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# Gavesana
# Journal of Management

## Editorial

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Gavesana

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Editor           :  Dr. Ch. S. Durga Prasad

Assistant Editor   :  Mr. Raghu Mantha

About the Journal

The Gavesana Journal of Management is a bi-annual refereed journal of the Vignana Jyothi Institute of Management. Its objective is to disseminate knowledge of contemporary issues related to management and development. The journal seeks to serve as a platform for intellectuals to share the rapid strides made in contemporary research. The Research Journal has been registered with the Registrar of Newspapers for India (RNI) vide No. 108534/2010 dated 1/3/2011.

Disclaimer

# EDITORIAL

Human Resource function (HR), in any organization, has to be that of a strategic or business partner, by developing the talent in the entity through job rotation, job enrichment etc., involving expert teams, business leaders and line management. Such a partnership is a long-term relationship to achieve objectives common to the partners, as also the organization's financial success. In the process, the HR employees, as partners, should perform their assigned roles, and also support the activities of those in other functional areas. This needs a strategic plan which dovetails the HR Vision and Mission into that of the organization.

HR, as a Strategic Partner - increases employee productivity and thus the organization's profitability; enhances competency and talent management; uses the technology and knowledge to formulate, implement and review strategies; copes with the changes in the business environment arising from unforeseen business situations, and globalization; and serves the internal and external customers well. This is done through efficient and effective delivery of human resource services. For this, the HR needs to spend more time in the organization's planning, design and development. It must become part of the business team, involved in planning at the highest level. HR Managers and HR professionals are strategically suited to provide the necessary leadership in change management, which is a challenging task.

The Human Resource Information System (HRIS) has to be effectively used to handle daily administrative HR tasks. Employees can make use of the self-service facility online, to support business strategy development and implementation, which saves time and costs. There should be an HR Head who understands well the strategic partnership/relationship between organizational strategy and human resources. He should be an expert in all HR functions. Someone from within the organization can be groomed for this role.

Research has shown that the HR function will be effective in achieving the business objectives when it assumes the role of a strategic business partner. The top management should ensure this. The administrative reactive approach in people management can no longer support the organization in a competitive business environment. If the HR function is decentralized fully, the line managers and supervisors will eventually put the blame on HR when problems arise. If this happens, it interferes with the effective use of line managers' and supervisors' time in the operations of the organization on daily basis. The line managers and supervisors need to be supported to make them more proficient in managing their subordinates in the performance of daily tasks. Complete participation of HR people in strategy development and implementation promotes HR as a strategic partner. The HR Manager and HR professionals should contribute to business decisions; develop business acumen to understand how a profitable business is run; be customer-centric; and learn how to link HR practices to the organizational business strategy.

The expectations from HR as Strategic Partner include: recruiting the right employees; align corporate values to the recruitment strategy; well-developed competencies of the workforce, and their relevance to organizational core business; participative culture where HR initiatives fully support the overall strategic plan; discard ineffective HR practices that do not contribute to the success of your organization. HR management requires continuous improvement i.e., Kaizen to ensure and retain its relevance as strategic partner. For this, capable and committed people are needed at every level, supported by senior management. Change has to be managed well to avoid or minimize disruption in the organization's activities, and for its success.

The effectiveness of the HR people as a strategic partner is also dependent upon the corporate policies and practices, structure, types of activities carried out, location, effective communication, leadership and motivating employees to keep moving in the right direction as per plan. Every aspect of HR has to be reviewed in the process of implementing the necessary changes and reorganization. Having the right is crucial to help them succeed and engage their full attention with the view to ensure HR truly becomes strategic partner. The HR Scorecard shows whether the organization is making good progress on making HR as strategic partner. The competitive advantage of the organization can be enhanced by aligning the HR strategies to the overall business plan. To ensure that HR truly becomes a strategic business partner, adequate financial backing is necessary. One needs to take measures to eliminate or minimize risks to HR, and it should be ensured that HR plays a meaningful role and not necessarily a major role, particularly during financial crises. It cannot also be a trial and error approach.

In fact, in a business landscape that is changing fast, there is an imminent need for HR to be an active strategic partner. By aligning itself with strategic plans of the business, it needs to foster a stronger relation between the executive team and the workforce. Externally, it can make valuable contribution to branding and the tone of communication. By leveraging customised, more personalised metrics and deep analytics, it can vastly improve organizational learning, training and improve decision-making. Consequently, the human capital program will lend more impact, thereby encouraging and enhancing collaboration between various functions across the organization. HR can no longer be just a functional arm, a distant participant, but will have to assume the role of strategic partner, integral to organizational well-being and growth.

**Dr. Ch. S. Durga Prasad**

# Reskillng Indian Workforce: The Need of the Hour

Lavanyanjali Mukkerla* Dr. Braou**

## Abstract

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## Introduction

The society is passing through the rapid changes in the era of globalization. As the people forms part of the society their aspirations and demands also changing in accordance with the changes that are taking place in society. In this context the institutions that are created to serve, both the individuals and society, need to be dynamic to cope up with the changes that are occurring around otherwise the purpose for which they have been created becomes absolute. Every institution is created with some purpose, and purpose drives the institutions to achieve the targets assigned to it. The performance of the institutions have to be measured based on its responsiveness to citizens' demands and expectations and be able to effectively design and implement policies reflecting these demands and expectations. Thus responsiveness, accountability and efficiency constitute the level of performance of the institutions. Of course institutions shall not be considered as just structures or buildings, but 'people' working for it constitute the institutions. People here need to be understood as 'employees' or 'workforce' consciously chosen to carry out the specific functions assigned to them. The performance of the institution to a large extent depends upon the quality of personnel available it or at its disposal. Hence the skills of the people working for the institutions required to be upgraded to make them competent in accordance with the changing times. For this it requires to undertake programmes for periodical training and skill upgradation of workforce.

Investing in people has not been considered adequately in the transformative phases of globalization. Now it is extensively recognized that valuing human capital serves to equip individuals with the adequate knowledge and skills to respond to systemic shifts. It also empowers people to take active part in creating a more equal, inclusive and sustainable world. Education serves as the basis for human capital and plays a fundamental role in the accumulation of foundational skills leading to pivotal role in promoting inclusive growth and provision of opportunities for all. But the present system of education is not sufficient to meet the pressures of the technological changes of the Fourth Industrial Revolution as it creates new pressures on labour markets. Hence, bringing educational reforms, focusing on lifelong learning and reskilling initiatives, to create necessary talents in people, are considered key to make them access to economic opportunities and competitive in their work and businesses in the new world of work and jobs of the future.

According to the "2018 Future of Jobs Report", it is opined that about 75 million jobs are expected to be displaced by 2022 in 20 major economies [1]. Whereas cKinsey Global Institute report, estimates this figure as more than 375 million workers who need to change their skill sets by the year 2030[2]. This would happen because of newer technologies such as digitization, AI (artificial intelligence) and automation disrupting the world of workFurther, the technological advances and new ways of working could also create 133 million roles, driven by large-scale growth in new products and services that would allow people to work with machines and algorithms to meet the demands of demographic shifts and economic changes. To proactively realize the benefits of these changes, at least 54 per cent of all employees will need re-skilling and up-skilling by 2022. India has world's largest youth population and more than half of its population is of working age. Hence, skill development and re-skilling its workforce is critical for India to sustain its inclusive growth and development. According to "Future of Jobs Report 2018"[3], more than one-half of India's work-force needs to be re-skilled by 2022 to meet the challenges of the fourth industrial revolution. However, creating a re-skilling revolution on which the country's future growth and productivity depends, it not only requires huge investment in people but also concerted effort on the part of both public as well as private players to close the skill gaps and preparing them for future jobs with required talent.

*Research Scholar, Dept of Public Administration,
** Dr. BRAOU, Hyderabad

In the present context of growing significance attached to re-skilling and skill updating, the study is undertaken to focus attention on the following objectives:

- To analyse the difference between skilling and re-skilling;

- To study the need for re-skilling of Indian work force;

- To understand the challenges of re-skilling in the context of globalised era and competitive world markets, and

- To analyse efforts of governments for inclusive growth strategy of re-skilling the work-force.

For presenting the ideas the scholar would depend upon the secondary source of information such as published works, including books, articles and government reports.

**'Skill' and 'Reskill': What Makes the Difference?**

Before discussing the importance of reskilling of work force in changing organizations it is pertinent to understand what constitutes skill and reskill. There is a problem in clearly defining what 'skill' is because it is very complex and there is every possibility of the influence of subjective elements in defining it. It is normally considered that skill means the ability of people to use their knowledge effectively and readily in execution or performance. Different people view the word 'skill' differently. Workers perceive it as the competence acquired through education, training and experience which may not have been put to use in the past (i.e effective skill), the employer considers only a portion of the effective skill suitable for impending task (nominal skill) and sociologist considers that skill is an evolving processes emerging from social interaction between workers and employer [4]. Generally skill is considered as "a set of knowledge, attributes and capacities that enable individual workers to successfully and consistently perform an activity or task and that skill can be built upon and extended through training, learning and experience" [5]. The usage of the word Reskill, is different from skill. Reskilling comes to light when the acquired knowledge or possessive skills are not sufficient to meet the requirements of new work culture to be exposed or performed. The experience reveals that the performance of persons considerably satisfactory at the time of their recruitment with the prescribed qualifications, knowledge and abilities may decreases to half the level of its original stage after completion of five years. Because what they had initially may not be sufficient to meet the newer challenges of institutional work if they do not attempt to update their skills according to the demands of changing times. This is particularly so in case of public organizations where the studies on employee performance reveal that the efficiency levels is not only falling down but the possessive skills are not sufficient to meet the changing needs and demands of public organizations. This is more so in the era of digital revolutions where the public offices are turning paperless and more and more automation is being worked out.

Let us now turn to understand what constitutes 'Reskilling'. According to Cambridge dictionary, "reskill", means "learning new skills to do a different job". In general, reskilling is undertaken by organizations in which long-term employees are either made redundant or laid off. Subsequently, the employee can be reskilled and utilized into a completely different career. To participate in a reskill program, the individual can opt to be sent to a college or trade school to earn a degree or certification in a different technology or field. After the completion of the program, the individual can become employable once again.

It is viewed that re-skilling means to "teach" (a person, especially an unemployed person) new skills in the context of fast changing technology where the present abilities and skills of employees may not be suitable to match the new jobs/assignments to be performed. This is because of fast changing technology involving block-chain, artificial intelligent and machine learning technology resulting in large scale workforce redundant. The only panacea to get rid of from such a situation is make the workforce "re-skill" to stay on pace with the processes of automation. Now-a-days,'re-skilling' and 'up-skilling' is being used interchangeably to mean one and the same. However, a slight variation is drawn between these two words to show how the first one is different from the other. It is opined that reskilling is a process of learning new skills or training people to do the new or different job. Reskilling focuses its attention more on creating new skills so that employee or individual can do a different job. It is also considered as a program that requires employees to be sent to a college or trade school to earn a degree or

certification in a different field. After the completion of the degree, this employee will once again become employable.

**Reasons to Focus on Reskilling**

There are many reasons to mention as to why we should focus on reskilling or skill updating. Of course again there is subtle difference in the usage of the terms reskilling and skill updating to address the same issue, but without peeping into the details it is worth focusing on the very contextual issue that is concern of many countries in the world, including India. It is well known that there is abundant availability of unemployed youth on the one side and on the other the projected fear of millions of employed work force to lose their jobs due to the lack of required skills to face newer challenges of digital world which is on its offing. The organizations with present set of workforce may find it very difficult to cope up with the new challenges and meet the targets effectively. To keep phase with the newer challenges the organizations/society need to devise appropriate strategies to whether to retrain, develop, deploy, redeploy and reskill its workforce. It is also viewed that workforce/employees are an asset to the organization/society provided they set to match their skills to the changing times reorient their intellectual capital for competitive advantage of the organization. To quote the words of Thomas A. Stewart, intellectual capital means "intellectual material-knowledge, information, intellectual property, experience-that can be put to use to create wealth". Further the author vociferously says that 'knowledge' not natural resources, machinery, or financial capital has become the most important factor in economic life[6].

Instead of going for acquisition of skilled manpower/workforce, reskilling the existing internal workforce/human resources continuously according to the changing needs of the organization is considered appropriate in terms of both maintaining productivity and developing talent. According to Julian and Boone (2001) reskilling existing workforce enhances job satisfaction, reduces employee turnover, and lessens the needs to outsource or hire contract labour [7]. Further, reskilling the existing workforce will have other advantageous also. They are (1) it provides an opportunity to the employees to proceed towards a new career path with the same employer; (2) it enables both the employees and employers to be in an advantageous position to have more trust and commitment; (3) it provides a chance to the personnel to make use of their already acquired skills in conjunction with the newer opportunities and challenges faced by the organization; (4) it also enables the organizations to retain the talent having been invested in and developed over the years without much further investment.

However in the in the context of rapid technological changes and consequent introduction of office automation in the workforce where machines work side-by-side with human workers, skills in demand will also change. An info-graphic study by Bongo [8] reveals that in 2018, the workplace consists of 71 percent human and 29 percent machine. In the next four years, however, it is predicted that robots will take over 42 percent tasks in the workplace, while human will fill 58 percent from overall tasks. This indicates the need for making the individuals engages themselves in lifelong learning for them to serve the changing needs of the organization and stay back in employable. Thus it reminds us that lifelong learning for skill upgradation maximizes the employment opportunities.

**Need for Reskilling in Indian Context**

Both skills and knowledge are considered as the driving forces of economic growth and social development of any country. They are the essential elements to make the country to capture the phase of globalization and technological changes and to face challenges of technological advancements taking place around the world. Countries with higher levels of skills and knowledge pave the way to adjust more effectively to the challenges and opportunities of globalization. India, by observing the developments taking around it started moving towards a 'Knowledge economy' with more focus on knowledge society and skill development. In tune with this the Eleventh Plan focused on advancement of skills. Measures were initiated to address the skill gap and reduce the complexities in the society by way of enhancing the horizons of higher educational opportunities. As a part of it the Eleventh Plan document has given a high priority to Higher Education and steps were initiated to establish 30 new Central universities, 5 new IISERs, 8 IITs, 7 IIMs, 20 IIITs, polytechnics, vocational schools etc. The National Skill Development Mission was also proposed to bring about a paradigm shift in handling of 'Skill Development'

programmes/initiatives. According to the 61st round of National sample Survey results among persons in the age group of 15–29 years, only 2% in formal vocational training and 8% per cent in non-formal vocational training respectively have received training. The figures projected in the report indicate that a very small percentage of youngsters enter the world of work with formal vocational training when compared with global scenario this is the lowest in the world. The corresponding figures in developed industrialized countries are much higher, varying between 60% and 96%.

## Reskilling Initiatives in India

Skill India program initiated by the Government of India on July 15, 2015 intended to equip and train the nation's massive, enviable workforce with employable skills and knowledge. It was expected help in contributing substantially to India's industrialization and economic boom. It was proposed to train about 400 million men and women in the country in various industrial and trade skills by the year 2022. It was also aimed at enabling Indian economy and industry to benefit from the country's young work force. Accordingly measures have been initiated to impart skill education and training. In India, skill acquisition takes place through two basic structural streams—a small formal one and a large informal one. With reference to the formal stream is concerned: (i) higher technical education imparted through professional colleges, (ii) vocational education in schools at the post-secondary stage, (iii) technical training in specialized institutions, and (iv) apprenticeship training. Further a number of agencies as mentioned below impart vocational education/training for skill development in India.

- National Skill Development Corporation by Government of India.

- Indian Institute of Skills" by Government of India.

- Kaushal Pradarshini" by Government of India.

- Pradhan Mantri Kaushal Vikas Yojana by Government of India.

- Pradhan Mantri Kaushal Vikas Kendras by Government of India.

- National Apprentice Promotion Scheme (N.A.P.S.) by Government of India.

- A Study on Impact of Skill Development at Entry Level Job Candidates in India.

- Skill India Programme by Government of India.

- Skill Knowledge Providers (S.K.P."S) by A.I.C.T.E.

- Community College Scheme" by A.I.C.T.E.

- Employability Enhancement Training Programme (E.E.T.P.) by A.I.C.T.E.

- Skills Training and Enhancement for Development of Youth (S.T.E.A.D.Y.) by Yes Bank.

## Initiatives to Invest in Tech Infrastructure

Behind the AI and data analytics boom, lays the story of a massive talent gap as workforce struggles to remain employable. The skills' shelf life has shortened, with technology changing exponentially over the last decade, skills that were relevant at the beginning of the career have become obsolete. In order to remain employable, the workforce needs to reskill to take advantage of new opportunities. The rise of edtech companies in India is not surprising, given the huge clamour for continuous learning that has taken root in the professional sphere. This is backed by the rise of emerging technologies i.e, artificial intelligence, its subset machine learning and data science which has spawned a booming job market revolving around new technologies that has substantially transformed India's IT labour market.

The changing job economy has resulted in new opportunities for the Indian workforce. As estimated by a consulting major, Artificial Intelligence (AI) has the potential to add US$957 billion, or 15 percent of India's current

gross value in 2035. The booming economy, fuelled by AI and advanced analytics requires more Indians to enter the workforce with a different skill-set. As per our estimate, close to 97,000 AI positions lie vacant in India. But, the challenges are also increasing multifold — on the one hand India Inc is struggling with disruptions like automation that are redefining jobs and secondly, it is grappling with finding the right talent with the right skill set for artificial intelligence and machine learning and data science teams. It is gathered that the educational institutions are not in a position to fully capture the opportunities by offering data and analytics programs and hence there is need to landscape the changing response to meet the demand in analytical skills and to fill the skill gap.

**Key Players in the Reskilling Market**

In order to capitalize on these opportunities, IT companies, educators and policymakers need to develop a deeper understanding of the existing workforce, the skill-set required in the future, and the gaps that will need to be addressed. This implies that these three key players need to align the broader economic developer agenda with the shifting job market and work towards building a strong talent that has the baseline and digital skills required for current landscape. At the Government level, policy makers will have to assess secondary and post secondary education and align it with the skills that are required for tomorrow. Many leading Indian IT majors have undertaken employer-training initiatives, pre-employment training and have also provided their own courseware. Collectively, the key stakeholders can foster a workforce development ecosystem and provide domain specific training with a job-first approach..

It is gathered that according to World Economic forum Report 2018, humans performed an average of 71% of total task hours across the 12 industries spanning manufacturing, services and high tech but by 2025, that will drop to just 48%, and machines will perform the remaining 52%. However, there are grounds for cautious optimism."One set of estimates indicates that 75 million jobs may be displaced by a shift in the division of labour between humans and machines, while 133 million new roles may emerge that are more adapted to the new division of labour between humans, machines and algorithms,"the authors of the report wrote, even while warning that if managed poorly, these transformations posed the risk of widening skill gaps, heightening inequality and raising polarisation. The WEF, therefore, identified the reskilling and upskilling of employees as an urgent imperative. "We hope this report is a call to action," Broadly, in line with global trends, 54% of Indian workers in these industries would need reskilling by 2022. Of this, while 35% would need at least six months worth of reskilling, 10% would need more than a year of training in order to meet the demands of the new economy, the WEF said in the report

The World Economic Forum feels the need for reskilling of more than 54% of India's employees/workforce in 12 sectors by 2022. It is also reported that by 2025, machines will overtake the humans in workplace in 12 key industry sectors. According to the World Economic Forums 'Future of Jobs'Report 2018 globally, almost half of all companies expect automation to cut their full-time workforce in the next four years. However, there may be new jobs if sufficient reskilling is done. It is estimated that in India, 54% of employees in these sectors will need reskilling by 2022. It also said that "workforce transformations are no longer an aspect of the distant future, instead, technological changes such as high-speed mobile Internet and cloud technology, artificial intelligence, robots and automation are expected to drive a "significant shift on the frontier between humans and machines when it comes to existing work tasks between 2018 and 2022." [9]

It is estimated that by 2022, over half of the workforce in India will require reskilling to meet the future skill demands. It is the fact that India has world's largest youth population and hence skills development is critical for India to sustain inclusive growth and development. In 2018 the World Economic Forum, in collaboration with Ministry of Skill Development and Entrepreneurship, and Petroleum and Natural Gas of India, and Infosys, launched the Task Force for Closing the Skills Gap in India. This brought together leaders from business, government, civil society, and the education and training sectors to accelerate the future-proofing of the country's education and training systems. As said earlier, more than one-half of India's workforce will need to be reskilled by 2022 to meet the demands of the Fourth Industrial Revolution.

According to our Future of Jobs 2018 report, more than one-half of India's workforce will need to be reskilled by 2022 to meet the demands of the Fourth Industrial Revolution.

Our report also found that talent availability is the single most important factor in determining job locations for international businesses with operations in India, and that 67% of businesses surveyed expected to outsource functions by 2022 in response to changing skill requirements.

These challenges in preparedness for the new world of work have the potential to hamper the country's future growth and productivity, and require concerted action by the public and private sectors to close skills gaps among the current workforce, preparing the next generation of talent for the future of jobs.

To address the skills gaps in the country the Government of India has constituted a Skill Gap Task Force in consultation with the World Economic Forum under the banner "Closing the Skills Gap Platform" on 18th October, 2018. It was decided to entrust the responsibility of bringing together the all the top leaders from business, Government, civil society, and the education and training sectors and workout the strategy to accelerate the future-proofing of education and training systems in the country. The goal of the Task Force is to develop an action plan by involving about 100 top companies and civil society representatives in the country to develop an action plan and priorities to address current and emerging skills gaps. Increase employability among the current workforce through the initiatives of reskilling, upskilling and enhancing the work-readiness and critical skills among the future workforce are the main mandates of the Task Force. Thus, the Indian Skill Gap Task Force has emerged as a part of growing global network initiative. Complementary efforts are being driven by the Forum's Closing the Skills Gap 2020 initiative, which seeks to gather commitments from global businesses to reskill and upskill eight million people by 2020. So far, companies in India have committed to reach more than one million workers.

## Conclusion

The emerging domain of data science is no longer a single free-standing field, it has evolved into an interdisciplinary effort that requires a broader understanding of the ecosystem. It requires a fundamental understanding of the core methods which include statistical, mathematical and computational understanding for working with data. In this space, training institutes that can address the profound breadth of data science and also provide a solid training in the emerging applications and business problems will come out as leaders in this field.

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# A study on Auditor's perception towards Goods and Services Tax in Madurai city

Dr. P.Maheswari[1]  NMS.S. Vellaichamy[2] R.Dinesh[3] J.R.Rajalakshmi[4]

## Abstract

GST is a new tax regime came into effect on July 1, 2017. It is a Major tax reform, imposed on all goods and services produced in India as well as those imported from other countries moreover GST enhance output and production efficiency of the Indian economy. Hence, GST is a hallmark to our nation when it is properly followed by all stakeholders in India with this background in the study this research paper seeks to find out the auditor's perceptions towards Goods and Service Tax based in the economic variables like compliance in different slab rate system filing procedures, E-Way bill mechanism and input credit system. A Quantitative analysis was carried out to indentify the key issues and level of satisfaction.

 **Keywords:** *Indirect tax, GST, Slab rate.*

## Introduction

GST (Goods and Services Tax) is a major taxation reform and an indirect tax that has replaced many Central and State taxes like excise duty, VAT and service tax etc., It is a single wide-ranging tax levied on all goods and services produced in India as well as those imported from other countries. The new tax regime came into effect on July 1, 2017, after years of deliberation – with the Atal Bihari Vajpayee Government first suggesting it in the year 2000. Tax is the intrinsic power of the state to impose and demand contributions among persons.

› CGST: where the revenue will be collected by the central government

› SGST: where the revenue will be collected by the state governments for intra-state sales

› IGST: where the revenue will be collected by the central government for inter-state sales

Various studies were carried out before the implementation of GST on how it will work and benefit the Indian economy. Dr. R. Vasanthagopal (2011) stated that GST will be a constructive step in booming the Indian economy. Ehtisham Ahmed and Satya Poddar (2009) also stated that GST will lead to enhance output and production efficiency of the Indian economy and the benefits depends upon the blueprint of the GST rates. With this background on the study of the GST in various phases, this research paper seeks to find out the Auditor's perceptions on people's disposable income and spending ability after goods and services tax implementation.

### Significance of the Study

› To analysis to Auditor's perception regarding goods and service tax.

› To know the key compliance areas in GST documentation procedures.

› To assess Auditor's view regarding important of GST and its filing procedure.

› To find out the perception and their views on GST slab rate.

› To assess Auditor's view point towards claiming procedure after billing the Goods and Services Tax.

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1. Dr.P.Maheswari, MBA. M.Phil., Ph.D., Assistant Professor, Department of Commerce CA,
2. NMS.S.Vellaichamy Nadar College, Madurai.
3.R.Dinesh, Department of Commerce CA, NMS.S.Vellaichamy Nadar College, Madurai.
4.J.R.Rajalakshmi B.E., Thiagarajar School of Management

**Scope of the Study**

This study covers with a detailed insight regarding implementation of GST among various sectors in India. GST will bring uniformity with tax rate and will also overcome lots of shortcoming in the Indian taxation system with regard to indirect taxation. GST is also covered by various challenges and issues that will be discussed in this study to get clarity about compliances in filing GSTR 1, GSTR 2, GSTR 3B, 9C and E-Way bill mechanism and claiming procedures.

**Journey of GST in India**

The GST journey started in the year 2000 when a committee was set up to draft law. It obtained 17 years of time for the amendment. In 2017 the GST Bill was approved in the Lok Sabha and Rajya Sabha. On 1st July 2017 the GST Law came into force.

**Indirect Tax Before GST**

In the earlier indirect tax regime, many indirect taxes were levied by both state and central Government. Rules and regulations of old tax regime were different from state to state. Value Added Tax (VAT) was mainly collected by State. CST (Central State Tax) was pertinent in case of interstate sale of goods. Other than that there were many indirect taxes like entertainment tax, octroi and local tax which was levied by state and centre. This overlapping of taxes was levied by both state and centre. This created cascading effect of taxes.

Indirect taxes in the pre-GST regime:

- Central Excise Duty
- Duties of Excise
- Additional Duties of Excise
- Additional Duties of Customs
- Special Additional Duty of Customs
- Cess
- State VAT

- Central Sales Tax
- Purchase Tax
- Luxury Tax
- Entertainment Tax
- Entry Tax
- Taxes on advertisements
- Taxes on lotteries, betting, and gambling

GST has replaced all these taxes. However, the chargeability of CST for Inter-state purchase at a concessional rate of 2%, by issue and utilisation of c-Form is still prevalent for certain Non-GST goods such as: (i) Petroleum crude; (ii) High-speed diesel; (iii) Motor spirit (commonly known as petrol); (iv) Natural gas; (v) Aviation turbine fuel; and (vi) Alcoholic liquor for human consumption in respect of resale, manufacturing or processing or distribution.

**Old Regime Vs New Regime**

| Transaction | Indirect Tax before GST | Indirect Tax after GST |
|---|---|---|
| Supply within the state (Intra-state Supply) | VAT + Central Excise/Service tax | CGST + SGST (Revenue will be shared equally between the Centre and the State) |
| Supply to another state (Inter-state Supply) | Central Sales Tax + Excise/Service Tax | IGST (Revenue will be collected by Centre) |

**GST Council**

The GST council is the key decision-making body that will take all important decisions regarding the GST. The GST Council dictates tax rate, tax exemption, the due date of forms, tax laws, and tax deadlines, keeping in mind special rates and provisions for some states. The predominant responsibility of the GST Council is to ensure to have one uniform tax rate for goods and services across the nation

**GST Council structured**

The Goods and Services Tax (GST) is governed by the GST Council. Article 279 (1) of the amended Indian Constitution states that the GST Council has to be constituted by the President within 60 days of the commencement of the Article 279A

**GST Registration Procedure**

GST registration is obligatory for most persons and entities supplying goods or services in India. GST registration turns into compulsory when the aggregate value of supply is more than Rs.20 lakhs. In case the entity is working in a special category state, GST registration becomes compulsory when the aggregate value of supply is more than Rs.10 lakhs per annum.

Slab Rate

GST rates in India at a glance:

Exempted categories: 0

Commonly used Goods and Services: 5%

Standard Goods and Services fall under 1st slab: 12%

Standard Goods and Services fall under 2st slab: 18%

Special category of Goods and Services including Luxury Goods: 28%

The following are the rate cuts announced at the 37th GST Council meeting:

**GST Rate Revision effective from 1 October 2019**

| 0% | 5% | 12% | 18% | 28% |
|---|---|---|---|---|
| Deities made of stones<br><br>Raw material used in brooms | Plates and cups made of flowers, leaves and bark | Wet grinders (consisting of stone as a grinder) | Hotels (Room Tariff from Rs 1,001 to Rs 7,500) | Hotels (Room Tariff of Rs.7501 or above) |
| Fruits<br><br>Curd | Supplies of Railways wagons & coaches (without refund of accumulated ITC) | | Outdoor Catering (without ITC) | |
| Vegetables | Diamond Job work | | Woven/ Non-woven Polyethylene Packaging bags | |
| All hotels and lodges who carry a tariff below ? 1000 are exempted | Dried Tamarind | | Caffeinated Beverages | |
| Jan Dhan Yojana | Electric chargers | | Marine fuel | |
| Bank charges on saving account | Electric vehicles | | Almond Milk | |
| Judicial papers | | | Slide fasteners | |

**Source: cleartax.in**

**Research Design**

Several research studies focused on the impact of goods and services tax to the Indian economy. Similarly, there are also many research studies which focused on how goods and services tax will benefit and cost different sectors of the economy. Few research studies studied the customer perception towards goods and services tax but do not take an economic approach in studying the auditor perceptions. This study is unique because it seeks to study the auditor perception towards goods and services tax based on the economic variables like compliances in different slab rate systems, filing procedures, E-way bill mechanism and input credit system.

This research study is a quantitative research study. A quantitative research study is a study where a problem which is being studied by the researcher is supported by generating data which can be later converted into usable statistics giving meaningful conclusion.

**Sources of Data**

The data required for this study is collected from both primary and secondary sources. The primary data will be collected from the Auditors in Madurai through structured questionnaire. The primary data will be collected from the Auditors in Madurai through structured questionnaire.

**Sampling Design**

**Sample Size**

The sample size for the study is 40 respondents from Madurai city. The sample size for the study is arrived through G-power statistics 3.1 software which helps in determining the sample size based on the analytical tool used for the study.

## Sampling Technique

This research study is based on purposive convenience sampling method. This non probability sampling technique is used to predetermined the samples and convenient to collect the data from the respondent when randomization is impossible.

## Sampling Unit

The sampling unit for the study is the Auditors in Madurai city. Industrial consumers do not represent the sampling unit for the study.

## Statistical Design

The analysis for this study has been carried out through Microsoft Excel sheet. The analytical tool used for the study is descriptive Statistics. The Study uses simple descriptive statistics to present the auditors' perception towards goods and services tax implementation. Percentage, Ranking and correlation are used to present the results as the questions are structured based on ordinal scale rather than nominal scale.

## Cross Tabulation – Slab Rate vs Need Clarity

| Count of Res | Need more clarity | | |
|---|---|---|---|
| slab rate | No | yes | Grand Total |
| Dis satisfied | - | 13 | 13 |
| Highly Dis satisfied | 2 | 16 | 18 |
| Moderate | - | 6 | 6 |
| Satisfied | - | 3 | 3 |
| Grand Total | 2 | 38 | 40 |

**Source: Primary Data**

**Interpretation**

The above table could be inferred that the majority of the respondents are highly dissatisfied with the slab rate and also they expected more clarity in slab rate. The Government has to concentrate on slab rate mechanism to give feasible tax structure to the stakeholders.

**Key GST Compliances**

| Particulars | 1 | 2 | 3 | 4 | Total |
|---|---|---|---|---|---|
| Cost of compliance | 24 | 36 | 32 | 6 | 98 |
| Issues with goods and services tax network portal | 64 | 36 | 16 | 4 | 120 |
| Cumbersome procedure and documentation | 72 | 42 | 12 | 2 | **128** |
| Lack of income tax infrastructure | 0 | 6 | 20 | 28 | 54 |

**Source : Primary Data**

The above table indicates that, cumbersome procedure and documentation of GST is the key ingredient which gets the first rank. The second rank goes to GST Network portal, third rank goes to cost of compliances and the fourth rank goes to GST infrastructure.

**Issues in E-way Bill Mechanism**

| S. No | Particular | Problem |
|---|---|---|
| 1 | Technical system | 14 |
| 2 | Non-availability of refund | 10 |
| 3 | Mis-match of data | 14 |
| 4 | Bank account detail not update | 8 |
| 5 | Lack of seamless linkage | 5 |
| 6 | Significant effort in follow up for processing of claim | 8 |
| 7 | Lack of clarity on computation of eligible refund | 10 |

**Source: Primary Data**

The above table could be inferred that Technical system issues of GSTN portal and Mis-match of data between GSTR-1/GSTR-3B and shipping bill are the key compliances which are faced by the Auditors. Hence the Government should take remedy for that E- Way bill mechanism for easiest registration, payments and claiming.

**Correlation**

| Particulars | Values |
|---|---|
| The correlation between Nature of servicers and Deadline given foe GST compliance | 0.727607 |
| [The correlation between Nature of servicers and Bringing more transparency | 0.927173 |
| The correlation between Nature of servicers and Transition to GST regime | 0.733604 |
| The correlation between Nature of servicers and one return for state or central | 0.881917 |
| The correlation between Nature of servicers and slab rate | 0.852013 |
| The correlation between Nature of servicers and legislation in relation proposed GST | 0.826568 |
| The correlation between Nature of servicers and GST removes black money in market | 0.857537 |

**Interpretation**

The above table could be inferred that there is a very strong relationship between the nature of service and transparency. Hence it is strongly indicated that the auditor felt GST has given transparency, similarly, the nature of service provided by the auditors and GST compliances. It indicated that most of the auditors provided compliance services to their clients. Further the nature of service has strong relationship with GST regime, one return for state or central, slab rate, removes black money and legislation in proposed GST.

**Impact of GST in India**

1. Under GST, uniform tax would be collected by Centre and State under CGST and SGST respectively. This uniform taxation system will help to pool the resources and also boost the industrial development.

2. GST makes a provision for claiming input tax credit, this would make a effective billing system.

3. Dual monitoring of tax by state and center will ease the governance and also increase revenue. In long term it will also reduce black money.

4. Simple and well-structured taxation is likely to improve market segment. It will encourage trade and reduce logistic costs. It sends global goodwill for Indian economic climate.

**Findings from GST Regime in India**

» The respondents are highly dissatisfied with the slab rate and also they expected more clarity in slab rate.

» Cumbersome procedure and documentation of GST is the key issues, which is not feasible for filing procedures and registration procedures.

» The auditor felt GST has given transparency, similarly, the nature of service provided by the auditors and GST compliances. It indicated that most of the auditors provided compliance services to their clients.

» Technical system issues of GSTN portal and Mis-match of data between GSTR-1/GSTR-3B and shipping bill are the key compliances which are faced by the Auditors.

**Suggestion**

» The Government must provide proper guidance to the stakeholder of this GST Regime and also create awareness about registration process, cancellation process, E-way Bill mechanism and Composition scheme.

» They should concentrate on the compliances in GST system and also prepare perfect GST framework for billing procedures.

» The stakeholders should take initiative and cooperate with the GST Regime in India, which will rectify the complex situations.

» The taxable person should afford necessary facility / information / assistance / documents for smooth conduct of audit and its timely completion.

The above concerns need to concentrate on a vital basis and to convey in more clarity in the implementation of this biggest tax reform. Reducing GST rates, eliminating excess processes, generating efficiencies, avoiding debatable aspects, are in the midst of the urgent requirements for improvements in GST in the interest of the nation as a whole. Our rates should be viable with global rates so that India becomes a number one competitive destination which will give a boost to 'Make in India' proposal.

**Conclusion**

The proposed GST regime is an indifferent challenge to rationalize indirect tax structure. Before implementing the GST the Government of India must know that regime of other countries and their issues. Similarly, the government should put more attempt to improve the poor people in India. There is no doubt, GST is a updated version which will simplify existing indirect tax system and will help to eradicate inefficiencies created by the existing current heterogeneous taxation system in India.

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# Future of work: Leveraging the power of technologies to create a near-human like digital worker

## Sushant Gaonkar[*]

## Abstract

Among the new age digital technologies there are three of them namely Robotic Process Automation (RPA), Conversational AI and Machine Learning that will shape how administrative and professional work is delivered by a human, in the near and foreseeable future. These technologies have begun to relieve the human worker from mundane, routine and repetitive tasks so he or she is able to focus on more value added work. Enterprises across the world have embraced the three technologies in silos and are able to achieve varying degree of success from it. They are also constantly striving to leverage each of these technologies and derive maximum benefit. In this paper it is argued that in order to derive maximum benefit from these technologies, we have to first find the sweet spot or intersection of the three technologies and then operate around that. Using the example of a customer support centre for a bank it is demonstrated how the three technologies can assume different roles of a human worker and execute tasks. The Chatbot (i.e., Conversational AI) plays the role of a customer support agent and is responsible for reading, understanding and responding to a customer query. The RPA bot plays the role of a back office administrative staff and is responsible for processing information related to the customer's query and providing it to the Chatbot. The Machine Learning platform plays the role of a back off customer advisory staff and is responsible for forecasting future financial outcomes/transactions, generating insights and sharing it with the customer through the Chatbot. It is concluded that when all the three technologies are in play and work in tandem, we can create a near-human like digital worker that will not only understand the nature of customer request and respond to it but will also be able to provide insights and recommend future course of actions.

***Keywords:*** *Robotic Process Automation, Intelligent Automation, Cognitive Automation, Conversational AI, Chatbot, Machine Learning, Digital Worker*

## Introduction

### A brief history of evolution of human work over the past three centuries

Since the first industrial revolution it has been an on-going human endeavour to delegate work to machines and relieve them from physically intensive and repetitive work. The first industrial revolution around the 1780s utilized power generated from water and steam to run machines and produce goods faster. The second industrial revolution around the 1870s utilized power generated from electricity to mass produce goods. The third industrial revolution, also called the digital or information revolution, started in the 1960s and it utilized the power of computing and internet to disseminate and aggregate information and make it accessible to people at every nook and corner of the world. The fourth industrial revolution, also called the automation revolution, started in early 2000 and it is utilizing the power of digital and cognitive technologies like Robotic Process Automation (RPA), Artificial Intelligence (AI) and Machine Learning (ML) to automate administrative and professional work in the services industry. These technologies are not only relieving the human worker from mundane, routine and repetitive tasks but are also capable of taking well informed decisions based on the situation.

### A brief history of work automation in the services industry

The first known effort to automate professional work in the services industry started in the 1990s when a computer program called a "screen scraper" was written to scrape or capture data from a legacy application like a mainframe and use it in new applications like a Windows application or a web browser (4). Screen scraper had its limitation in that the program would fail even if there was a slight change in the mainframe application. Nevertheless it gave rise to End User Computing (EUC) technology where end users could create their own program to automate tasks

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*Practice Head for Robotic Process Automation & Digital Transformation Athena Global Technologies Ltd.

without relying on developers. Spreadsheet applications and macros were a product of EUC, using which mundane and repetitive tasks like reformatting data could be automated (4). EUC would work only with few applications and hence was limited in its ability to scale across multiple applications. Advancement in EUC technologies eventually made way for Robotic Process Automation (RPA) technology which seamlessly interacted with multiple applications, just like a human worker would do. RPA is very efficient in executing repetitive tasks at scale but is limited in its ability to communicate with users, comprehend information and make decisions on its own. This gap was filled by Conversational AI and Machine Learning (ML). Conversational AI systems, also called Virtual Assistants, automated the communication with users, understood their queries and provided an appropriate response. Machine Learning techniques built models from historical data in order to predict future outcomes that can be used in decision making. RPA, Conversational AI and Machine Learning technologies are part of the Intelligent or Cognitive Automation wave and they will largely define the future of human work in the services industry. In this paper we examine how an organization benefits from each of these technologies when they are used separately. We also look at the synergistic effect of using the technologies together and how the benefits can scale up manifold.

## About Robotic Process Automation (RPA)

RPA refers to a software program, known as a bot, which can automate a business process and execute it from start to finish without any manual intervention. The bot can replace a human worker either partially or entirely depending on the nature and extent to which a process can be automated. The key business benefits of RPA include faster turnaround time, increase in data accuracy and cost savings resulting from employing fewer human workers. It was observed that when RPA is implemented at scale, it can deliver a return on investment in approximately three to six months (9). RPA works best when a process is rule based and the data is available in a structured format.

A RPA bot is different from the earlier software programs used for automation like screen scraper, macros etc. in many ways:

- it can be configured without any programming knowledge

- it interacts with the presentation layer of any application

- it is highly scalable in terms of its ability to work with multiple applications and processes across the organization

- it can scan a document (word, excel, pdf etc.) and read data from it using OCR (optical character recognition) and other image processing techniques.

- It can execute the process without anyone attending to it

RPA adoption has significantly grown over the last five years across several industries in the services sector. In 2016 the RPA market was sized at $250 million and is expected to grow to $2.9 Billion by 2021 (8).

## Use case: KYC process automation in a bank

### Problem:

One of the critical customer on-boarding processes in a bank it to validate KYC (Know Your Customer) data. The purpose of the KYC process is to verify identity of its customers by using independent source documents or data. By verifying the customer's identity fairly conclusively, the bank is able to prevent illegal activities like theft, financial fraud, money laundering and terrorist financing. Banks are also expected to strictly comply with KYC policies and guidelines set forth by the government.

### Challenges:

- Customer resentment: From a customer's perspective, the KYC process can be quite frustrating especially if the customer is asked to provide the same information repeatedly. It was observed, in a study, that the same customer was contacted four times by different departments of the bank (5). Such an

exercise leads to KYC duplication and create more headache for the bank. It will also create a trust deficit among customers who are more likely to abandon the bank.

- An expensive, manually intensive process: The average financial firm spends US $60 million per year on KYC, customer due diligence and US $58 million per year on client on-boarding (5). KYC is an expensive process and it requires more human hands when demand peaks in order to ensure that customer information is processed in an accurate and timely manner. However more humans leads to more manual errors which can lead to delay in processing and customer frustration. Data entry inaccuracies will also increase risk of non-compliance and result in incurring heavy fines.

Solution:
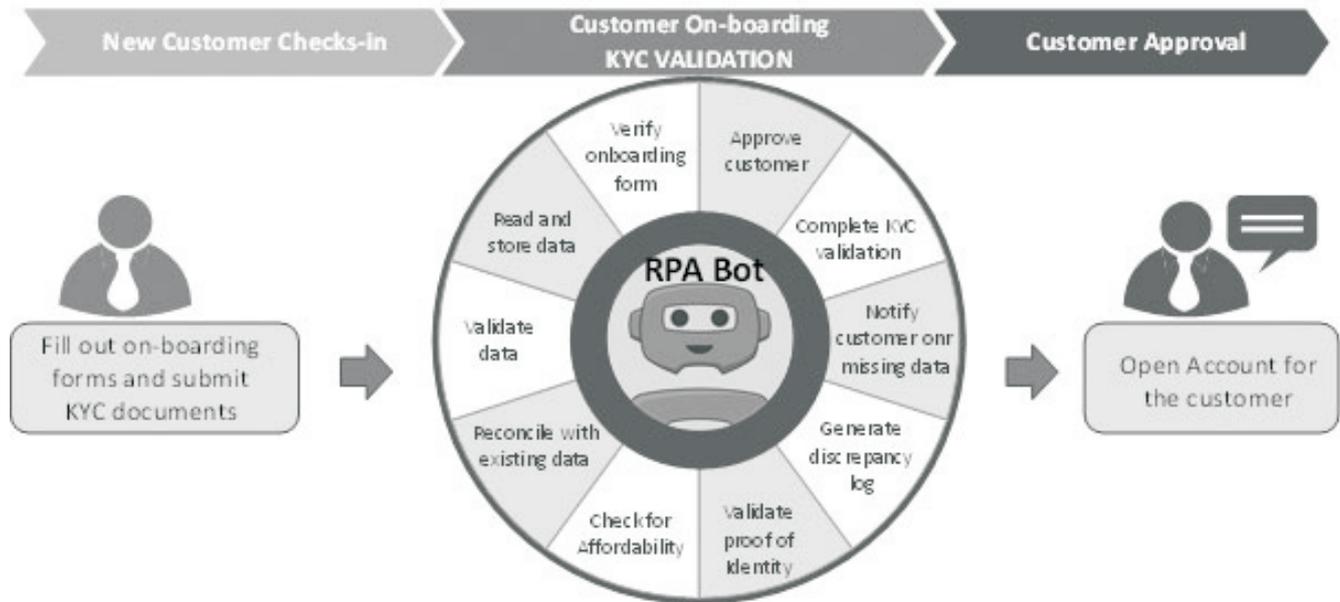


The entire KYC process from start to finish can be automated using RPA technology which is easy to use and flexible enough to cater to fluctuating demands. RPA bots are created and deployed to replicate all human actions involved in the KYC process. The bots can easily interface with disparate software systems, applications, websites or databases and process required information to verify a person's identity. The bot can also validate the data with external data sources for regulatory purposes. The bot can be run in an attended manner, where its work is trigged by a human or in an unattended manner where it's work in pre-scheduled.

**Benefits:**

- **Turnaround time:** RPA bots can process hundreds of KYC documents in a matter of few minutes thus significantly increasing the speed of operations. Secondly, the bots can work 24/7/365 and do not require a break unlike a human worker. If you consider a 40 hour work week for a regular human worker, the bot can work up to 168 hours in the same work week which is up to 320% increase in productivity.

- **Data accuracy:** RPA bots have the capability to achieve 100% data accuracy and eliminate manual data processing errors.

- **Costs:** It has been observed that RPA can reduce costs for financial services firms by up to 75 percent. Secondly, an RPA bot can cost around one-tenth of a full-time worker in the US, UK or Australia (6).

- **Improved customer experience:** Customers are more satisfied as a result of shorter processing time during on-boarding and reduced errors.

- **Audit trail and compliance:** Each task executed by a RPA bot is maintained in the log thus making it easy for auditing and adhering to compliance best practices.

**Limitation of RPA as a standalone solution**

- RPA is unsuitable for processing unstructured data from sources like scans, images, emails etc.

- RPA is unsuitable for non-standardized processes e.g., reading data from invoices where the format differs from one invoice to the other.

- RPA does not have cognitive abilities where it can learn from past experience and apply the knowledge for present or future situations e.g., scanning through various past invoices, understanding the content and then reading future invoices accurately.

- RPA cannot have a real-time to-and-fro communication with a user. It can only act based on an instruction.

**About Conversational AI**

Conversational AI refers to chat and voice based virtual assistants that automate the communication with users and create a personalized experience at scale. The chat based virtual assistants are called Chatbots and voice based virtual assistants are called Voicebots. Chatbots and Voicebots are powered by Natural Language Understanding (NLU), Natural Language Processing (NLP), Machine Learning (ML) and Deep Learning (DL) algorithms that can understand text or speech from a user, generate an appropriate response and then share it with the user in the form of text or speech. The business benefit of a Conversational AI based virtual assistant is that it can handle 1000s of queries at the same time, be available 24/7 and reduce the need for live customer support thus creating a direct cost savings on employee salary, overhead, training etc. It also enhances the customer service experience resulting in a happy and satisfied customer.

It is estimated that the global Conversational AI market size will grow from USD 4.2 billion in 2019 to USD 15.7 billion by 2024, at a CAGR of 30.2% during 2019–2024 (10).

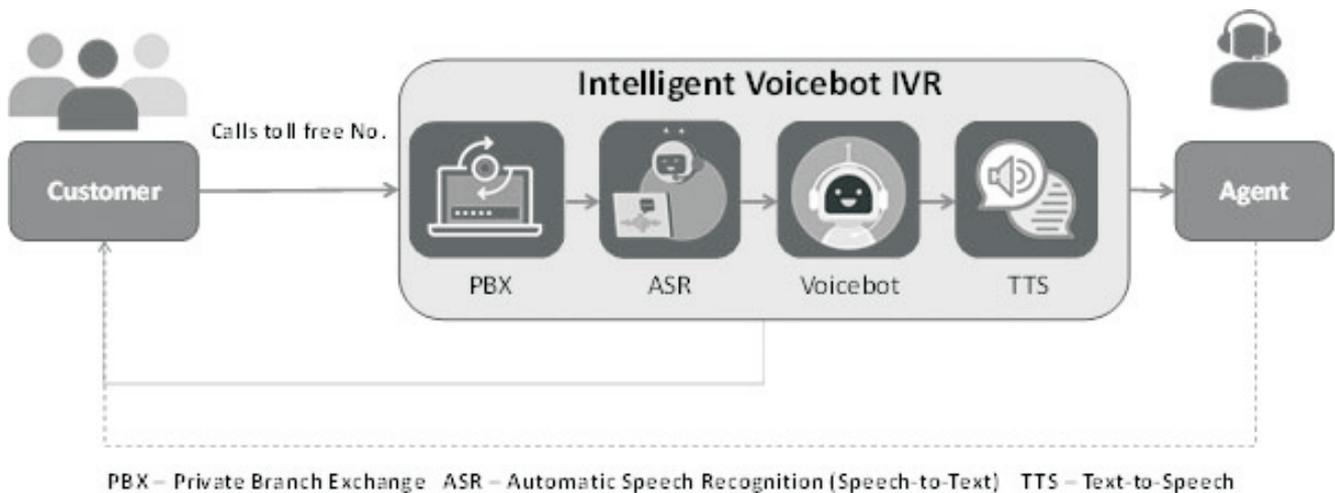**Use case: Intelligent Voicebot replaces traditional IVR in a bank**

**Problem:**

Most banks use the phone based IVR (Interactive Voice Response) technology to interact with customers calling for assistance. When a customer calls the bank's toll free number the IVR system gets activated. It starts by giving the caller a series of options to choose from based on the purpose of the call. The caller also gets the option to speak to a customer support agent.

**Challenges:**

- Customers often get confused and lost while choosing from a long list of options and eventually end up aborting the call. Instead of addressing the customers' problem the poor experience with IVR adds further to their grievance.

- More often customers are not able to find a resolution to their problem unless they speak to a customer support agent, which increases their wait time and the duration of the call.

Solution



PBX – Private Branch Exchange  ASR – Automatic Speech Recognition (Speech-to-Text)  TTS – Text-to-Speech

The Conversational AI powered "Intelligent Voicebot IVR" enables the customer to speak to a human like bot in natural language without having to choose options. The Voicebot uses ASR (Automation Speech Recognition), NLP (Natural Language Processing) and Text-to-Speech technologies to understand customer's query and then provide an appropriate response in a flash. The Voicebot is trained to handle different types of queries and over time it gets better and smarter in generating the correct response. This helps the customer to navigate smoothly and get his problem resolved quickly.

**Benefits**

- Voicebot enables to customer to cut the chase and discover the bank's services faster. The call accuracy is also higher which reduces the overall call duration.

- The Voicebot can handle majority of queries on its own which results in better utilization of the agent's time.

- The Voicebot brings intelligent conversations to life and makes it easier for the customer to self-service his needs, thereby enhancing the overall customer experience.

**Limitations of Conversational AI as a stand-alone solution**

- Chatbots or Voicebot based virtual assistants provide an effective communication medium when the response to customer queries exists within their domain. However there are many situations where they have to interact with other internal applications in order to provide the answer to a customer. Integration with these applications is not always easy especially if they are legacy applications which do not provide a proper Application Programming Interface (API) framework for integration. In such cases the virtual assistant would not be effective in providing the required response to the customer.

**About Machine Learning**

Machine Learning (ML) refers to a methodology of analysing data by learning from the patterns and inter-linkages that exist in historical data. ML is a branch of AI where the underlying concept is that it is self learning and has the ability to draw inferences and predict outcomes on its own without any human intervention. ML relies on training a pre-selected model with historical data and then using the model to generate the outcome for a new set of data. The benefit of ML over classic statistics based model building is that it does not make any assumptions on the data and lends the data dictate the entire analysis.

Machine Learning is pervasive across data intensive industries. In 2017 the global machine learning market was around USD 1.58 billion and is expected to reach approximately USD 20.83 billion in 2024, growing at a CAGR of 44.06% between 2017 and 2024 (11).

**Use case: Credit Risk Scoring Model for a bank**

**Problem:**

When a new customer applies for a loan, the bank finds it difficult to evaluate the credit worthiness of the customer if there is limited data available on customer's payment history, especially for a customer who does not have a prior credit worthiness score. In such instances the customer's loan application is more likely to be rejected by the bank even though he may be financially capable of paying the loan. As a result there is a lost opportunity for the bank as well as the customer.

**Challenges:**

New customers, who does not have a credit worthiness score, can only provide limited personal data like their address, monthly income, number of children in household etc. It is challenging for a bank to use this information to evaluate the customer's credit worthiness. As a result many such customers lose out the opportunity to avail loan from the bank.

Solution:
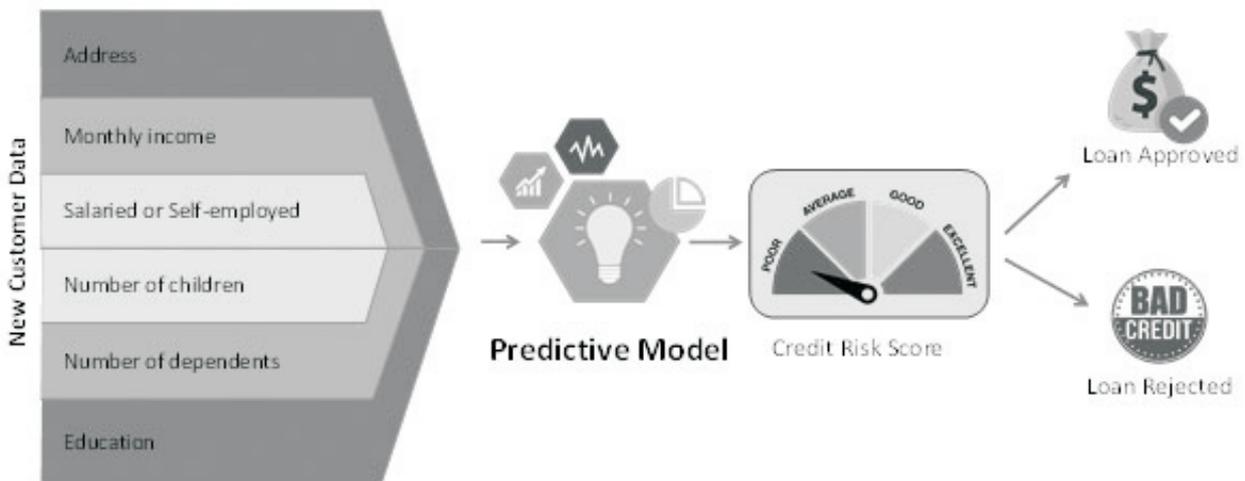


Using logistic regression, a supervised Machine Learning method, a predictive model can be built to derive a credit worthiness score based on the probability of default. Probability of default can be derived with limited data like address, income, status, number of children etc. as it relies on association with similar customers (7). The score can be fairly accurate even with limited data from the customer and banks can use this score to decide whether to approve or reject the loan application. The credit scoring model can be extended to existing customers of the bank as well, in which case the customers with good past payment history will be scored to assess their probability of default. Note that customers with a bad payment history track record will be rejected by the systems automatically and will not be considering for any scoring.

Benefits:

Using the credit scoring model banks are able to identify the credit risk of customers in a more accurate manner and thus reduce the risk of default. Banks are also able to approve loans for customers who are financially capable of paying the loan even if there is limited data available on them. The credit scoring model has a positive impact on both the top line (sales) and bottom line (profits) performance.

**Limitations of Machine Learning as a stand-alone solution**

·        A ML model requires large amounts of data in order to give meaningful results. It also requires high quality or good data. If data is entered and processed by humans, it could affect not only the ability to generate more data but also more accurate data.

Cognitive Automation (RPA + Conversational AI + ML) – New age digital worker, almost human like

Automation of work is evolving rapidly and technologies that once worked in silos can now be clubbed together to create a new age digital worker (i.e., a bot) that cannot only replicate human actions but also make decisions like a human. RPA, Conversational AI and Machine Learning can come together to provide a comprehensive, no-touch, cognitive automation solution that will overcome their individual limitations (described earlier) and enable the business to derive maximum benefits from them. Conversational AI will automate all interactions between the customer and business, RPA will automate all back-office processes and Machine Learning will add cognitive capabilities to facilitate automated decision making without any human intervention.

It has been observed that when AI technologies are combined with RPA, the market size of the opportunity is almost 13 times bigger when compared to that of a stand-alone RPA solution (4).

Use case: End to end automation of loan application processing for a new customer in a bank

**Problem:**

A new customer wants to apply for loan with a bank. He calls the bank's toll free number and selections the appropriate option for loan in the IVR. As it is a new customer, his call is directed to a customer support agent in the new loan division. The agent coordinates with the customer via email and the process of KYC document submission, document verification, credit worthiness review and loan approval or rejection is executed. The entire process is manually intensive and takes anywhere from 5-7 business days for completion if all data and supporting documents are available.

**Challenges:**

- The entire process from start to finish is manually intensive. As a result it is prone to errors which can cause further delay in processing.

- Following up with customers over phone for submitting missing information or document is very cumbersome and expensive.

Solution:
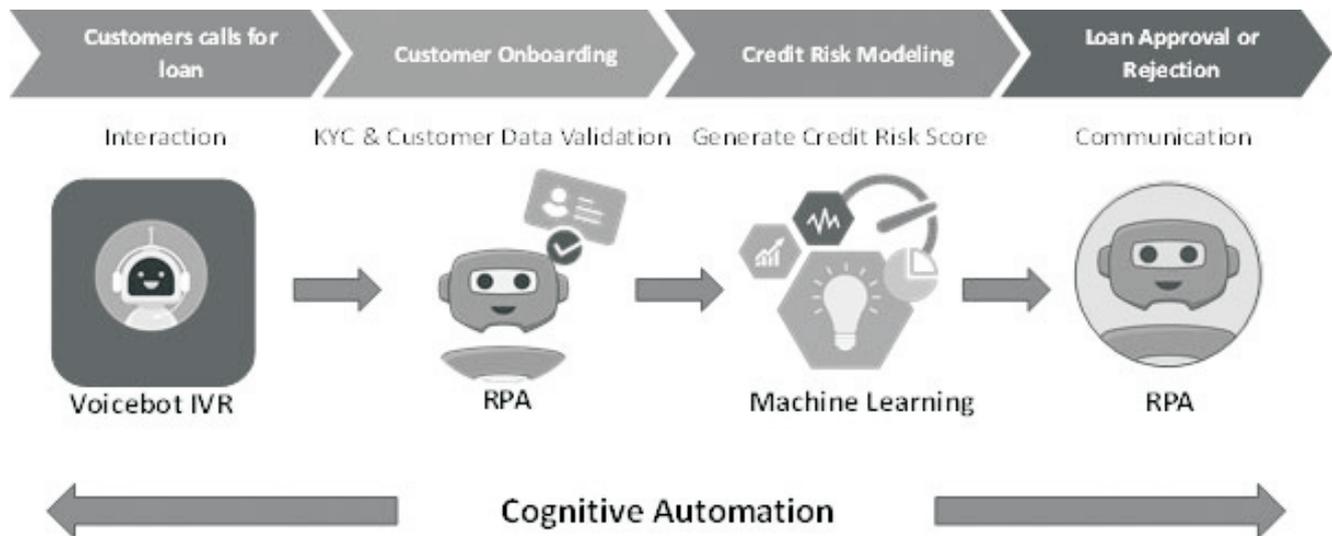


The entire process can be automated using end-to-end Cognitive Automation i.e., Voicebot, RPA and Machine Learning technologies put together. Customer calls a toll free number, which actives the Intelligent Voicebot IVR, and requests for a loan. The Voicebot collects basic personal information of the customer like name, email, contact no, address, monthly income, no of children etc. and asks the customer to upload related KYC documents by clicking on the link sent via email. Voicebot triggers an RPA bot which creates the customer account and checks if all KYC documents are received. If any information or document is missing, the RPA bot sends an email to the

customer asking for the information. Upon submission of all information, the RPA bot reads data from the KYC documents and feeds it into the system. It also runs a credit risk scoring predictive model to derive and assign a credit score to the customer. If the credit score is above the acceptance threshold the loan is approved, otherwise it is rejected. The RPA bot sends an email to the customer on whether the loan has been approved or rejected. The automated process can be completed in 3-4 hrs if all data and documents are available.

**Benefits:**

- Using end-to-end cognitive automation banks are able to automate the execution of business processes from start to finish without any manual intervention, resulting in significant costs savings for the business.

- 100% data accuracy can be achieved

- Customer satisfaction improves as the wait time is drastically reduced and their queries are address promptly and satisfactorily.

  Cognitive Automation overcomes the limitations of stand-alone automation technologies:

- RPA enables a Chatbot or Voicebot to fetch data or reports from internal applications and share it with the customer, without any API integrations with the applications.

- RPA supports ML model building and training by extracting large volumes of relevant data from various sources in an accurate manner.

- ML enables the RPA bot to read and process unstructured data, execute non-standardized processes and read data from different formats or templates of documents like invoices, purchase orders etc.

- ML enables the RPA bot to learn how to read data from documents more accurately over a period of time

**Cognitive Automation is a work-in-progress**

The ultimate objective of cognitive automation is to create a digital worker that becomes a reliable virtual assistant and a trusted partner for a human worker. Future of human work will involve active collaboration with a digital worker (4). Advancement in Conversational AI and other AI, ML technologies, coupled with RPA has created a digital worker with strong cognitive capabilities that can read from unstructured documents and respond to non-standard business situations. However adoption of Cognitive Automation by the industry in still in its infancy and it is expected to become more prevalent in the coming years. We believe that the technologies will continue to evolve as adoption increases and it will get closer to achieving its desired objective within the next two years.

**Conclusion**

It is evident that automation is going to take over majority of data intensive tasks that are considered to be routine, repetitive and mundane. It has also been observed that increasingly cognitive tasks, involving decision making, can also be automated. The new age technologies like RPA, Conversational AI and Machine Learning are playing a major role in work automation. However when these technologies are employed individually they have certain limitations which restrict their ability to automate various aspects of the process. We also observed that when these technologies are used together they complement each other and amplify the business benefits. Hence we conclude that the success of work automation lies in the ability of the business to harness RPA, Conversational and Machine learning technologies together and create a comprehensive cognitive automation solution. As the technologies evolve a near-human digital worker with superior cognitive faculties is likely to arise in the foreseeable future and it will act as a trusted virtual assistant and partner for the human worker.

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C/o Vignana Jyothi Institute of Management,
Veljan Centre, Vignana Jyothi Nagar, Bahcupally, via Kukatpally,
Hyderabad - 500090. Tel. 040-2304 4901/02, Fax: 040 2304 4953
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