organizations, such as lower overall costs, simplified service provision, and increased business agility.

Use of CI/CD:

There have been several evaluations, research, and surveys on software engineering, including studies on continuous delivery, continuous deployment, and continuous integration .The methodologies, tools, and tactics for adoption and implementation are the main topics of the software best practice studies (CI, CDE, and CD). Numerous studies confirm the attention and interest that software engineering has obtained. In the last five years, 56.5 percent of the papers that were published were finished. The percentage of publications using continuous integration technologies was only 32.2%. Researchers need to pay attention to the framework process, integration tools, and deployability for continuous operations in each of these studies, mappings, and reviews. A user needs information regarding the types of CI/CD tools that would benefit his or her business, as well as the advantages of deploying such tools. Despite the increasing awareness and popularity of CI/CD and how they are being used to impact businesses, there is very little information and evidence on the factors that influence the decision to host CI/CD tools in the cloud versus on-premise.

Organizations and IT teams cannot make informed decisions about CI/CD tools without this information. A number of questions remain unanswered, such as whether CI/CD is more effective in the cloud or on-premises, and whether the factors influencing CI/CD deployments are solely based on cost. Businesses and software developers are missing out on opportunities and benefits associated with CI production if they do not understand which CI tools work best in the cloud or on-premise. As a result, they fail to provide their businesses with the competitive advantage that can be gained through CI/CD tools because they are unaware of the opportunities they could have. Developers who use CI/CD are not taking full advantage of its functionality unless they understand which tools are best suited for which ecosystems.

Introduction to CI/CD: The use of Continuous Integration and Continuous Delivery (CI/CD) has led to significant improvements in the way software is developed and deployed. Bugs are detected and addressed as they arise, increasing efficiency.

Code creation and testing is now a single process rather than two separate ones, generating reliable, tested code much faster than was previously possible. This integration then allows CD to confidently deliver reliable, secure code to production as it is completed. It greatly simplifies the process of Independent Verification and Validation testing.

Figure 2 depicts the concepts of Continuous Integration (CI), Continuous Delivery (CDE), and Continuous Deployment (CD). Developers without CI cannot implement CD. While continuous integration (CI) refers to frequent software development and testing, continuous delivery (CDE) also includes automated configuration and deployment. A continuous deployment (CD) involves sending software to production automatically once it is committed. For the purposes of this paper, the definitions and how they interact are as follows.

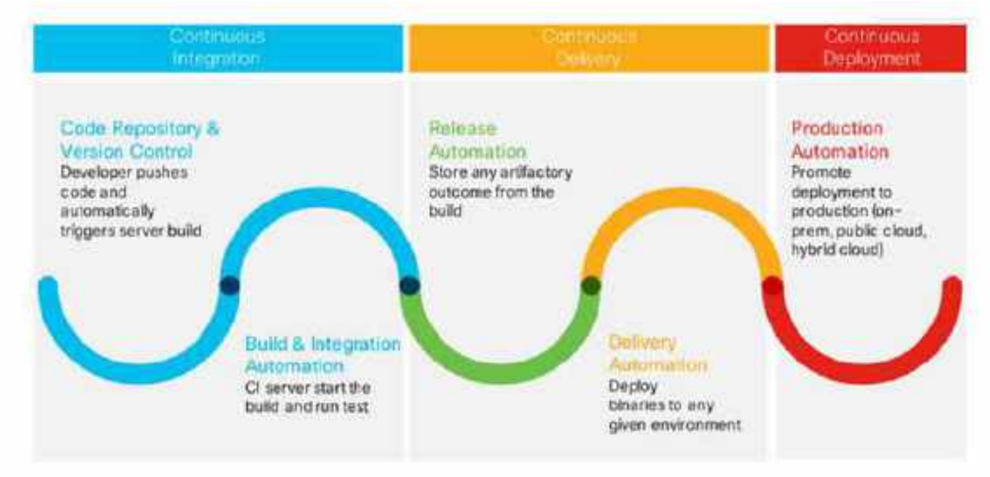

Figure No.1 Visualization of CI/CDE/CD

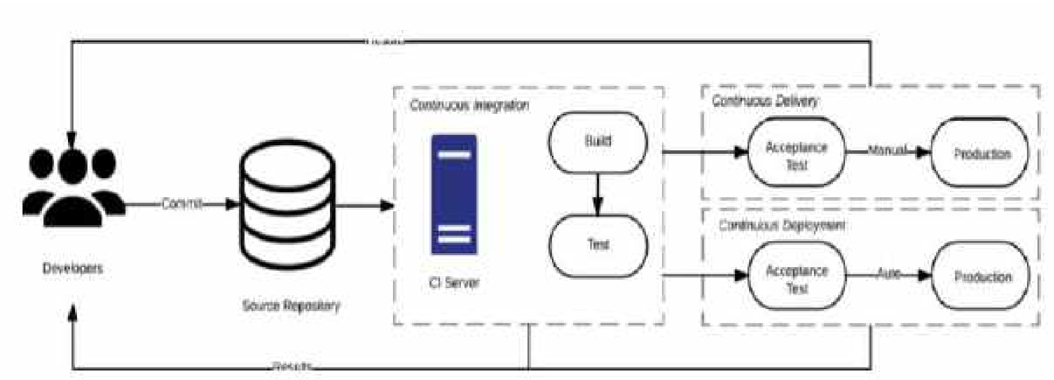

Figure 2. Continuous Integration & Continuous Delivery

1) Unit tests – To validate the behavior of individual functions.

2) Integration test- To ensure that multiple components are running concurrently and correctly in order to integrate with other services.

3) Similar to integration tests, acceptance tests. However, concentrate on business cases.

4) User interface tests- To ensure that the system applications are running properly. When the developers detect a change in the system, they run tests. They keep an eye on the repository system for any changes.

CI/CD and Legacy Cloud Migration – Perfect Together

Our data-driven society's continual progress has substantially enhanced individuals' service expectations of government. Agencies will be unable to satisfy these higher expectations unless their old IT infrastructures and procedures are transformed. Legacy cloud migration and Continuous Integration/Continuous Delivery and Deployment (CI/CD) are two mutually reinforcing methodologies that agencies may utilize to achieve IT transformation and more rapidly and safely offer new services.

CI/CD on a Cloud vs. On-premises

All the tests and builds of CI/CD can be run on either cloud or on-premise systems. The deployment decision is influenced by a number of factors. The CI/CD tools generally used to provide data security, provider reliability, and hosting licenses are all factors.

A never-ending debate rages over whether CI/CD solutions should be hosted on premises or in the cloud. Considering the pros and cons of both cloud and local data centers, the differences in environment, and developer involvement in architecture, organizations make decisions on this debate [7].

CI/CD & Cloud Migration- Made for each other:

Adopting CI/CD does not imply the cloud transfer of old systems. The tools and techniques are applicable in an on-premises setting. Cloud eliminates much of the tedium and expense of maintaining physical servers. It also reduces the effort required to build, test, and deploy code.

The scalability of the cloud is tuned for CI/CD. Because of the cloud, development tasks may be divided and executed in parallel. Many teams pool their computational resources in a much bigger pool. These, together with other automation options, allow tests to run substantially faster, resulting in speedier deployment.

Many cloud-based technologies offer ready-to-install pipelines for CI/CD build setups. A pipeline is essentially a collection of events or tasks that must be executed.

Conclusion:

This paper analyzes the earlier research on cloud migration and identifies all the concerns related to security studied in reviewed papers. Literature on cloud migration also identify in this paper. Most of the businesses have identified and accepted the impact that CI/ CD is having by providing the continuous delivery to their users. The speed and distribution of CI tools provided many benefits to the businesses. The CI/CD tools should be installed by system developers once they determine which one is best for them based on how it will be hosted. To do so, they must assess factors such as price, flexibility, security, and provider dependability. The Research gap has been identified by this review paper. It also analyzed the potential for research on CI tools and whether to host on-premise or in the cloud.

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Study on Machine Learning versus Natural Language Processing

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Abstract:

Machine learning is a type of artificial intelligence and without explicitly programming; it allows a machine to learn from past or historical data. The goal of ML is to find patterns in data, make predictions based on these complex patterns, answer business questions, identify and analyse trends, and solve problems.Natural Language Processing (NLP) is also a subset of AI, and to predict the result NLP uses ML techniques. The objective of NLP is for computers to comprehend either texts or languages in the same way that humans do. Machine learning (ML) focuses on creating machines that learn automatically and don't require human intervention. Natural Language Processing (NLP) is a combined field of Linguistics and artificial intelligence. It specializes in shrewd evaluation of written language. This paper gives a light on basic architecture and working of machine learning and natural language processing. A comparative study of machine learning and natural language processing is also given in the paper.

Keyword: Machine Learning, NLP, Supervised learning, unsupervised learning, neural network.

1. Introduction

The paradigm of machine learning and artificial intelligence has permeated our daily lives in such a way that it is no longer the domain of esoteric academics and scientists trying to solve a challenging research problem. Development is natural rather than random. With exponential growth in processing speed and the emergence of smarter algorithms to solve complex and challenging problems, organizations have discovered that it is possible to use vast amounts of data to realize solutions that have far-reaching business values. The main goal of machine learning is to create models that can be trained to improve, perceive complex patterns, and find solutions to new problems using previous data. Natural language processing is a subset of artificial intelligence and linguistics, dedicated to making computers understand utterances or words written in human languages. Natural language processing was created to make the user's job easier and more satisfying they want to communicate with the computer in natural language. Because not all users need to be NLP is well-versed in machine-specific language and caters to those users who can't get enough of it time to learn new languages or improve them. Machine Learning(ML)

Machine learning is a class of rule set that enables software program packages to end up extremely accurate in predicting results without being explicitly programmed. The basic premise of machine learning is to design and develop algorithms that can accept input data and use statistical analysis technique to predict an output, while updating the outputs as new data becomes available. A machine learning system learns from historical data, creates predictive models, and whenever it receives new data, it predicts an output for it. The accuracy of the predicted output depends on the amount of input data used, because a huge amount of input data helps to create a better and accurate model that predicts the output more accurately.

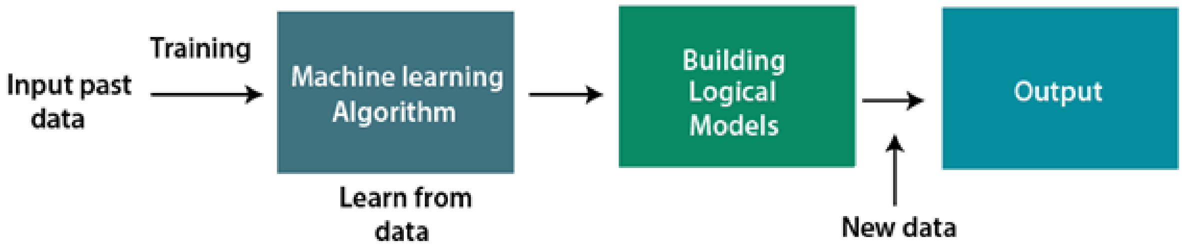

Fig. 1. Working of machine learning algorithm.

1.1 Classification of Machine Learning

At a broad level, machine learning can be divided into three types:

a) **Supervised learning:** Supervised learning technique is a type of machine learning technique in which we provide sample labelled data to a machine learning system to train it and it predicts the output based on that. The system will build a model using the labelled data to understand the datasets and learn about each data, after the training and processing is complete, we will test the model by providing sample data to check whether it predicts the accurate output or not. The goal of guided learning is to map input data to output data. Supervised learning is based on supervision and is the same as a student learning things under the supervision of a teacher. An example of supervised learning is spam filtering. Supervised learning can be further grouped into two categories of algorithms:

   i. **Classification:** It is supervised learning technique used to identify categories of new observations or new data set based on training data set.

b) **Regression:** When the output is a real or continuous value then regression technique is used. **Unsupervised learning:** In unsupervised learning, an AI system is presented with unlabelled, uncategorized data, and the system's algorithms operate on the unlabelled and uncategorized data without any prior training. The output depends on the coded algorithms. Exposing a system to unsupervised learning is one way to test artificial intelligence. Following are the types of unsupervised learning:

   i. **Clustering:** The clustering problem is where you want to discover custom groupings in the data, such as grouping customers by purchasing behaviour.

ii. **Association:** The problem of learning association rules is where you want to discover rules that describe large parts of your data, for example people who buy X also tend to buy Y.

c) **Reinforcement learning:** It is a feedback-based learning method in which a learning agent receives a reward for each correct or right action and a penalty for each incorrect or wrong action. The agent uses this feedback to automatically learn and improve its performance. In reinforcement learning, the agent interacts with and explores the environment. The agent's goal is to earn as many reward points as possible and thereby improve their performance.

1.2 Machine Learning and Neural Network

An artificial neural network (ANN) is a powerful computing system whose central theme is borrowed from the analogy of biological neural networks. ANNs also are named as "artificial neural systems" or "parallel distributed processing systems" or "connectionist systems". An ANN acquires a large collection of units that are interconnected in some pattern to enable communication between the units. These units, also referred to as nodes or neurons, are simple processors that work in parallel. Each neuron is connected to another neuron through a junction. Each link is associated with a weight that has information about the input signal. This is the most useful information for neurons to solve a particular problem, as weight usually elicits or inhibits the signal being communicated. Each neuron has an internal state known as an activation signal. The output signals that are created after combining the input signals and the activation rule can be sent to other units.

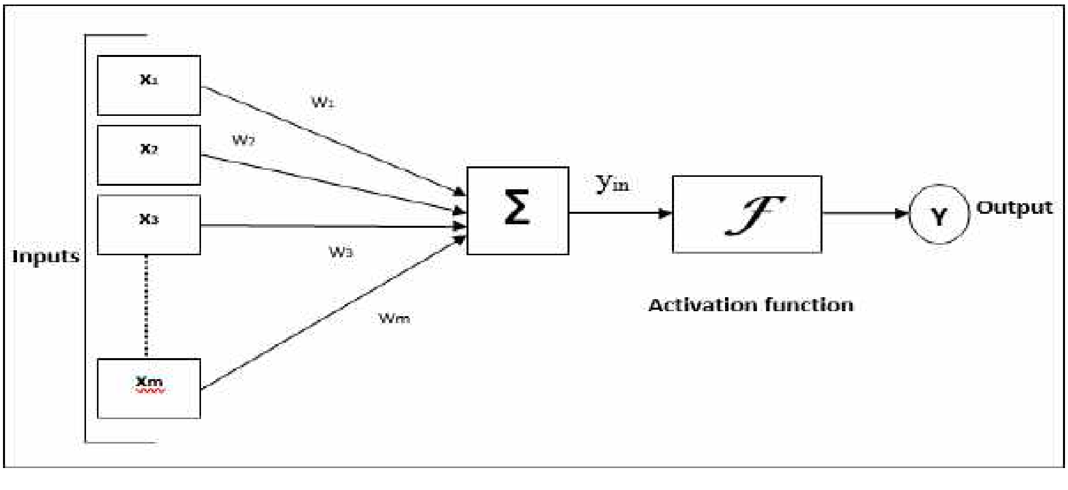

Fig.2. general model of ANN

For the above general model of artificial neural network, the net input can be calculated as follows –

Y_{in}= x1w1+x2w2+ +xmwm

i.e., Net input yin = ∑xi.wi

The output can be calculated by applying the activation function over the net input. Y = F(yin)

Additionally, the advent of neural networks has brought several new forms of ML:

i. **Deep learning:** Layers of neural networks connect to form a sort of "brain" in which complex tasks are broken down into individual parts, assembled as layers in a system. Simpler tasks are located deeper in the network. As inputs shape behaviour for these tasks, outputs trickle down the layers and inform higher-level decisions. A common example of this kind of learning is artificial intelligence for facial recognition, where simpler tasks such as pattern mapping and boundary recognition serve as the foundation for complex tasks such as colour recognition and predictive mapping.

ii. **Deep Reinforcement Learning:** A combination of deep learning and reinforcement learning, DRL uses neural network deep learning as a foundation, accepting environmental inputs as agents in simulations to learn complex strategies to complete tasks.

2. Natural Language Processing(NLP)

Natural language processing (NLP) is a combination of linguistics, computer science and ML technique. NLP focuses on natural language communication between human being and computer or machine, and NLP is primarily about making computers or machine understand and generate human language with the help of different types of ML algorithms. Voice assistants like Amazon's Alexa and Apple's Siri, machine translation and text filtering are some applications of NLP. Natural language processing studies interactions between humans and computers to find ways for computers to process written and spoken words in a similar way to humans. The field combines informatics, linguistics and machine learning.

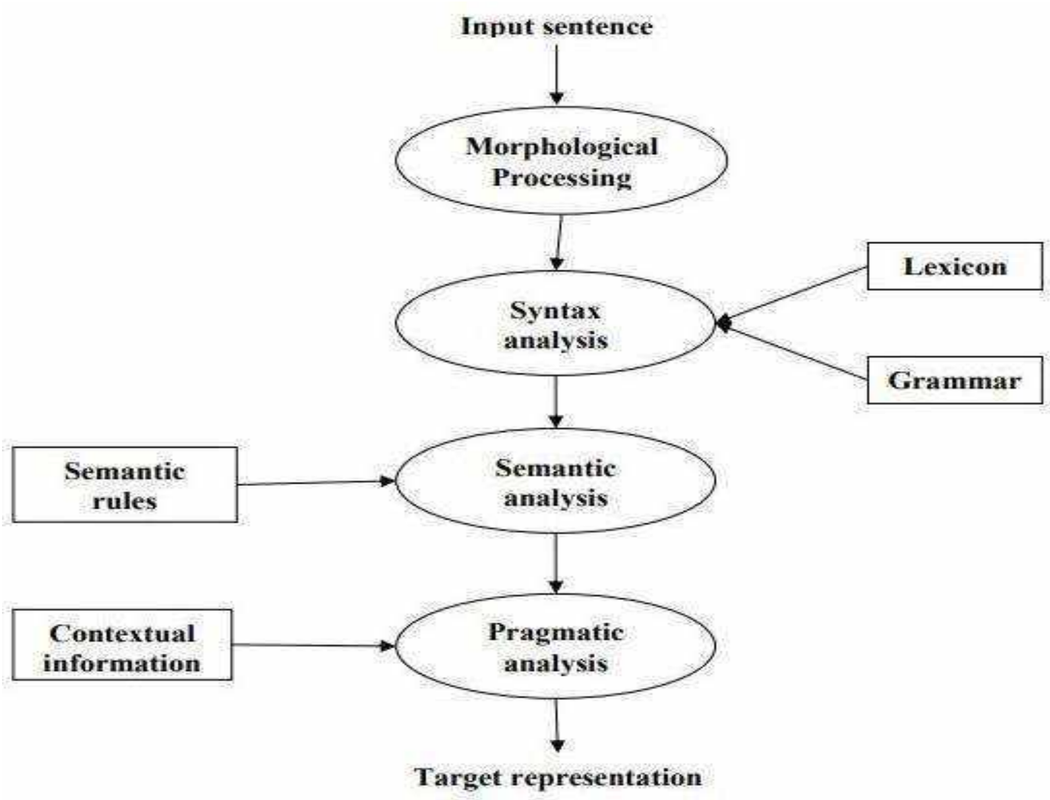

Fig.3. logical steps in NLP

i. **Morphological processing:** It is the first phase of NLP. The purpose of this stage is to divide parts of the linguistic input into sets of tokens corresponding to paragraphs, sentences and words.

ii. **Syntactic analysis:** It is the second phase of NLP. The purpose of this stage is twofold: to check whether the sentence is well-formed or not, and to break it down into a structure that shows the syntactic relationships between the different words. For example, a sentence like "The school goes to a boy" would be rejected by a parser or parser.

iii. **Semantic analysis:** After Syntactic analysis, next step is to perform semantic analysis. This phase is used to find an exact or correct meaning from the text. The text is then checked for meaningfulness. For example, a semantic analyser would reject a sentence like “sweet Bitter melon".

iv. **Pragmatic analysis:** It is the fourth phase of NLP. Pragmatic analysis simply matches the actual objects or events that exist in a given context with the object or event references obtained during the previous stage (semantic analysis). For instance, the sentence "placed the banana in the basket on the shelf" could have semantic interpretations, and the pragmatic parser will pick out between the 2 alternatives.

2.1 Components of NLP

There are the following two components of NLP –

i. **Natural Language Understanding (NLU):** NLU helps a computer or machine to analyse and understand the human language by extracting metadata from content like concepts, keywords, emotions, relationships etc. Itis primarily used in business process applications to understand a customer's or end user’s problem in both spoken language as well as written language.

   NLU includes the following tasks –

   NLU map the given input data to a useful or meaning representation. It is used to predict and analyse different aspects of language.

ii. **Natural Language Generation (NLG):** NLG work like a translator that converts computer data or information into a natural language representation. NLG primarily used in text planning, sentence planning and text implementation.

2.2 Applications of NLP

i. **The answer to the question:** It focuses on designing and developing systems that automatically provides answer to the questions asked by humans in natural language.
ii. **Spam detection:** Spam detection is used to find or detect and analyse unsolicited emails that reach the user's inbox.
iii. **Sentiment analysis:** Sentiment analysis is also known as opinion analysis or opinion mining, which is used to analyse the behaviour, attitude and

emotional state of the sender on the website. This application is implemented through a combination of NLP (Natural Language Processing) and statistics (statistical techniques) to assign values to the text like positive, negative or natural, to identify the mood of the context like happy, sad, angry, etc.

iv. **Machine translation:** It is used to translate speech and text from one form of natural language to another form of natural language.

v. **Spelling correction:** It is used to correct the spelling for e.g. to use MS-word, PowerPoint for spell correction.

vi. **Speech recognition:** Speech recognition or voice recognition is a technique which converts spoken words into text. Mobile devices, home automation, video recovery, and dictation to Microsoft Word, voice biometrics, voice user interface are some applications of speech recognition technique.

vii. **Information extraction:** It is an application of Natural Language Processing, which is used to extract and analyse structured or meaningful facts from unstructured or semi-established machine-readable documents.

3. Machine Learning versus Natural Language Processing

Artificial intelligence helps computers or machines to solve complex problems previously solved by biological systems. There are various applications of AI. ML and NLP are each components of AI system.

Natural Language Processing is a part of AI which gives machines the ability and knowledge to not only read, but also understand, predict and interpret human language. With NLP, machines or computers can understand spoken or written text or documents and perform different activities like speech recognition, sentiment analysis, and automatic text summarization.

Machine learning can be used to analyse and solve complex AI problems and improve NLP by automating processes and providing accurate solutions to the complex problems.

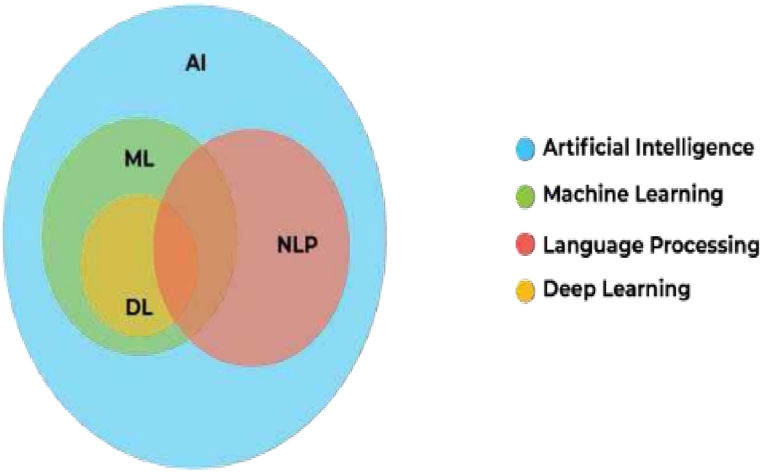

Fig.4. NLP and ML are part of AI

Machine learning requires large amounts of data set to better understand the relationships or association that may exist between input features and between input and output features. NLP requires system gaining knowledge of to offer correct responses and automate a number of those approaches.

Major applications of machine learning include online recommender systems, Google search algorithms, auto-tagging suggestions for Facebook friends, etc.

Speech recognition, sentiment analysis, translations, chatbots, market intelligence, automatic grammar checking, etc. are some applications of NLP.

4. Conclusion

This article explored the concepts of machine learning. Machine learning has received much attention from researchers nowadays thanks to its distinctive features. Firstly article describes basic introduction about ML and its type. It also covered relationship between ML and ANN. The article gives the brief information about NLP and NLP components; it also gives comparison between NLP and ML.

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Case Study

"boAt"- Zara of electronic fashion

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Abstract

Audio tech and wearable direct to consumer (D2C) brand -"boAt" was established in 2014 to disrupt the established organised industry landscape by launching differentiated, innovative and aspirational products with clear value proposition at affordable price range, catering the need of Indian audience. They create differentiation in the Indian market with innovative lifestyle-oriented designed product with the range of SKUs for various targeted segments. They focused consumer segment which is young online audience, digitally-enabled and trend-conscious and marketed primarily through online channel with innovative and aggressive strategy to compete with existing brands in hearables and wearbale. boAt achieved 48% volume market share and 30% value market share in wireless hearables' brands category and maintained number 1 position by their innovative digital-first approach since 2019 and consistently increasing the market share every year.

boAt was able to gauge the pulse of the consumer devices market with expansion of their presence from the audio category to wearable very quickly and successfully implemented their plan to achieve their vision to disrupt the incumbent competitive and attractive consumer categories. They communicated successfully value proposition in a targeted manner and maintained a high brand perception with various associations through brand ambassador s and swiftly diversify product mix. boAt adopted aggressive approach across product categories on strong brand equity build over period of time. Along with online, boAt expanded presence across online and offline channels to widen our distribution footprint.

boAt face strong challenges from established existing players during this journey. They also face the risks associated with overseas procurement, such as geographical concentration and foreign currency exchange risks, which adversely affected their business for that period briefly. The COVID-19 pandemic, including the spread of the various variant in India and internationally, has affected and continue to affect business operations and financial

condition in a number of ways and poses many challenges on the aspiration plan of founder and key investors.

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“boAt”- Zara of electronic fashion

Aman Gupta, Founder, Imagine Marketing Pvt. Ltd (boAt brand) recalled boAt’s early days in the interview with business today "It was a tough category in 2016, not many online brands were funded in this space. We went to 40 angel investors, and once they started asking questions, we came back and delivered on those points," Gupta shared at the ASCENT Conclave 2022. "Today I look at those investors and tell them - you missed the 'boAt'," Gupta added [15].

However, boAt Team look for alternative strategies and solutions to solve many challenges ahead [14].

Challenges for the D2C Start-up "boAt"-

- **Future oriented strategy-** To create future oriented strategy and drive efficiencies in its business.
- **Funding for Scaling up and Capability-** To raise capital with follow-on funding and scale operation repeatedly. Requirement of funds for marketing and advertisements towards brand building.
- **Pandemic Impact & Action Plan -** The adverse impact of pandemic on boAt business created operations and financial constraints with high uncertainty and require attention and action plan to overcome.
- **Competition-** This category involves and established play which poses challenges by offering a lot of discounts and incentives. It lead to reduced prices, operating margins, profits and impacted market share across product categories.
- **Demanding Consumer-** There is rapid changes in customer preferences and requires robust responses in a cost-effective and timely manner. The challenge is to respond to these changes and effectively work towards market acceptance of new designs and products.
- **Attracting and Retention of Employee-** The talents churn and find the right person for the right job becomes difficult for any startup. In addition, keep high motivation for existing employees and retaining the performing employee is a big headache for founder team.
- **Fake and spurious products**- The brand is adversely affected by the retail of counterfeit products in the market.
- **Retention of customer-** boAt face customer retention issue as same as any growing start-up. It keeps on aiming that customers stick with the brand and don't move away to its competitor by cross selling and upselling.
- **Reliance on the Suppliers-** boAt dependence on overseas of third-party outsourcing manufacturers and suppliers for production is a cause of worry especially in wake recently supplies woes during pandemic. Any shortage and cessation in supply from these contract manufacturers or component suppliers could adversely affect business, results of operations and cash flows.
- **Dependency of selected distribution Channel:** boAt is extremely dependent on certain online marketplaces and offline distributors which is not favorable for long term sustenance.
- **Entry into overseas market-** The boAt founders have a dream to make multination but expansion and entry into overseas markets require appropriate expertise and financial resources and it is subjected to various business, economic, political, regulatory and legal risks.
- **Make In India Shift-** The Make India shift is the need of the hour for boAt. Geopolitical risk and pandemic affecting the contracts and arrangements with

suppliers in China. Supply constraints remain a challenge with dependence on China for manufacturing and deliveries.

Introduction

Audio tech and wearable direct to consumer (D2C) brand -"boAt" was established in 2016 in Mumbai in India, promoted by Imagine Marketing Pvt. Ltd and currently has 28% of the market share. The company started in 2016 in highly competitive marked crowded by strong and established Chinese handset makers Xiaomi, Vivo and Oppo whereas other Indian home grown handset brands like Micromax, Lava, Karbonn and Intex were struggling and loosing the market share rapidly.

The company was started by Mr.Aman Gupta, a CA and ISB, Kellogg Alumni and Mr. Sameer Mehta. The brand specifically targets the young millennial/ generation-Z. They started manufactures fashionable headsets earphones, travel charging cables, and all other audio-based items to provide Indian consumer with Made in India products replacing Chinese items through e-commerce platform initially. The first product launched by the "boAt" was an Apple's charging cable and charger which got huge popularity and demand due to affordable price and durability.

As per boat official page, boAt's philosophy has always been to "create experiences and not products. As a brand, boAt doesn't create products and tell the consumer how to fit them in their life. Instead, it listens to the target audience and connects with their needs to create products that enhance their lifestyle. What differentiates boAt is that it is an aspirational yet affordable brand for enthusiasts who expect the latest available technology but also seek style and affordability".

According to filings with the Registrar of Companies (RoC), "boAt"s FY18 revenues jumped approximately 3 times to Rs 108 crore from only Rs 27 crore in FY17. In 2019, "boAt" sales crossedr 6,000 units per day. The received huge response on Flipkart with 10,000 pieces of wearable was sold within one minute of launch. They expanded and opened offices in Delhi and Mumbai, grown to a 25-member team. Gradually they signed up celebrity brand ambassadors, and build a fan community of over 800,000 names as 'boAt heads'. "boAt" achieved a 2.6% market share globally and grabbed market leader position with 30% market share.

"boAt" designs its products in India and outsources its manufacturing and assembling in China and therefore imports goods worth Rs 1,316 Cr in FY21from China. The company had raised $100 million in a round led by Warburg Pincus at the start of Q4 FY21 with plans of shifting its manufacturing to India. The consumer electronics brand is looking to tap into the Indian government's production linked incentive (PLI) scheme.

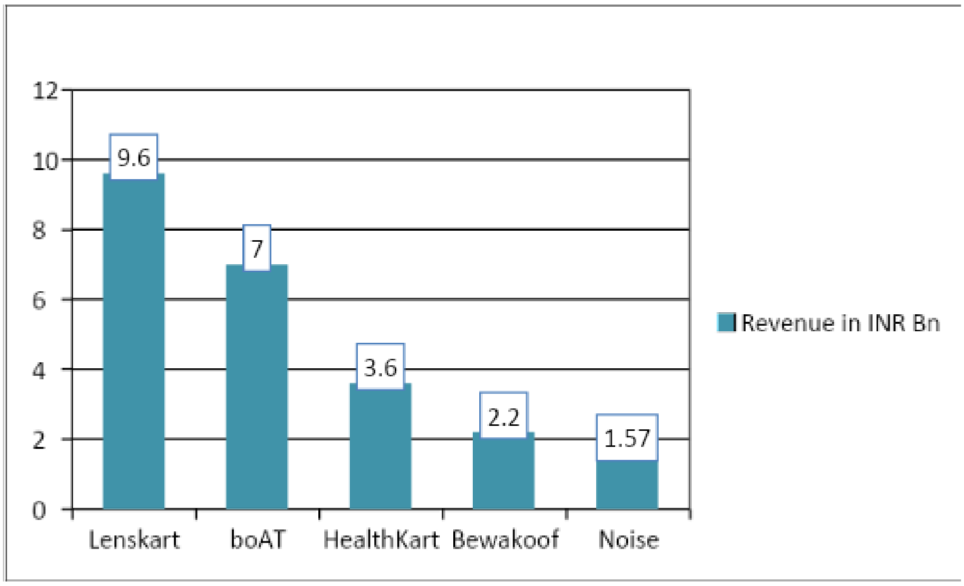
D2C Industry

India D2C industry is witnessing tremendous growth with estimated market size of about 55 billion U.S. dollars in 2022. In addition India is becoming the third-largest digital shopping base after the United States and Chin due to approximately 700 million internet users and 190 million online shoppers. Online shopping has become a convenient method of discovering new-age homegrown brands offering competitive prices for a young and an aspirational userbase with higher digital maturity and disposable income. This give encouraging environment to D2C, or digital-first brands, which use the online platform to sell directly to the consumers bypassing the traditional distribution network of wholesalers, stockists, and retailers. Their strength lies for agility in customer interaction and engagement, pre and post purchase, D2C brands are typically the first to introduce new products and innovations to the market. Currently, India is home to 600 or more direct-to-consumer brands. Companies using the direct-to-consumer (D2C) channel inevitably develop an emotional connection with their customers, informed through a distinctive brand identity and an apparent value offering. D2C organizations are targeting and customizing the purchasing proposal to Generation Z consumers who heavily rely on digital platforms for updates and trends with stronger readiness for new brands and shop online [14].

Growth of D2C market in India

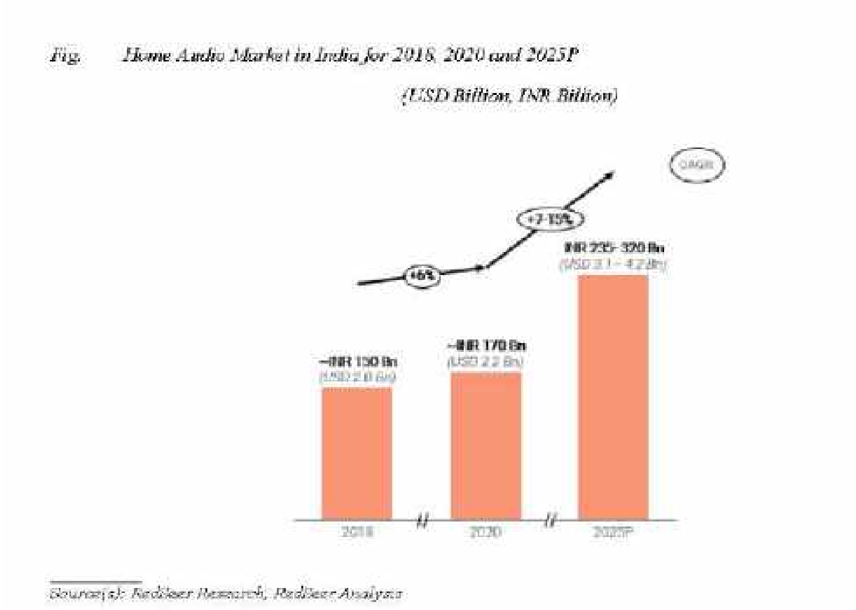
D2C brands like Lenskart, Licious, BoAt, and Mamaearth are launched in India across a wide range of segments such as grocery and gourmet, beauty and personal care, health care, consumer electronics, and many more in last few years. Convenience of establishing online stores is contributing towards the growth in D2C sector especially for start-ups and new-age companies involved in developing a blockchain that was better able to fill in logistical gaps and affording them the possibility of creating online storefronts.

The performance of D2C brands in financial year 2020, the Indian optical prescription eyewear retail chain, Lenskart, generated revenue of over 9.6 billion Indian rupees. This was, by far, the highest value among leading direct-to-consumer startups in India. In the same period, “boAt” recorded revenues of around seven billion rupees and it is among the few companies that have become profitable while raising limited amounts of external funding [2].



Home Audio Market

Home Audio which includes home theatre systems, sound bars, wired speakers, portable speakers, luxury audio systems (Hi Fi Systems), grew from approximately ₹150 billion (approximately USD 2 billion) in 2018 to approximately ₹170 billion (approximately USD 2.2 billion) in 2020 and projected to reach ₹235-320 billion (approximately USD 3.1-4.2 billion) by 2025.



With increasing penetration of Smart-Tech including, smart-homes, smart-entertainment, smart-TVs etc., adjacent categories like Soundbars, Home theatre systems are projected to drive growth in the home audio segment. The increasing consumption of OTT, accelerated by pandemic induced lockdowns, has also been instrumental in driving growth in this category.

Smart personal audio market

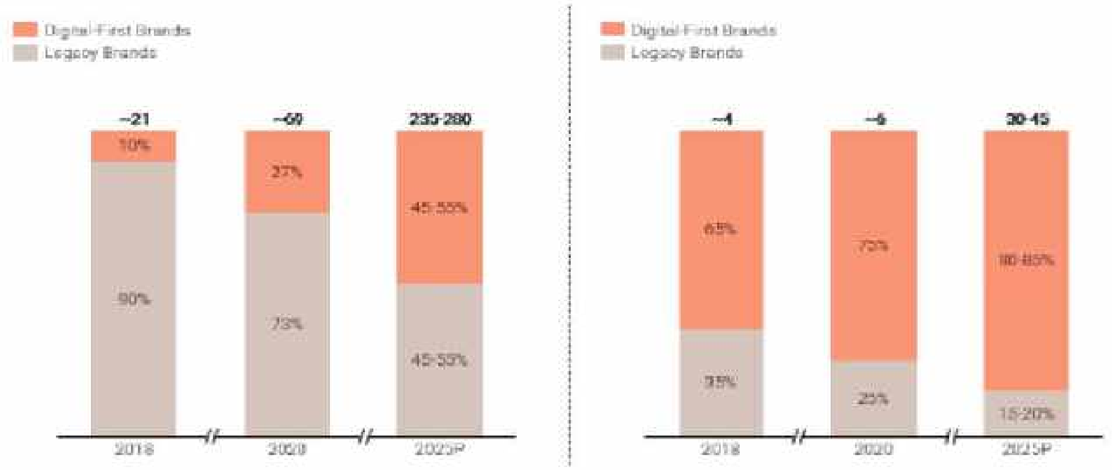
Global smart personal audio market stands at 118.8 million units in 2021. India's smart personal audio market has grown to 14% with 62 per cent growth in third quarter (Q3) this year with 16.6 million units shipped. The TWS (true wireless stereo) segment was the main driver in India, growing 92 per cent to reach 7.3 million units [4].

Hearables and wearables segment in personal audio market have been the fastest growing segments in the consumer devices market growing at a CAGR of 32% and 34% respectively from 2018 to 2020. They comprise of approximately 27% of the hearables market and approximately 75% of the wearables market, by volume.

Due to improved access to technology, increasing reliance on local markets, development of India's manufacturing and tech-based abilities and the consequent fall in logistics costs, the consumer devices market is projected to grow at 15-25% CAGR to reach ₹1,400-1,800 billion (USD 19-24 billion) by 2025. At this level, consumer devices will represent 1.4-1.8% of India's retail market. [14]

Fig. India Hearables Market (LHS) and Wearables Market (RHS) split by Brand Type for 2018, 2020 and 2025P

(Million Units)(% of the Branded Market)

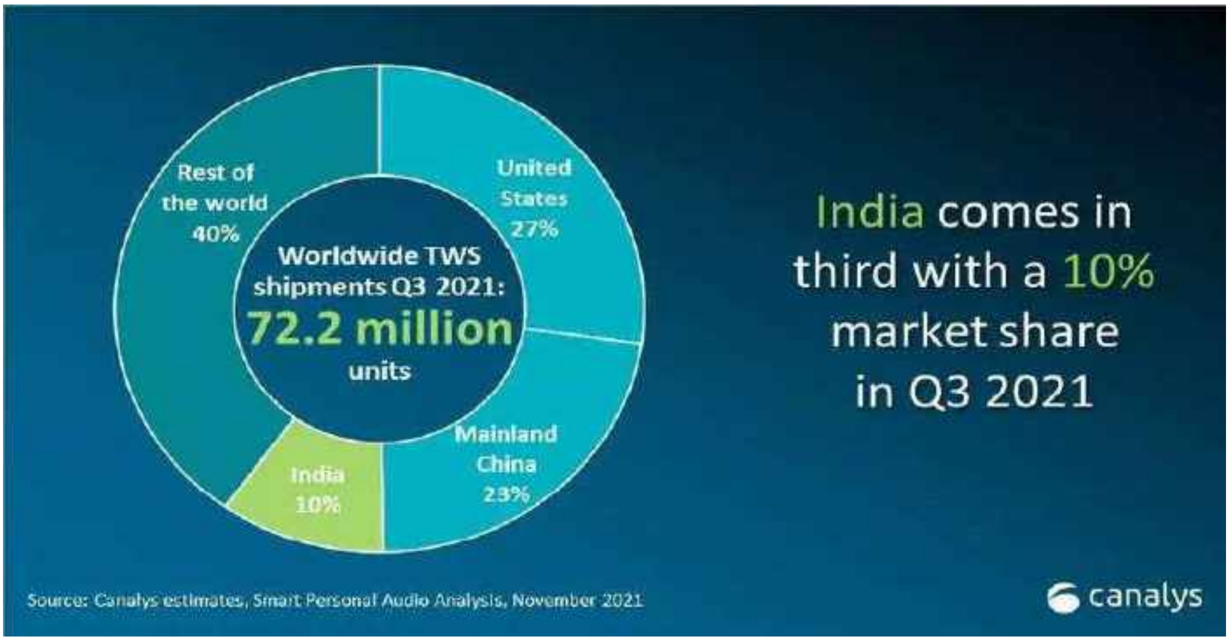


Source(s): RedSeer Research, RedSeer Analysis

Direct-to-Customer channels grew from 40% of the total hearable and wearable retail market to 50% between 2018 and 2020. By 2025, digital first brands are projected to hold 45-55% and 80-85% shares in the Indian Hearables and wearables markets respectively, by volume [14].

TWS (true wireless stereo) market

India is the third largest TWS (true wireless stereo) market with a market share of 10 per cent. Make in India brands like "boAt", Noise and Boult and other smartphone players, such as Realme, rapidly growing their TWS shipments. Apple maintained its leading global position in TWS, shipping 17.8 million units, but its shipments declined by nearly a third compared with a year ago, due to a significant drop in demand as consumers waited for the third-generation devices.

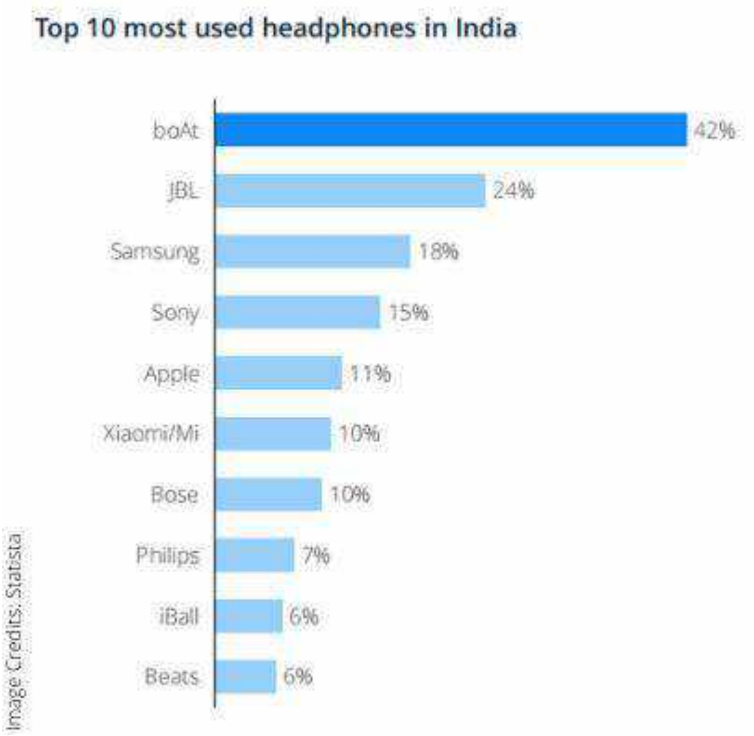


"boAt" broke into the top five for the first time, shipping 2.8 million units. Edifier was close behind with 2.7 million units. [5]

Worldwide TWS shipments and growth Q3 2021

Vendor	Q3 2021 shipments (million)	Q3 2021 market share	Q3 2020 shipments (million)	Q3 2020 market share	Annual growth
Apple (incl Beats)	17.8	24.6%	26.8	37.6%	-33.7%
Samsung (incl Harman subsidiaries)	8.7	12.0%	7.7	10.8%	12.7%
Xiaomi	4.9	6.8%	6.3	8.8%	-21.3%
boAt	2.8	3.8%	0.9	1.2%	220.5%
Edifier	2.7	3.8%	2.5	3.5%	10.1%
Others	35.4	49.0%	27.2	38.1%	30.1%
Total	**72.2**	**100.0%**	**71.3**	**100.0%**	**1.3%**

Note: percentages may not add up to 100% due to rounding
Source: Canalys Smart Personal Audio Analysis (sell-in shipments), November 2021.



Mobile Accessories Market

Mobile accessories market which includes chargers, cables, protective cases, memory cards and power banks is rapidly growing with the new smartphone users especially in the Tier 2+ markets in India. In past the market is dominated by the unbranded segment but gradually number of brands entering this space for growth as this segment is projected to to reach approximately ₹330 billion (approximately USD 4.4 billion) with 8% annual growth rate . The Mobile Accessories market in India remained range bound around 31. USD billion from year 2018 to 2021 due to the pandemic. [14]

“boAt” scope and performance

“boAt” has a large addressable market entire Consumer Devices market in India of approx. ₹660 billion (approx. USD 9 billion) in 2020, which is projected to grow to approx. ₹1400-1800 billion (USD 19-24 billion) by 2025. This comprises of the hearables and wearables, home audio, gaming accessories, personal care appliances, mobile accessories categories of the consumer devices market in India. Specifically growth is propelled by GenZ and Millennial population due to their high disposable income and attraction towards internet data consumption on Smartphone and adoptability for online payments, logistics. [14].

Category	Overall Market (2020)	Overall Market (2025P)	Overall CAGR 2020-25P	Branded Market (2020)	Branded Market (2025P)	Branded CAGR 2020-25P
	In INR million, except for %					
Consumer Devices	660	1400-1800	15-25%	362	930-1275	20-30%
Gaming Accessories	18	76	~35%	16	70	~35%
Personal Care Appliances	44	81	~15%	21	45	~15%
Home Audio	170	235-320	7-15%	121	175-240	8-15%
Mobile Accessories	226	330	~8%	80	130	~11%
Wearables	32	170-275	40-55%	30	160-260	40-55%
Hearables	170	515-765	25-35%	94	350-530	30-40%

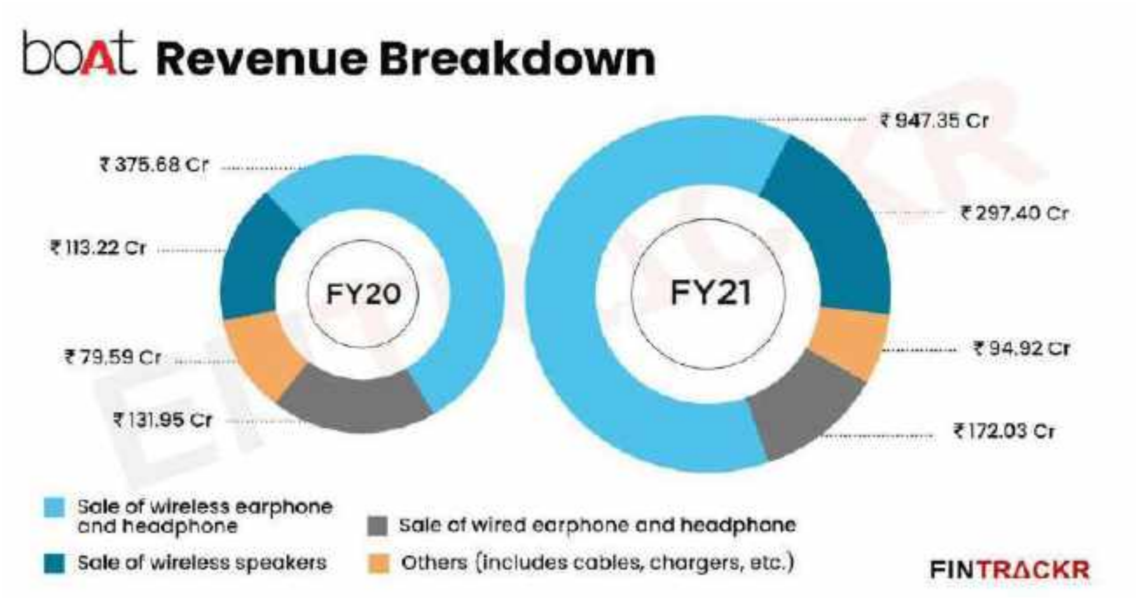
Source(s): RedSeer Research, RedSeer Analysis

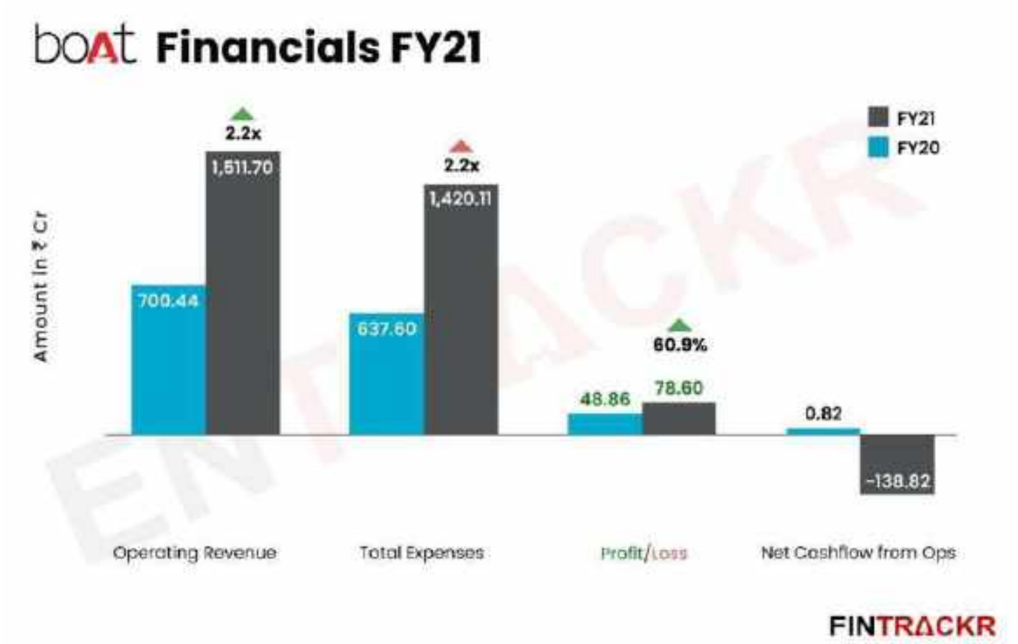
According to a recent report by a research firm Canalyis , “boAt” has been profitable and crossed Rs 1,500 crore revenue mark in FY21 and secured the fourth position in the list of global true wireless stereo shipments with an annual growth of 220.5% in India which is third-largest market for truly wireless earphones. The company has shipped about 2.8 million units in Q3, 2021, gathering a 3.8% market share in the TWS segment, globally. During the same time last year, “boAt” shipped around 0.9 million units and occupied 1.2% of the global market share.

Year	INR (Cr)			
	Revenue	**Operation**	**Other**	**Profit**
FY17	27			
FY18	108			
FY19	239			
FY 20	704			48.86
FY 21	1,531	1,511	19.57	78.6

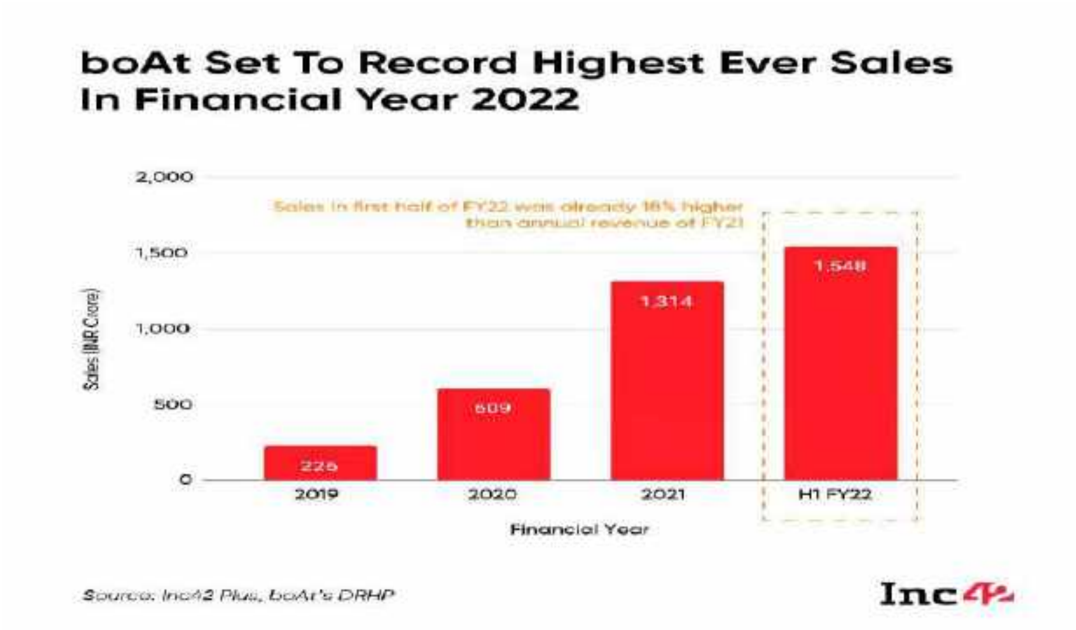
“boAt” has became the first consumer electronic direct to consumer (D2C) startup to cross the Rs 1,500 crore revenue mark and 61% increase in its profit even during the pandemic. COVID accelerated demand for wearables and “boAt” was the key beneficiary. [8]

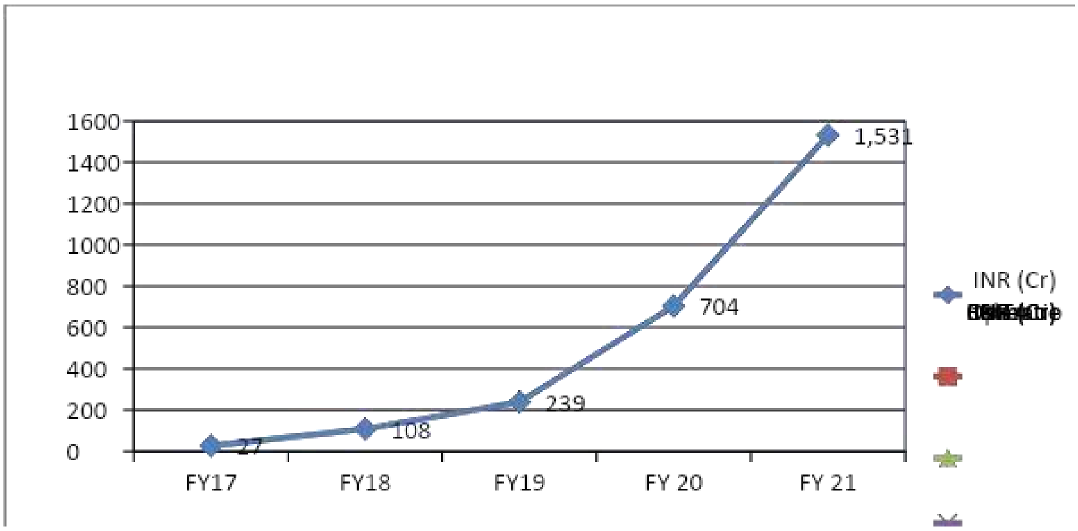
The bOAt continued its outstanding performance in 2022 and achieved stupendous performance with revenue of Rs 1548 Cr in H1FY 22.





As per a Statista report "boAt" Wireless earphones and headphones sales grew to Rs 947.4 crore in FY21 from Rs 375.7 crore in FY20 and this product line contributed highest 62.7% of total "boAt" sales operating revenue during FY21.[2]





Understanding Young Consumers

Mr. Aman Gupta shared his experiences with Forbesindia.com during an interview. He highlighted the “boAt” journey and its brand building. “boAt’s team religiously take customer feedback to understand the evolving needs and preferences or perception about the brand to build trust and for launching new products on the different platform. Customers were facing the frequent snapping of the mobile charging cable and “boat” identified this challenge. The product was designed and launched with tagline ‘Switch to indestructible cable’, and it got well with the consumers”. Mr. Gupta elated and shared that “It got us into consumer minds, and we took off,” Gupta recalls. [11]

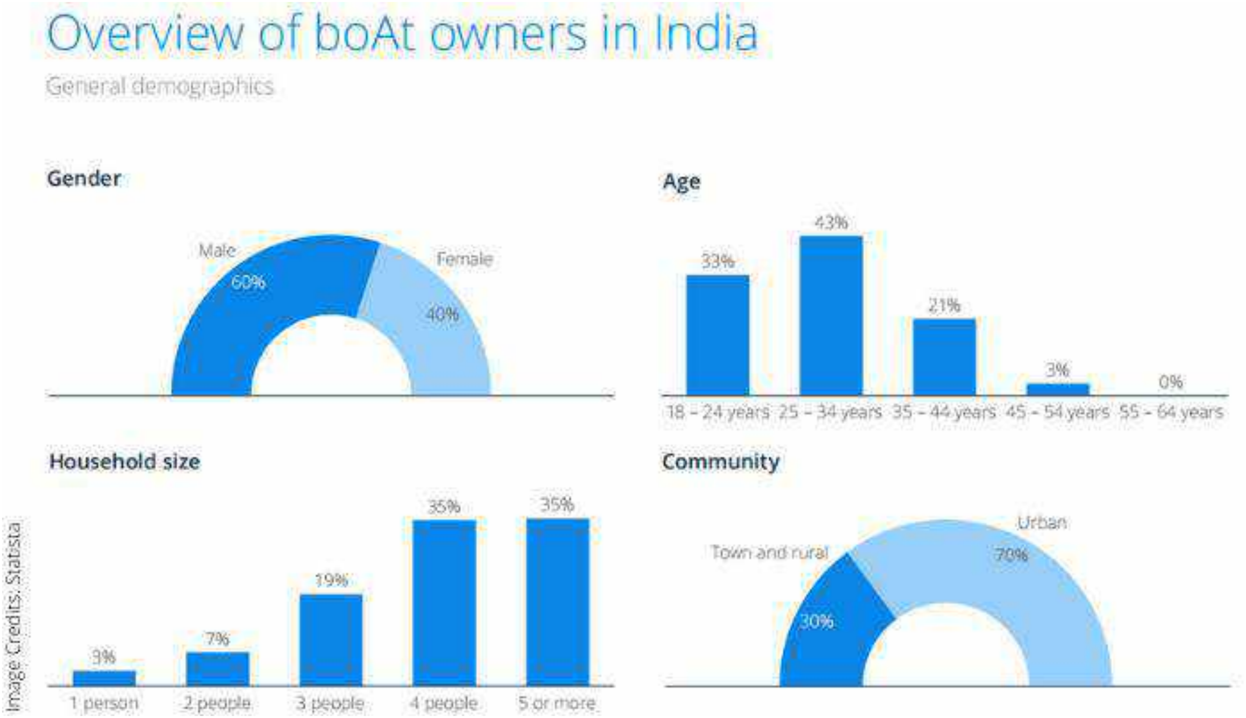
“We talk to consumers in a language they understand. Millennials are very impatient, and if we don’t evolve with them, then we are dead," said Aman Gupta, co-founder and chief marketing officer.[3]. “boAt”also first started hiring a lot of millennials who understood the behaviour of the brand’s young consumers. During this evolution process “boAT” also realized that today’s consumer is using their headphones and earphones as a fashion accessory rather than only as a utility product. Currently their target group is in the 18-24 brackets and in future they want to expand to age group 18-35.

Zara of electronic fashion

D2C brands prioritize new releases and greater SKU assortment with ‘online-first’ focus through online channels and eCommerce marketplaces and cover approximately 90% pin codes with access to the national market at significantly lower costs than traditional legacy brands. D2C channels facilitate to maximize profitability while exercising greater channel control. The D2C brands save their inventory and logistics costs with launch their products online through own website and Commerce channels. They focus on assortment of different category, style as well as build depth addressing various needs and preferences of consumer.

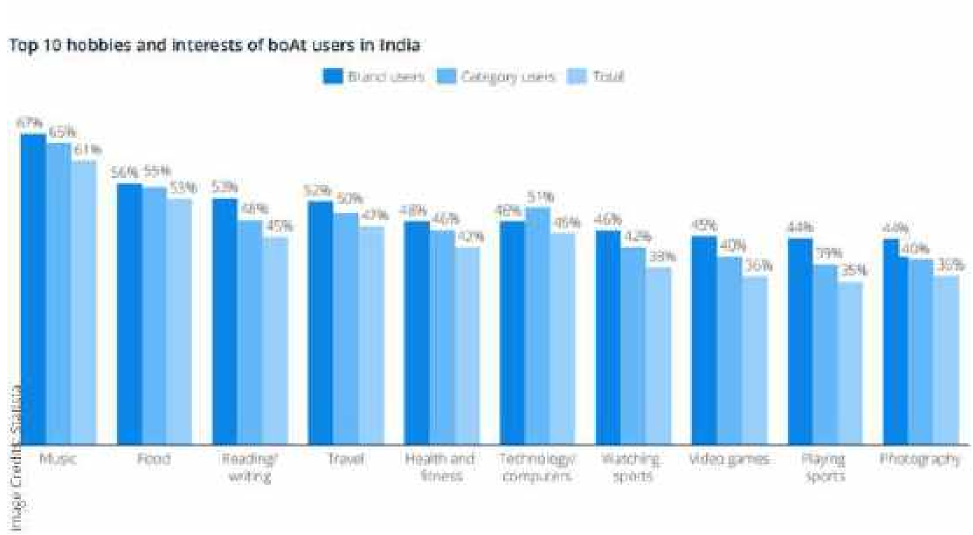
In India D2C brands target the young population- GenZ and Millennials who biggest spenders on latest trends and likely to continue with start of their prime earning ages. This generation follows active lifestyle, tech-savviness and late marriage, as compare to other strata of population. boAt target this segment with innovative products with different texture, colour, print, and design to attract as latest fashion within their pocket and budget. Credit-Suisse reported that smartphone users in India are dominated by GenZ and Millennials with 70% contributions who are digitally savvy and active consumers of social media content.
These users follow the latest trend with high digital maturity, and enthusiasm to follow celebrities, personalities and influencers through usage of social media apps. The interconnectedness of digital platforms like Facebook and Instagram gave them exposure of latest contents from different businesses and brands digitally.

D2C brands like boAt are better positioned to track customer journey and transactional behavior than offline-first legacy brands. “boAT”'s target value for money segment and offer portfolio of personal audio products, the truly wireless earphones in the price range of Rs. 1,000 to Rs. 3,000 with a one year warranty. Like one of the product, the “boAt”Airdopes 131 wireless earbuds are priced at Rs. 1,299 with charging case and having 12 hours of playback time through a 650 mAh battery on Bluetooth v5.0. The company also offers on several products. with vance feature like 2,600 mAh charging case, and 150 hours of playback time.



Hearable & wearables market in India is growing along with Smartphone market as hearables and wearables are high repurchase frequency electronic equipments which most online shoppers repurchase within one to two years. This category is not only growing with the new smartphone users, but also with the repurchase from existing smartphone users with the expansion of use-cases. Similarly, with technological advancements like smartwatches, truly wireless earphones with a larger batter life and better sound quality etc. users are excited to try and follow the trend. Wearable are used for keeping track of health & fitness, time and mobile notifications / updates., also attracting consumers for repeat purchases. Mr. Aman Gupta also highlighted and shared “That's the change we saw. And that’s where we bring in differentiation in form of price points and product quality. We called ourselves the Zara of electronic fashion. While our brand struck the cord with young ones, we also attracted those in the middle age group,” he adds.[6]

Aman emphasizes that if a brand doesn't listen to its consumers, they will buy something else. This is a time when Indian shoppers are getting attracted and giving due respect to homegrown brands, which was not happening earlier. [6]



Product

boAt portfolio includes products under flagship “boAt” brand, as well as under other brands such as “RedGear”, value-oriented gaming accessories brand, “TAGG”, premium audio and wearables brand, “Misfit”, personal care and grooming sub-brand, and “DEFY”, our value-oriented audio brand [14].

Brands	Product Category and Positioning	Year of Launch / Acquisition
boAt	Audio, wearables and mobile accessories	2014
RedGear	Gaming accessories	Acquired in 2020
DEFY	Audio and wearables	2021
misfit	Personal care	2021
TAGG	Audio and wearables	Acquired in 2021

Source- SEBI-Securities and Exchange Board of India 2022, Viewed on 16 June 2022, *Public Issues : Draft Offer Documents filed with SEBI- Imagine Marketing Limited* <https://www.sebi.gov.in/filings/public-issues/jan-2022/imagine-marketing-limited_55666.html>

New Product Launch journey in “boAt”

“boAt” works closely with Qualcomm for new and innovative products and it become important for young consumers who are buying product online and also 80 per cent of sales contributed through the online medium especially by Amazon and Flipkart

1. Sturdy cables for Apple iPhone chargers
2. Earphones and headphones
3. Smartwatches and Earbud

Positioning

“boAt” position its products as affordable, durable, and ‘fashionable’ to millennial in consumer electronics category with focus on audio products and accessories. “We have tried to change the consumer mindset. We don’t sell our products as electronics only. We sell them as lifestyle accessories. We are trying to portray that our products can be a part of your everyday fashion.” Aman Gupta shared in published interview. [6]

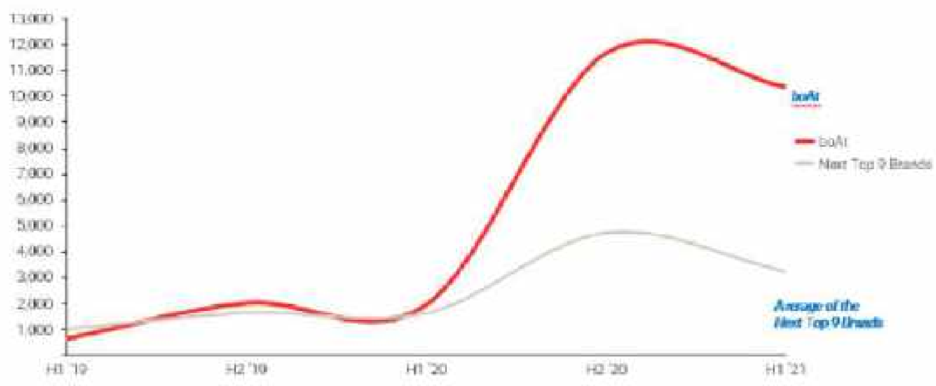
“boAt” became fastest growing brands by value in 2021 for the combined Indian earwear and wearable watch market. boAt exponentially grew approximately 15 times in terms of semi-annual sales by value in Indian National Rupees from year 2019 to 2021 of the combined earwear and wearable watch categories. Its growth 3 times the average growth of Next Top 9 Brands (excluding boAt). The earwear category includes TWS, neckbands and wireless over-the-ear headphones that supports functionality beyond audio (such as smart assistant, health & fitness tracking, audio experience enhancement or language translation), and is synonymous with term ‘wireless hearables’.

Pricing

“We sell our product at a margin. We never lost money. We do not have too many expenses that we have to load too much on, so we kept the pricing logical — not too cheap, not too high. Just logical right pricing,” adds Aman. [6]

“Today we have 10-15 percent of our business offline. We will do more than Rs 300 crore only offline, which is higher than a lot of B2C brands that are doing it only directly. So we have to only spend on the bottom of the funnel and probably keep that consumer with us. So, it was just about how we wanted to position ourselves initially,” he explains. [6]

Fig. boAt vs Next Top 9 Brands - Semi-Annual Sales by value (in INR million) of Combined Earwear and Wearable Watch between H1 2019 and H1 2021.



Source(s): Data - IDC India Monthly Wearable Device Tracker, Nov'21 Release; Charts - Research, RedSeer Analysis

Promotion

The marketing become a very important element for any D2C brand as these brands attempt to build up a loyal customer base and attract new customers. The brand engagement play important role with right mix of communication and facilitates interaction with end customers. For the D2C brands implementation of online direct sales, three strategies have emerged namely ‘a pure online direct sales strategy’, ‘a multi-touch-point strategy’, and ‘a platform strategy’. It also minimizes conflicts with traditional sales partners (Leimstoll, and Wölfle, 2021).

boAt made effective marketing strategies by focusing on building the awareness of flagship “boAt” brand on own website and e-commerce and made substantial efforts for creating long term loyalty through word of mouth and user’s reviews. boAt roped in the famous emerging personalities including film actors, cricketers, musicians, social media influencers as community of brand ambassadors and run the campaigns through consistent efforts on digital mediums and social media.

The company has roped in emerging actress Kiara Advani, Masaba Gupta, & actor Kartik Aryan from bollywood and Singer & Actor, Neha Kakkar and Guru Randhawa, Diljit Dosanjh, and cricketers such as Hardik Pandya, KL Rahul, Shikhar Dhawan, Jasprit Bumrah, etc for brand endorsement and multi-platform promotions. This helped them to target millennial who are followers of subcultures — cricket, Bollywood and music.

Sponsorship events and Gamification- with tie-up BookMyShow.com and sponsored Singer A.P. Dhillon, a global sensation in Punjabi music and was first time touring India. His shows were houseful in multiple cities and received good response for contests around him on “boAt” Instagram and Twitter pages. “boAt” team intelligently spot the emerging young star and most celebrities during the initial phase of their career and popularity and created buzz through them as these brand endorser become popular and were cited in media using “boAt” products.

boAt captured the opportunity during IPL season in the 2021 with lauched famaous campaign ‘What Floats Your “boAt” with actors Kartik Aaryan and Kiara Advani to dominate consumers eye balls during lockdown phase for top of mind recall of their D2C brand.

“boAt” focuses on digital and social media marketing through online platforms and spends almost 10.3 % of “boAt” annual expenses on advertising and promotion.

Focus on ROI in Marketing

In one of the Interview Aman Gupta shared “Marketing is one area where we did not stop investing but we didn’t waste money either. We used to make money on every sale and the profitability was given back to the marketing. So, our expenses were very low. We never hired expensive resources. At the time, when B2C was not as hot as it is today, revenues were also very less. But that mindset of being frugal helped us”.

Engagement through engage online influencers

There are evidences from previous research that social media presence influence on awareness of D2C brands and enhances promotional effectiveness with good word of mouth publicity (Clive, R.E. & Agrawal, 2020).

As social media platforms provide the new opportunity for every organization .These emerging platform like facebook, Instagram are dominated by boAt’s campaign for relevant new or emerging trends. Along with celebrities who acted as macro-influencers, they worked with non-celebrity influencers who have even better traction than celebrities. Digital-first presence and business model has its own risk and any negative comments, review or trend, allegation related to boAt products may lead to negative publicity online marketplaces or social media.

Roadblocks by Pandemic

“boAt” faced the problem and hurdles during nationwide lockdown as only essentials were being allowed to be sold. Repeated waves across globes posed various challenges like:

1. Crippled supply chain as everything globally was hit by covid-19.
2. Shortage of CHIP- chipset manufacturing issue globally.
3. Demand-side constraints- consumer were not keen on the non-essential items

However there was flip side of pandemic. The sudden increase demand for wearable’s, particularly amongst the youth, owing to the rising health-consciousness as a lifestyle change due to motivation during lockdown and improve immunity. Also the surge in demand for hearable during this period due to the work from home and increased OTT content viewing on mobile devices and the increased online time for online meetings and classes. With various emerging use cases, such as work, study, music, video, sports, gaming and travel, consumers are increasingly owning multiple pairs of hearables devices with specialized functions. . Similarly, there was an increase in demand for gaming accessories as consumers staying at home resorted to playing games to keep themselves engaged. These changes in consumption and demand patterns may remain in future also with the rising disposable income of Indian consumers[14]

Action taken during Pandemic

"boAt" founders surprised as there was 20 per cent increase in demand for its products amidst the COVID-19 pandemic due to work from home (WFH), workout from home and study from home which they subsequently captured and therefore achieved strong uptake month-on-month as through their product innovation and expanded portfolio.[9].

Also, following steps facilities to sustain "boAt" during the pandemic and lockdown period:

- Keeping higher inventory to minimize the impact of uncertainty
- Moving away from being dependent on one country in terms of supply chain management.
- Shifting source country from China to Vietnam and India for production.
- TWS market is very competitive therefore necessary to invest in R&D and become independent as the industry changes very fast.
- Retaining the talent: Lot of organizations especially start-up were laying off employees. "boAt" were having a small team and adopted different approach. "I personally feel that our company does not hire and fire fast. We didn't hire too many people and are a sustainably strong company," Gupta said. "We don't burn money, we earn money,"

Current Status and Future Plans:

1. Make in India Plan

"boAT" has been dependent China outsourcing model but they are now look alternative with diversifying its manufacturing to India with Make in India focus.

"Going forward, with the Government's support, we will focus on building capabilities in domestic R&D and undertake vertical integration across both the hearable and wearable space to establish India as a global supplier," said Sameer Mehta, co-founder, "boAt"in a statement.

2. Expanding with new product launches and category penetration

boAT is becoming aggressive with its plan of new product launch in various categories like smartwatches and wearable for fitness to capture the growth rapidly in the fiercely competitive market captured by Apple, Samsung, Xiaomi.

3. "boat" Expansion Strategy

In June 2021, "boAt" acquired Tagg Digital, a Delhi based consumer electronics Goods Company to strengthen its earphone and headphone arm.

4. "boAt" IPO Plan

"boAt" is planning Rs 2,000-crore initial public offering with the Securities and Exchange Board of India (SEBI) in coming months.

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"An Investigation into Digital Marketing and its Effects on Contempary Markets"

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Abstract

The goal of this review article is to examine the significance of digital marketing for both consumers and marketers. This essay starts with a brief introduction to digital marketing before focusing on the various forms it can take, the ways in which it differs from traditional marketing, as well as its advantages and disadvantages as well as its significance in the modern world.

As the world transitions from analogue to digital, so does marketing. Digital marketing, social media marketing, and search engine marketing are all becoming more and more popular as technology advances. The number of internet users is rising quickly, and as digital marketing relies heavily on the internet, it has benefited the most. Consumers are changing their purchasing habits and leaning more toward digital marketing.

Introduction

Digital marketing is the area of marketing that promotes goods and services using internet-based and online-based digital technology like desktop and mobile computers, as well as other digital media and platforms. Because of its growth in the 1990s and 2000s, it altered how companies and brands use technology for marketing. Digital marketing campaigns are increasingly common, combining search engine optimization (SEO), search engine marketing (SEM), content marketing, influencer marketing, content automation, campaign marketing, data-driven marketing, e-commerce marketing, social media marketing, and other digital platforms as they have become more integrated into marketing strategies and daily life

The term "digital marketing" encompasses non-Internet platforms that offer digital media, such as television, mobile phones (SMS and MMS), callback, and on-hold ringtones. Digital marketing differs from online marketing in that it includes non-Internet channels.

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DIVERSE DIGITAL MARKETING COMPONENTS

Internet Advertising

A search engine is an online tool that aids users in finding the information they need.

Search engines include Google, Yahoo, Bing, Baidu, and others. Any effort that raises a user's website's ranking in a search engine is referred to as search engine marketing. Search engine marketing comes in two flavours: sponsored search and search engine optimization (SEO).

Email

Email continues to be a channel that generates medium to high returns on investment for businesses for a number of reasons, but one of them is email's adaptability. Email lets you use the most recent trends even though it may not be the newest technology.

Beyond generating leads and sales, email benefits you in a number of other ways, including the following: Email is so widely used that it has 3.9 billion users in 2020 and is projected to reach 4.3 billion users in 2023—more than half of the world's population!

Email continues to yield the best results, with 73% of survey participants rating the channel as outstanding, compared to 72% and 67% for SEO and paid search, respectively.

You may anticipate a $42 average return on investment for every $1 spent on email marketing.

social media.

There are a number of extremely important reasons why social media marketing belongs on this list, but it goes beyond the fact that there are now 3.81 billion active social media users. Social media has changed from being a way for people to connect personally to something greater, bigger, and better than what it was first intended to be.

Affiliate Promotion

In affiliate marketing, the parent company pays affiliates for each customer or website visitor their marketing initiatives or strategies on the firm's behalf result in. Pat Flynn's book Smart Passive Income claims that "Affiliate marketing is the technique of generating income by advertising the goods of other people (or businesses). You discover a product you enjoy, spread the word about it, and get paid a percentage of the sales price ".

Display Advertising Online

Traditional marketing involves placing a billboard or banner advertising a company on either side of the road, as well as placing an advertisement in a magazine or newspaper. An online variant of it is display advertising. Marketers can now leverage online.

TRADITIONAL AND DIGITAL MARKETING COMPARISON

The most well-known type of marketing is traditional marketing. Many people are accustomed to conventional

marketing because of its durability. Ads in a newspaper or magazine are a tangible illustration of conventional marketing. A billboard, brochure, radio or TV advertisement, poster, etc. are also included. This method of marketing is not digital. While digital marketing reaches customers through a variety of digital media.

The following comparisons are provided.

Comparison basis	**Traditional marketing**	**Digital marketing**
Definition	It is one type of marketing that utilizes media, TV, or magazine to advertise any business's services and products.	It is one type of marketing that uses the internet and social media for advertising businesses.
Engagement	Low	Relatively high
Conversion	Slow	Extremely fast
Nature	Static	Dynamic
Investment returns	Not easy to measure	Simple to measure
Effectiveness	More expensive Less effective	Less expensive More effective

Targeting	Standardized	Customized
Tracking	Not possible	Possible
Reach	Local	Global
Tweaking	Not possible once the advertisement is placed	One can change or edit anytime
Results	Slow results	Quick and live results
Communication	It is mostly one-way communication	It is a two-way communication
Interruptions	It is not easy to skip the advertisements, as they are bound to the users.	One can easily skip between advertisements if it does not interest them.

Digital marketing benefits

The primary benefit of digital marketing is the cost-effective and measurable way in which a specific audience can be addressed. Brand loyalty will rise, and online sales will increase, among other benefits of digital marketing.

Global reach: For a very cheap investment, a website may help you discover new markets and conduct business internationally.

Lower cost - compared to traditional marketing strategies, a well-planned and focused digital marketing campaign can reach the relevant customers for a lot less money.

Results that can be tracked and measured – Determining the success of your internet marketing effort is made simpler by using web analytics and other online metre tools. You can learn in-depth details about how visitors interact with your website or react to your advertising.

Various Channels to Increase Your Traffic

In the field of marketing, one has a variety of options at their disposal to successfully run their firm. Business owners are free to use social media, content marketing, PPC, SEO, and other services.

media efforts to increase website traffic

Customer Engagement with Mobile Devices

We live in a portable world because so many individuals now travel with electronic gadgets like computers and smartphones. Since Google's mobile-first upgrade, practically all websites have been designed to be easily navigable on mobile devices.

Mobile users may be more prevalent than ever, and the likelihood that they will make a purchase is high.

CONCLUSION

People are investing more money in online content, and businesses who find it difficult to incorporate this fact into their advertising plan must swiftly adapt. The amount of time people spends online each year increases, and as a result, the role that digital platforms play in their lives also increases. The promotion of digital media is the primary goal of digital India. Because customers may utilise digital platforms from anywhere in the world at any time, businesses must switch from traditional to digital marketing strategies.

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A Study of Major Reporting Parameters related to Strategies and Operations in Manufacturing Organizations.

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Abstract

Managers use management reports and other analytical tools to monitor the performance of their company's business units. Using real-time indicators, senior executives and leadership make their strategic choices and track the expansion and growth of their companies. Management reports also serve as analytical tools for managers to monitor the operation of their various departments and plants. A management report gives the appropriate metrics to gain a quick overview of the state and direction of your company, which aids in your understanding of the situation.

The objective of this study is to know the awareness, usage, ease of implementation and effectiveness of selective strategic and operational parameters used for management reporting tools in manufacturing organizations.

Keywords: Strategic parameters, Operation parameters, Management reporting tools, Manufacturing organization.

Introduction

Financial and operational data essentially demonstrates the value of a company over a specified time period. Insights on the organization's performance are provided via reporting to management, enabling decision-makers to choose the best course for boosting operational effectiveness and making crucial choices to maintain competitiveness. Many businesses do this by utilizing expert management reporting software. No information can be hidden when supported by strong visualizations made with a dashboard maker, eliminating the chance of human error and detrimental business effects.

What should be included in management report?

- The strategic objectives should be set.
- Collect and purified data.
- Selection of proper KPIs for the target audience.
- Consider customer/ stakeholder inputs when preparing the reports.
- Go Digital and Make sure to balance your visualizations.
- Create a report that can be read and drilled down.
- Deliver maximum possible real-time data that supports the objectives.
- Try to leverage AI and predictive analytics technologies.
- Keep the dashboards interactive and always strive to get better.
- Make an effort to be cohesive, consistent and make true representation of data.
- Effectively compartmentalize your info.
- Make a timeline that can be scanned.
- Integrate the reports with authentic data sources.
- Consider using self-service analytics tools.
- Boost the use of data-driven culture.

Importance of Management Reporting Tools

- Measuring strategic metrics to evaluate and track performance:
  By this point, it should be clear that if enterprises wished to expand, they would need to develop a method of comparing their performance not only to that of their competitors but also to that of their own.
- Establishing precise performance benchmarks:
  Benchmark is a way to determine what is successful and what is not in learning and reproducing the greatest and worst practices to adopt or stay away from.
- Improving communication between coworkers, clients, investors, and partners. The visibility of various actions across departments is increased via management-type reports, which also enhance internal communication.
- Collaboration:
  Senior-level reports boost inter departmental collaboration as a direct result of improved internal communication. People who are working together effectively towards a common objective can use management reporting discoveries to work together across departments on particular projects or initiatives, which will help them succeed in a number of crucial areas.
- Increasing engagement & motivation:

A well-written manager-level report makes crucial company data available to all, improving individual performance.

Prominent Management Reporting Tools – Available in market.

1.Microsoft Power BI

Power BI is an interactive data visualization software product developed by Microsoft with a primary focus on business intelligence. It is part of the Microsoft Power Platform. Users can view and manage reports created in Power BI through the web portal of Power BI Report Server, an on-premises reporting solution.

2.Tableau Software

Tableau is a product of Tableau Software company which is an American interactive data visualization software company focused on business intelligence. It was founded in 2003 in Mountain View, California, and is currently headquartered in Seattle, Washington. In 2019 the company was acquired by Sales force.

3.My Report Software

Report One has created My Report™ software in order to help the companies to organize, analyze and diffuse their data in the form of dashboards & reports, without changing the practices of work of the users. My Report™ is a reporting tool for management and decision analysis accessible to all manpower of your company. It is a product of Cynosure Solutions, France.

4. Qlick View

Qlik [pronounced "klik"] provides a business analytics platform. The software company was founded in 1993 in Lund, Sweden and is now based in Pennsylvania, United States. The company's main products are Qlik Replicate and Qlik Sense, both software for business intelligence and data integration.

5. SAP Crystal Reports

It can retrieve data from almost any data source and deliver it in a variety of forms, making Crystal Reports a well-liked report-writing tool that excels at data integration and customization. This is a reporting tool from SAP, AG, Germany.

6. Oracle Hyperion Interactive Reporting

Hyperion Interactive Reporting, which is a component of the Oracle Business Intelligence software line, offers executives, business users, and analysts a single query, data analysis, and reporting solution. Users who build queries and run them on demand to generate formal reports can swiftly get answers to business questions. It’s a product from Oracle Corporation, Austin Texas (earlier California) USA.

7. Clear Point

With Clear Point, you can quickly build scorecards and dashboards that update themselves. Clear Point’s strategy reporting software integrates data from multiple sources so that you can manage your objectives, measures, initiatives, and action items in one place. This is a software developed by the startup from Arlington Virginia, USA.

8. Jasper soft Reporting

The "most flexible, adaptable, and developer-friendly business intelligence platform in the world" is how Jasper soft describes itself. Jasper Reports is an open source Javareporting tool that can write to a variety of targets, such as: screen, a printer, into PDF, HTML, Microsoft Excel, comma-separated values or XML files. It can be used in Java-enabled applications, to generate dynamic content. It’s developed by San Francisco, United States based company.

9.Zoho Analytics

Zoho Analytics is a wonderful option if you're searching for a visualization tool that can gather, examine, and present a range of data pertinent to the performance and operations of your business. It’s a product from Zoho Corporation, Austin, Texas, USA.

10. IBM Cognos Analytics

It is a web-based integrated business intelligence suite by IBM. It provides a toolset for reporting, analytics, score carding, and monitoring of events and metrics. The software consists of several components designed to meet the different information requirements in a company. It’s a product of IBM, New York, USA.

Challenges for Management Reporting Tools

1. Clean up and combine data

Make sure the underlying data is correctly understood and that business rules and assumptions are consistently applied as the first step in producing meaningful reports.

2.Data security

There can be a requirement to secure the company's data and information inside each of the business teams in addition to automating data aggregation and ensuring users access restriction.

3. Report format

Once an organization has clean, consolidated data with the proper data security in place, the next step is to decide how to best represent it so that consumers can quickly get the meaningful information they need and can seek out more detail, if necessary.

4. Integrated planning and reporting

Reporting based on metrics and business plans is essential. There may be a significant disconnect between the information flow between the two systems and the processes that take place when the reporting system is separate from the planning system (typically using Excel or other ineffective tools).

A) Strategic Parameters of Management Reporting Tools

Essentially, these are variables in a strategy whose values are not predetermined.

1.**Manufacturing locations selection**

The most crucial element affecting business success or failure is its location. This is a long-term choice that should take both the organization's current needs and its long-term expansion plans into account. It might be extremely difficult and expensive to change a factory location that was made incorrectly.

2. Product Mix – Stock keeping unit (SKU) mix

A company's total number of product lines, as well as the various goods or services it provides, make up its product mix. A product portfolio or product assortment may also be used. You must take into account all of the many product versions you offer when figuring out how many SKUs should be in your inventory. This covers variances in colour, size, cost, and other technical factors.

3. Sales Mix – Domestic v/s Export

Sales mix is the percentage of a company's overall sales that come from a product. Domestic sales may have lesser margin than Export sales. They can have a detrimental impact on export sales for companies with foreign ownership since they are substitutes.

4. Sales Mix – Original Equipment Manufacturer (OEM) v/s After Market (AM)

OEM sales refers to the sale of your company's finished product which serves as a component of the final vehicle assembly. If the same finished goods or components therein are sold as spare parts in market then it is called as AM sales. This AM sales is however governed by the agreement between your company and final assembly produces company. AM sales usually has higher profit margin.

5. Profit Margin

Your company's profitability is determined by your profit margin. It is measured as a percentage and indicates how much portion in sales or services your business retains as profit. It is identified in financial statement language as **P**rofit **B**efore or **A**fter multiple variants like **I**nterest, **D**epreciation, **T**ax as a combination of PBDIT, PBIT, PBT, PAT.

B) Operational Parameters of Management Reporting Tools

A measurable aspect of how a process operates is called as an operational parameter.

1. Inventory Management

Inventory management is the process of tracking inventory from producers to warehouses and from these locations to a point of sale. It comprises of Raw Material, In Process Goods and Finished Goods. It is a crucial component of the supply chain. Having the appropriate goods available at the appropriate time and location is the aim of inventory management.

2. Make v/s Buy

A make-or-buy choice is made while deciding whether to manufacture a product component internally or to buy it from a third-party source. Make-or-buy decisions involve weighing the benefits and costs of producing something internally against purchasing it from a third party, similar to outsourcing decisions.

3. Labour Force Mix – Employee v/s Contract

Employees are those who are the part of the organization and are governed by specific set of salary and perquisite and generally are for long term. Whereas contract labour is the set of persons deployed by a company related with working criteria and generally are for short term.

4. Number of production shifts

Manufacturers who operate on a single 8 or 12-hour shift or may also operate on 3 shifts of 8 hours a day for continuous manufacturing. Due to the greater pay for night shifts compared to day shifts, adding a new work schedule will result in higher direct and variable costs for goods. But more manufacturing will result in lower indirect costs and fixed costs overall. In case of process manufacturing industry, 3 shifts continuous operations become mandatory.

5. Production capacity utilization

How much of a factory's production capacity is actually being used at any given time is referred to as capacity utilization. The key performance indicator (KPI) measures how much of a manufacturing operation's potential output is being met, considering both machine capacity and resource availability.

Literature Review

Rok Črešnar, Vojko Potočan, Zlatko Nedelko (2018) in the research paper "Management Tools for Supporting the Transition of Manufacturing Organizations to Industry 4.0: The Case of Slovenia" researcher provided information about the management tools, Industry 4.0, and digitalization phenomena. They provided a summary, outlining how manufacturing businesses can evaluate their level of readiness for the shift to Industry 4.0 and subsequently assist that transition by using management tools. They discovered that the use of management tools, particularly those of a digital character, can function as a reliable indicator of where industrial firms stand in terms of the digitalization of their processes and what type of transition to Industry 4.0, they will have. The body of research is sufficient evidence of the compatibility and complementarity of certain modern and antiquated management technologies with Industry 4.0.

Ernie Mazuin Mohd Yusof, Mohd Shahizan Othman , Yuhanis Omar and Ahmad Rizal Mohd Yusof (2013) in the research paper "The Study on the Application of Business Intelligence in Manufacturing: A Review" researchers mentioned that, This study opens up broad research for the application of BI in the manufacturing business by discussing the reviews. In order to fully utilise their company information, decision makers will benefit from further research that will transform data into meaningful knowledge and information. In the upcoming case study, it is hoped that the BI framework would enable the manufacturing company's operational and front-line staff to gain from constant improvements in on-time delivery performance.

Sandeep Jagannath Gunjal (2020) in the research paper "A STUDY OF ERP AS A CHANGE MANAGEMENT TOOL IN MANUFACTURING COMPANIES" researcher mentioned that the study offered a thorough evaluation and analysis of how ERP systems were implemented, especially as a tool for change management in micro and small-scale manufacturing businesses in the Ahmednagar area. The study's focus was limited to investigating and analysing various elements and components of ERP system deployment in manufacturing organisations. The study focused on a few small- and micro-scale manufacturing companies that were active in Maharashtra's Ahmednagar area.

Daniel E. O'Leary (2006) in the research paper, "Microsoft's Management Reporting: SAP, Data Warehousing, and Reporting Tools" researcher mention that the Finance Group sought to realise Bill Gates' goal of removing itself from the paper-handling industry and placing information at the fingertips of people. To do this, they implemented SAP, populated a data warehouse with financial data, created user-friendly reporting tools, and made the data, the reporting tools, and some preformatted financial reports accessible to authorised users via the company intranet. The month-end deadline was then shortened to four days thanks to these innovations, which has had a significant impact.

Renata Paksiova, Kornelia Lovciova (2017) in the research paper "Managerial reporting by food production companies in Slovakia in 2017" researcher observed that, The specifics of reporting by food businesses concern adherence to criteria for food quality assurance. Although food businesses place the highest importance on food quality and safety, the majority of businesses did not provide this information. Setting up a workable electronic form or a standard for simply implementable procedures needed to generate an annual report or a standalone sustainability report utilising the data from the managerial information system is significant and helpful in improving management reporting. This strategy would guarantee that consumers could readily access, compare, and comprehend information.

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Research Methodology

Objectives of the study

- To study the conceptual **awareness** of strategic and operational parameters of management reporting tools in manufacturing organizations.
- To study the **usage** of strategic and operational parameters of management reporting tools in manufacturing organizations.
- To study the **ease of implementation** of strategic and operational parameters of management reporting tools in manufacturing organizations.
- To study the **effectiveness** of strategic and operational parameters of management reporting tools in manufacturing organizations.

Scope of the study

- The study is conducted across OEMs and their Tier 1, Tier 2 vendors in Pune.
- This study is related to only select strategic and operational parameters of management reporting tools.
- This study is related to only manufacturing sector.

Reliability and Validity

The researcher has carried out reliability test using SPSS. The Cronbach's Alpha identified is 0.870, and it is more than 0.700, hence the research instruments is tested to be reliable. The researcher has used face validity and content validity and confirmed that this research tool is valid for the study.

Research design

Type of Research Design	Descriptive Research Design
Sampling Technique	Non-Probability Convenience Sampling
Sampling Area	Pune City
Sample Size	200
Primary Data	Well-structured questionnaire
Secondary Data	Research papers, Articles, Books, Journals etc.

Data Analysis tools	IBM SPSS-20 and Ms Excel-2010

Data Analysis

A)

Awareness about strategic parameters of Management reporting tools

	1	2	3	4	5
Parameter	Very low	Low	Moderate	High	Very high
Manufacturing location selection	0	0	20	144	36
Product Mix-SKU	0	8	22	98	72
Sales Mix (Domestic vs Export)	14	17	34	84	51
Sales Mix (OEM vs AM)	23	28	64	54	31
Profit margins	0	0	14	64	122

Usage of strategic parameters of Management reporting tools

	1	2	3	4	5
Parameter	Very low	Low	Moderate	High	Very high
Manufacturing location Selection	0	8	14	142	36
Product Mix-SKU	0	9	28	94	69
Sales Mix (Domestic vs Export)	9	30	42	85	34
Sales Mix (OEM vs AM)	20	28	67	46	39
Profit margins	0	0	22	74	104

Ease of Implementation of strategic parameters of Management reporting tools

	1	2	3	4	5
Parameter	Very low	Low	Moderate	High	Very high
Manufacturing location Selection	0	0	28	124	48
Product Mix-SKU	0	10	48	107	35
Sales Mix (Domestic vs Export)	10	32	32	86	40
Sales Mix (OEM vs AM)	16	32	63	65	24
Profit margins	0	0	18	56	126

Effectiveness of strategic parameters of Management reporting tools

	1	2	3	4	5
Parameter	Very low	Low	Moderate	High	Very high
Manufacturing location Selection	0	10	17	145	28
Product Mix-SKU	0	8	46	98	48
Sales Mix (Domestic vs Export)	10	28	38	90	34
Sales Mix (OEM vs AM)	18	38	64	43	37
Profit margins	0	0	14	64	122

B)

Awareness about Operational parameters of Management reporting tools

	1	2	3	4	5
Parameter	Very low	Low	Moderate	High	Very high
Inventory Management	0	0	6	144	50
Make v/s Buy	0	0	18	143	39
Labour force mix	0	0	0	157	43
No. of production shifts	0	0	46	78	76
Production capacity utilization	0	0	28	98	74

Usage of Operational parameters of Management reporting tools

	1	2	3	4	5
Parameter	Very low	Low	Moderate	High	Very high
Inventory Management	0	0	22	136	42
Make v/s Buy	0	0	21	138	41
Labour force mix	12	14	124	38	12
No. of production shifts	0	0	52	85	63
Production capacity utilization	0	0	28	114	58

Ease of Implementation of Operational parameters of Mgmt reporting tools

	1	2	3	4	5
Parameter	Very low	Low	Moderate	High	Very high
Inventory Management	8	9	16	137	30
Make v/s Buy	0	4	17	123	56
Labour force mix	46	52	62	23	17

No. of production shifts	37	38	63	33	29
Production capacity utilization	28	27	43	84	18

Effectiveness of Operational parameters of Management reporting tools

	1	**2**	**3**	**4**	**5**
Parameter	Very low	Low	Moderat e	High	Very high
Inventory Management	0	0	19	139	42
Make v/s Buy	0	6	30	144	20
Labour force mix	19	41	102	17	21
No. of production shifts	0	0	46	96	58
Production capacity utilization	0	0	28	104	68

Conclusion

The study reveals that almost all Strategic as well as Operational parameters have high to very high score on **Criteria User Awareness** whereas there is a mixed response for the **ease of their implementation**. Respondents have reported considerable numbers on Moderate and maximum numbers of high to very high for **Usage** and also **Effectiveness** of Strategic as well as Operational parameters.

Amongst the **Strategic parameters**, Manufacturing location selection, Product Mix (SKU) and Profit margins score towards high to very high on almost all 4 criteria, whereas Both Sales Mix Domestic v/s Export and OEM v/s AM has a mixed response on these criteria.

Amongst the **Operational parameters**, Inventory management, Make v/s Buy decision, number of production shifts, Capacity utilization score towards high to very high on almost all 4 criteria, whereas Labour Force mix has a mixed response on these criteria.

Overall, it shows the effectiveness of the chosen strategic and operational parameters of management reporting tools in manufacturing organizations.

There is also scope for further research in this study related to effectiveness of management reporting tools for manufacturing organizations in India.

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