People & Process Dimensions of Automation in Business Process Management Industry

Sumit Mishra, Sree Devi K K, Badri Narayanan M K

Abstract: Business Process Management Industry has evolved through various operating models in the last two decades and has delivered immense value to the organizations across the globe by optimizing cost and providing knowledge based services. This industry is now at the cusp of digital transformation where organizations are experimenting with automation to drive digital services for the customers to gain quantum leap in efficiency. Robotics Process Automation is the current disruptive technology that Business Process Management companies are experimenting with their current processes but are seeing mixed results due to people and process factors that are critical for the successful deployment of automation.

Research methodology includes inputs from relevant literature and case studies from organizations who have experimented with automation and research conducted by industry think tanks. It carefully investigates people and process aspects that impact automation initiatives from deployment perspective. Literature findings are further corroborated with empirical evidences through a likert 5 point scale survey taken by Project Managers and Users of automation. Survey is statistically validated and results are analysed to ascertain which are the most impactful causes that affect automation initiative.

This research paper is focused on People and Process specific automation challenges with suggested solutions for Business Process Management organizations that are currently experimenting with automation for the smoother transition into the organization's digital transformation initiatives.

Keywords: Business Process Management; People and Process Automation Challenges; Robotics Process Automation, Service Automation.

I. INTRODUCTION

Outsourcing as a business strategy is attributed to the legendary Management Guru Peter F Drucker who coined the concept of front- room and back-rooms way back in the time when outsourcing even in manufacturing was relatively unknown to the business world. Businesses across the globe were keeping both core and non-core activities within themselves in a race to become bigger in size until they reached a point where becoming bigger itself became the challenge for them. The strategy of outsourcing that came along with the concept of front-room and back-room made businesses to look at doing what they do best in their core competencies and outsource those activities what others can do best for them. **[1]**

It is noteworthy to mention that Drucker in his Wall Street Journal article (dated 25 July 1989) titled "Sell the Mailroom" clearly spelt out that companies need to focus on their core business and outsource the non-core to those for whom it is their "Core" business. **[2]**

Outsourcing as viable strategy helps an organization to focus on its core competencies and helps in solving the organizational design problems specific to functional tasks. Companies look at outsourcing to strengthen their business models and increase profitability. There have been many large deals closed by Indian companies. For example, Xerox had awarded a large contract to HCL Technologies in the year 2009 and recently renewed the contract in March 2019 for another seven years which is worth USD 1.3 Billion.

This strategy first revolutionized Manufacturing sector since it was easy to move manufacturing bases to other low cost locations easily after world economies opened up. Services based outsourcing could only get fuelled up after the advent of internet which made it possible to export services from any location in the world. This created a borderless global knowledge workers pool to leverage and gave rise to services outsourcing in 1990s.India, with its large pool of young workforce with good English skills was able to leverage from the growth of Business Process Outsourcing (BPO) industry as it was then called. In the initial years of BPO's growth in India, we saw the growth mostly in voice based processes with focus on relatively low end voice based work like Collections and Tele Sales , and low end back-office work requiring manual data entry. The growth of BPO in India can be grouped into five different phases. In the first phase, Airlines like British Airways and Swiss Air established their back-offices in India to do centralized revenue accounting of airline tickets but they were mostly dealing these activities with physical airline tickets since it was the time in 1980's when Internet was still not available in India. The second phase saw, companies like American Express, General Electric , Citibank etc. establishing their Global In-house Centre (GICs). The third phase saw advent of venture capital funded BPOs like EXL Service, eFunds etc. The fourth phase saw advent of leading IT companies entering the BPO industry like Infosys, TCS, WIPRO, HCL and IBM etc. The fifth phase saw advent of domain / industry specialized BPO offerings by almost all the players since it was realized that BPO offerings have to be domain / industry specific to be relevant to the business. **[4]**

Mr. Sumit Mishra*, PhD Research Scholar, School of Management, Hindustan Institute of Technology & Science, Chennai, India. Email: sumit.mishra@live.com

Dr. Sree Devi K K, Assistant Professor, School of Management, Hindustan Institute of Technology & Science, Chennai, India. Email: sreedevi@hindustanuniv.ac.in

Dr. Badri Narayanan M K, Professor, School of Management, Hindustan Institute of Technology & Science, Chennai, India. Email: mkbadri@hindustanuniv.ac.in

Retrieval Number F8555088619/2019©BEIESP
DOI: 10.35940/ijeat.F8555.088619
Journal Website: www.ijeat.org

2465

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

BPO industry gradually moved up the value curve from low end Voice and Back-office work to more specialized work like Customer Service, Finance & Accounting and Supply Chain etc.

which made National Association of Software and Services Companies (NASSCOM) to invent a new name for BPO in year 2012 that synchronizes well with all stakeholders. Business Process Management (BPM) name was adopted as a rebranding exercise to mitigate negative perceptions built around BPO industry tagged with low end jobs. Business Process Management (BPM) Industry as it is now called has grown very fast across the globe in last two decades and India has risen as a key outsourcing destination and evolved through various model from erstwhile focus on cost arbitrage to value arbitrage stage. The business world across the globe is moving very fast towards digital revolution since customer preferences in current time is growing digital in exponential proportions, thanks to user friendly smart phone era which provided a mini computer in everyone's hand with easy to use apps. This has made a drastic impact on business services and e-commerce since customer preferences have changed to everything digital and if companies do not provide such services digitally, they are most likely to lose out the business to those competitors who have gone digital. Another notable trend that is seen alongside the digital revolution is that customers , be it enterprise or direct consumers, have moved towards a preference of "pay per use" model and every company is trying to make their systems and processes more nimble and agile to cater to such needs. Since, BPM industry caters to now almost all the businesses across the globe as their middle and / or back-office, it is natural for them to change their operating model as per the digital revolution since a front office cannot be nimble and agile unless it's middle and / or back-office is equally efficient. Manufacturing world has gained a lot of efficiency due automation and now it is the turn of services to get benefitted by it since efficiency derived through process and people improvement without use of automation has its own limitations and automation is the only way to scale it up. Automation appears to be the only savior for the BPM industry and, hence, all players in BPM industry are working very hard towards making their processes automated. As per NASSCOM estimates, BPM industry globally is expected to nearly double its revenue size to $ 50-55 Billion by 2025 from its current size of $29.8 Billion in Year 2017. Currently, India leads the global share of BPM market with a market share of about 37%. If India has to maintain its lead in BPM industry, it has to emerge as the best automation outsourcing destination in the world. Automation is the current disruption that BPM companies are experimenting with their current processes but are seeing mixed results due to challenges around processes and people. In this research paper, we are making an attempt to understand Process and People related Challenges that impacts automation of processes in the BPM Industry with reference to India as a major outsourcing destination.

II. LITERATURE REVIEW

Process automation in the context of Business Process Management Industry is a new and emerging field of study which is going through its own evolutionary cycle and hence literature reviews have been done through various relevant resources of Industry leading research organizations and think tanks. This has been enriched further by attending three NASSCOM conferences where main theme was around automation in BPM industry.

This review has provided the required understanding of the subject matter under investigation, and, based on that, research objectives are framed with identified research gaps.

A. Markus Alberth and Michael Mattern in their article "Understanding Robotics Process Automation (RPA)" in Henley Business School – Capco Institute paper series in Financial Services opined that current focus of RPA innovation is on managing BOTS and its Governance functionality. Artificial Intelligence (AI) as per them seems to be the next focus in few years and so one should be wary of marketing claims of RPA companies and their solution partners before signing off on a RPA deployment.

As per their research, RPA can make organization to keep all work in-house and on-shore once digital operations technologies like RPA, Machine Learning and AI will further mature and that might create a situation called "technological Unemployment". **[5]**

B. Carl Benedikt Frey and Michael A. Osborne in their paper dated 17 Sep. 2013: The Future of Employment: How susceptible are jobs to Computerization? They have estimated that in foreseeable future, about 47% of total US employees jobs can be replaced by Machines. If that happens, it will create heavy burden on social security system of US. **[6]**

Majority of outsourcing work for India also originates from US and so this might have a direct impact on India's market share of global BPM industry and consequently it can impact employment adversely. This challenge can be converted into an opportunity if India's workforce gets ready for the digital worker age by equipping themselves with automation related technological skills so that they are better equipped to work in a business environment where human and BOTS work together and complements each other's strengths.

C. Mary Lacity, Leslie Willcocks and Andrew Craig in their research paper titled "Robotizing Global Shared Services at Royal DSM" reflected on four best practices of RPA project management as Operations leading RPA projects; Right automation approach; Right solution partner; and re-engineering the processes. **[7]**

It has been found in project management practices that if major stakeholders are not involved as a sponsor in leading the project, there are few chances that project will realize its true potential. Operation in the case of RPA deployment is a major stakeholder in success of the project and so it makes senses to let operations lead the RPA project.

D. As per Automation Anywhere conference called "Imagine" held on 19-20 September 2018 at Bangalore (India), some key takeaway of doing automation right are as follows: **[8]**

- Catch the right process to be automated;
- Do not attempt to automate a broken process;
- Automation should be implemented to solve a business problem;
- Automation should be led by business and enabled by technology;
- Picking the right RPA tool;

▪ Look for the best solution that works well with the RPA tool;

▪ Change the game by combining RPA with AI;

▪ Workforce of digital age must have an automation Orientation and skills to be successful and for that necessary reskilling of workforce is necessary;

▪ First focus on making fundamentals right;

▪ Monitor and Govern BOTS continuously.

E. As per HfS research, the top 10 RPA products are as under:

▪ Automation Anywhere

▪ Blue Prism

▪ UIPath

▪ Thoughtonomy

▪ Pega System

▪ NICE

▪ Antworks

▪ Workfusion

▪ Kofax

▪ Kryon

They have made this selection based on three features: Execution Success, Innovation Capability and Voice of the Customer in which major differentiator in performance evaluation is the "Voice of the Customer". **[9]**

Most of the product companies are working towards making their BOTs more intelligent by blending related technologies of AI and Cognitive, since, only with the blending of these technologies, one can realize the true potential of automation by creating unattended automation that will work without human intervention. The co-existence of attended and unattended automation will remain during the evolution of intelligent BOTs and both will play a significant part in this evolutionary journey.

While having a right product is important, it is also equally important to employ a solution partner who has the right techno-commercial skill sets to leverage industry best practices while deploying RPA solutions.

F. As per white paper published by Institute for Robotic Process Automation & Artificial Intelligence (IRPA & AI) in association with Kryon Systems, RPA works best with structured and rule based data and decisions but vast majority of processes do not fall in this category and so a human and RPA hybrid solution works best leveraging strength of each other. **[10]**

It is a fact that unless current set of processes are re-engineered; one may have to live with Human and BOTS working side by side in synergy to deliver expected outcomes.

G. Harold Brink, Senthil Muthiah and Rajan Naik in their Mckinsey article dated July 2010 discussed that automation of service engineer's scheduling and dispatching system in a company that sells high-tech equipment found out after one year of rigorous deployment of automation, the response time and productivity of engineers did not improve.

When they investigated non-performance, it was found that as-is manual process was automated which prevented automation from making any difference. No pilot test was performed initially to check if there are any improvements. After fine tuning the processes and IT requirements in the new pilot, it led to encouraging results and then only full implementation was approved at organization level. **[11]**

The learning from this case study is that one should never try to automate a bad process by just stitching automation around the as-Is process. A process should be made leaner through re-engineering and a pilot to be conducted before the full-fledged implementation.

H. Rahil Jogani, Sanjay Kaniyar, Vishal Koul and Christina Yum in their Mckinsey Article "How to avoid the three common execution pitfalls that derails automation program" discussed three common execution pitfalls as follows: First, one should always remember that automation solutions are complex because they affect multiple processes with significant interdependencies across technologies, departments, and strategies. Other more thoughtful approaches process re-engineering, organization redesign, policy reform, technology infrastructure upgrades or replacements need to be considered in parallel with automation solutions. Second, one should not try to automate inefficient processes directly rather one should first try to re-design processes, organization structure and in-house technologies. Third, Under-investing in Change management can easily derail any good automation program. **[12]**

I. Robinson, Johanna from Gartner recommends that finance processes should not be attempted for end to end processes automation; rather, one should automate one process at a time and continue to move to next in an iterative way. **[13]**

J. West Monroe case study on RPA implementation recommends following lessons learned from implementing automation:

▪ Rule based processes are prime candidates for RPA.

▪ Organization should ensure that business and technology users go through functional and technical design sessions together to be on same understanding level.

▪ Process re-engineering should be attempted before automation and change management should be implemented before re-engineering processes.

▪ One should re-test all exceptions before signing off on a pilot success.

▪ Process changes are unavoidable due dynamics around a company's growth and for each change, robot needs to be re-programmed again. **[14]**

K. Nicole Sharon in her article in Blackline Magazine outlined five main reasons for RPA failure as:

▪ BOTS Scaling up on proof of concept has been a major challenge

▪ RPA dependent on IT is a major challenge.

▪ Absence of Internal department support.

▪ Miscalculated ROI and 5. Unsuitable BOTS. **[15]**

L. The cost effectiveness of labor arbitrage in low cost location is about $1/3^{rd}$ of the cost while a BOT comes at around $1/5^{th}$ of the cost. This kind of cost arbitrage through BOTs will prompt companies to stop offshoring jobs and use BOTs instead of cheap labor in an off-shore location. Outsourcing industry players in low cost locations like India can convert this threat into an opportunity by providing services of Consulting in areas of Process re-engineering and automation as well as being a solution provider to the companies which are keen on automation of processes in-house and / or on-shore.

M. Keri Smith from ISG's Automation and RPA practice opines that RPA is a change program that requires changes within business functions by creating automation CoE, within an operational area by creating a Human and Digital workflow and across the whole operations by a suitable change in operating model. **[16]**

Gaps identified from the literature review

Most of the challenges discussed in studied literature provide a theoretical view of the issues around automation of processes. Since, process automation in BPM industry is currently in an evolutionary stage of its development, there is a need to focus on practical challenges around automation so that BPM industry will start its automation journey in a structured manner.

Areas to be investigated from identified research gaps are as follows:

There is a need to study Process automation challenges from the perspective of people and process related aspects since it has been experienced that the best of the technology and tool fails, if people and process related aspects are overlooked.

III. RESEARCH METHODOLOGY AND OBJECTIVES

Research is defined as a way of investigative thinking. Burns (1997:2) defines research as a "systematic investigation to find answers to a problem". **[3]**

From Application perspective, the current research paper is an applied research since it will provide insights on major causes of process automation non-performance challenges for the organizations and they would get benefitted from its finding. From Objective perspective, the current research is a descriptive study to better understand process and people challenges around process automation deployment.

The resources for research on Challenges of People and Process automation in BPM industry are as follows:

▪ Review of existing research and literature available around Process Automation in BPM Industry;

▪ Use of online discussions in professional forums of LinkedIn and inputs gathered from NASCCOM conferences like Global In-house Centre (GIC) Conclave and BPM Summit;

▪ Brainstorming with few Automation Project Managers to understand various types of challenges encountered in their Automation journey;

▪ Statistical Analysis of a likert survey where respondents are a select group of Project Managers and Users from BPM Industry in India who are directly involved in business process automation.

A. **Research Problem:** What are the challenges that adversely impacts Business Process Automation in BPM Industry from Process & People perspective?

B. Significance of the study: Most of the BPM organizations are experimenting with Business Process Automation but are seeing mixed results of success & failure. As a matter of fact, they are seeing more of failures than success even after a so called successful pilot deployment that gets signed off with solution partners but which finally gets derailed when put on live production environment at higher scale.

C. Objectives of the Study: This study is making an attempt to objectively study Process Automation challenges so that

one is able to avoid common pitfalls that lead to non-performances in process automation deployment in BPM industry.

D. **Limitation and Scope of study**: This study is limited to challenges related to Process & People aspects in the context of BPM industry in India.

E. Hypotheses framing: A discussion with few Automation Project Managers and Users led to narrowing down 35 causes that are likely to impacts process automation and hence the hypothesis framed is as under:

Null Hypothesis (H0): The underlying cause does not impact Process Automation non-performance

Alternate Hypothesis (H1): The underlying cause impacts Process Automation non-performance

IV. ANALYSIS

A survey questionnaire was launched using Google Forms with 35 cases categorized under Process, People and Technology related challenges are examined:

Likert 5 point scale with ranking scale (1-5) was used to record responses with choices as given below:

Strongly Disagree (1) / Somewhat Disagree (2) /Neither Disagree nor Agree (3) /Somewhat Agree (4) /Strongly Agree (5)

Respondents are a select group of Project Managers and Users from BPM Industry in India who are directly involved in business process automation.

A total of 104 responses were received and after filtering down duplicates, we are left with 98 responses to study and analyze data.

A. Statistical analysis of data: Validity Test: Likert scale has been used for measuring opinion of Process Automation Project Managers and Users. Following steps were taken to validate the questionnaire:

▪ Face validity: Face validity was established by discussing each case with RPA practitioners from BPM industry on the given topic and questionnaire was evaluated by research supervisors so that it does not contain any double barreled or confusing questions.

▪ Cronbach's alpha validation was conducted on total responses and the results are as under:

Reliability Statistics

Cronbach's Alpha	N of Items
.920	35

Case Processing Summary

		N	%
Cases	Valid	98	100.0
	Excluded[a]	0	.0
	Total	98	100.0

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

Statistical Analysis result(s) using SPSS

Cronbach's alpha value of 0.92 shows that questionnaire reliability is Excellent.

Factor Analysis was performed to group cases by related components:

▪ KMO and Bartlett's Test

Retrieval Number F8555088619/2019©BEIESP
DOI: 10.35940/ijeat.F8555.088619
Journal Website: www.ijeat.org

2468

Published By:
Blue Eyes Intelligence Engineering
& Sciences Publication

KMO and Bartlett's Test

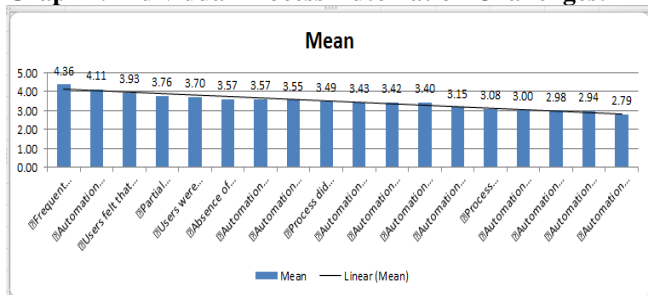| Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.766
Bartlett's Test of Sphericity	Approx. Chi-Square	2297.491
	df	595
	Sig.	.000

Statistical Analysis result(s) using SPSS

KMO test value of .766 shows that sampling is adequate to perform factor analysis.

Bartlett's test of sphericity is 0.000 which is < 0.05 (significant). This shows that factor analysis will be useful for the data under examination.

▪ Communalities: High communality > 0.5 show that almost all the factors extracted explain most of the variance in the variables being analyzed.

▪ Total Variance Explained: SPSS extracted 8 Factors (components) having eigenvalue > 1 and the cumulative percentage is 70.01% which shows that these 8 factors explain 70% of the variance and which is a good indicator.

▪ Rotated Component Matrix: Rotation: Varimax with option selected to Suppress Small Coefficients with absolute value below 0.5

▪ Grouping of cases: Factor analysis cases under same components are further regrouped as Process and People related challenges through brainstorming with few Process Automation experts.

B. Survey data at individual challenges level is summarized in following graph by its mean value in descending order:

Graph I: Individual Process Automation Challenges:

Mean

Mean values (descending): 4.36, 4.11, 3.93, 3.76, 3.70, 3.57, 3.57, 3.55, 3.49, 3.43, 3.42, 3.40, 3.15, 3.08, 3.00, 2.98, 2.94, 2.79

Source: Analysis of Survey Questionnaire

From the above graph, we can see the top individual challenges by its Mean value in descending order are as follows in the table I:

Table I: List of Process & People Challenges

Category	Items	Mean
Process	Frequent process updates required changes in Automation solution	4.36
Process	Automation tool was dependent on Automation solution partner for making coding changes	4.11
People	Users felt that automation solution if proved successful will lead to layoffs	3.93
Process	Partial knowledge transfer by Process SME to Automation solution partner	3.76
People	Users were used to Excel Macro based automation and found new Automation solution complex to use	3.70
Process	Absence of strong governance model around Automation deployment	3.57
Process	Automation strategy was led by technology who had limitations on business process knowledge	3.57
People	Automation Solution partner lacked domain expertise	3.55
Process	Process did not go through standardization before automation	3.49
Process	Automation strategy was led by Business Operations who had limitations on technological skills	3.43
Process	Automation strategy was left to Automation solution partner to project manage complete Automation solutions	3.42
People	Automation strategy had representation from all stakeholders but no alignment on automation strategy	3.40
People	Automation solution partner could only automate simple processes	3.15
People	Process Changes to simplify processes were not approved by Process Leads	3.08
People	Automation Solution partner lacked technical skills	3.00
People	Automation solution partner's solution was not able to scale up	2.98
People	Automation solution could not get approval of Technology team	2.94
People	Automation solution partner deployed an unsuitable Automation tool	2.79

Source: Analysis of Survey Questionnaire

C. Let us put all the individual challenges through a hypothesis testing to validate challenges that really impacts Process Automation.

Null Hypothesis (H0): The underlying cause does not impact Process Automation non-performance

Alternate Hypothesis (H1): The underlying cause impacts Process Automation non-performance

V. RESULT AND DISCUSSION

A. Findings from reviewed Literature

▪ Before implementing RPA, one has to relook at the business problem that needs to be solved using automation , Re-engineer the process towards solving that business problem and use appropriate RPA tool that can work best in the environment one has to perform the process.

▪ RPA solutions need to have features which do not require knowledge of conventional coding to make process changes but which can be administered directly in the user interface itself without making any coding changes.

▪ Artificial Intelligence and Cognitive are still at very nascent stage of development to integrate with RPA but that is what digital revolution is heading for in order to provide a true digital process experience and once that happens, it will remove "exception handling" by human to a large extent and that might give rise to real "Technological Unemployment" across the globe since that will be the future phase of Man Vs. Machine and until then it will remain Human capability augmentation through use of Automation.

▪ Conflict between RPA Automation team and Process people is found to be a very common issue since understanding level of business folks about what technology can do is limited and understanding level of Technology folks about business domain is limited. If business SMEs are not involved to first deconstruct the business problem to solve through automation, it will lead to either automating an inefficient process or right processes are not fully leveraged through automation.

▪ If a process involves too much of decision making, a standalone RPA solution will not work unless it is blended with Artificial Intelligence.

▪ In the earlier conventional way, automation was done using Macros & VB Scripts and business people used to take lead in such automation deployment without informing technology counterparts since such conventional automation used to slow down the ERP systems as data was fetched from user interfaces. Any change in name of a field etc. in processing systems by IT used to easily derail such conventional automations.

▪ RPA is not an overnight adventure and one has to start walking upwards step by step to reach the summit of the Mountain (Business problem to solve at hand in this case).

▪ RPA deployment does not end with moving into production. It has to be closely monitored and governed like work of a human being so that any changes in business system or business process do not make automation to fail.

▪ RPA is not an end in itself and so organizations have to avoid common pitfall of assuming that RPA will replace the complete business system. RPA is best used to create strong interfaces between legacy applications replacing which, otherwise, is a costly proposition.

▪ Business process re-engineering is the first step before deploying automation since we should not deploy automation on a bad process. The best way to reengineer processes is to rewrite the processes as if we are creating processes for a brand new company. A value stream mapping process creates a full landscape in which the process operates and this methodology comes handy before planning any RPA deployment.

▪ There are many RPA solution partners in the market and it would be worthwhile to check which one can meet the requirements. A generic RPA solution partner might not work except for very simple use cases. Many RPA solution partners come with SME expertise in respective industry domain for example F&A, Financial Services etc. and so skillsets of RPA solution partners in industry domain should be a key criterion to choose the vendor.

B. Findings from Survey Analysis

The result of Hypothesis testing through Chi-Square Test as shown in Table II shows that following challenges impacts Process Automation since the "p" value for following challenge is less than alpha value of 0.01 and hence Null Hypothesis is rejected and Alternate Hypothesis is accepted.

Table II: List of validated challenges through Hypothesis test

Category	Items	Asymp. Sig.
Process	Frequent process updates required changes in Automation solution	.000
Process	Automation tool was dependent on Automation solution partner for making coding changes	.000
People	Users felt that automation solution if proved successful will lead to layoffs	.000
Process	Partial knowledge transfer by Process SME to Automation solution partner	.000
People	Users were used to Excel Macro based automation and found new Automation solution complex to use	.000
Process	Absence of strong governance model around Automation deployment	.000
Process	Automation strategy was led by technology who had limitations on business process knowledge	.000
People	Automation Solution partner lacked domain expertise	.004
Process	Process did not go through standardization before automation	.000
Process	Automation strategy was led by Business Operations who had limitations on technological skills	.002
Process	Automation strategy was left to Automation solution partner to project manage complete Automation solutions	.002
People	Automation strategy had representation from all stakeholders but no alignment on automation strategy	.000
People	Process Changes to simplify processes were not approved by Process Leads	.007

Source: Analysis of Survey Questionnaire using SPSS

Let's discuss these validated challenges on how they impact RPA deployment and what proposed solutions are.

▪ Frequent process updates require changes in Automation solution: RPA delivers good results when processes do not change but in today's dynamic business environment, it is almost impossible to contain process change from happening. The solution lies in having a solution and tool which does not require cumbersome coding changes to adjust modifications in the process. It also requires a tool which can be updated for process changes by process SMEs without any dependability on IT folks.

▪ Automation tool was dependent on Automation solution partner for making coding changes: It is a known fact that a BPM process goes through multiple process updates due dynamic nature of business and if each process change requires a coding change with the RPA solution partner, it causes a lot of issue for operations team who were earlier able to accommodate these changes during manual processing by providing process updates to processors ,but, find it time consuming to go through coders to make changes since many BPM processes are time critical and cannot wait for coding changes. It is recommended that RPA should be implemented initially on the processes which do not require frequent process updates but that will limit the scope of RPA implementation since process updates across organizations are inevitable. Therefore, the solution lies in opting for a RPA product which is easy to customize through drag and drop menu based user interface that does not require coding skill dependability.

▪ Users felt that automation solution if proved successful will lead to layoffs: It is a common belief at workforce level that RPA implementation leads to job losses. While it is a true that low end data entry type of jobs will get automated with ease and few jobs which require multiple instances of decision making can also get automated through use of smart scripting but until RPA gets powered by AI, Human and BOTS needs to work complementing each other. While, bulk volume of repetitive jobs can be taken over by BOTS, Human intervention will still be needed for all exception handlings. In reality, it has been seen that wherever automation has been introduced, it has actually made job more human by removing the robotic work that humans were earlier doing. It is recommended that a change management program needs to be introduced to create a robust culture of automation before launching RPA deployment so that workforce is able to see goodness of automation rather than viewing it as an impending threat to the job. It is also important to launch a re-learning path for all employees to be successful in the digital age since workforce of digital age needs to be techno-commercial to be successful in a work environment where human and digital workers complements each other to make an organization more nimble and agile from customer success perspective.

▪ Partial knowledge transfer by Process SME to Automation solution partner: It is a common scenario in BPM organizations that process SMEs are mostly on-shore based and there is in-built dependability on them for any process exception handling. During RPA implementation, if the entire exception scenarios are not shared with the solution provider, it will make automation to get derailed or it will unnecessary create a manual exception handling process to handle such exceptions. If such exceptions are in huge number, the ROI expected from automation will never materialize.

▪ Users were used to Excel Macro based automation and found new Automation solution complex to use: BPM organizations have been toying with automation using Macros and VB script for a very long time and people have got used to such desktop based automation and find web based new age automation products as more cumbersome to use due erstwhile hard coded habit of using desktop based macros and VB scripts. It is important that there is proper training imparted on the new automation tool to all processors and as far as possible automation solution should be made more user friendly than desktop solution so that processors are able to see perceived value added benefits. Desktop based solutions needs to get retired soon so that processors do not work on two parallel automations at same time since new automation solution will get updated with recent process changes while Macros & VB script based solution will not be updated leading to quality and compliance risks.

▪ Absence of strong governance model around Automation deployment: Automation is not a onetime activity but actually a program in the form of Centre of Excellence (CoE) that has representation from all stakeholders which governs the initiation, roll out and continuous monitoring even beyond production deployment of the automation initiative. Any automation initiative which is launched without a rigorous governance framework can easily get derailed.

- Automation strategy was led by technology that had limitations on business process knowledge: It is a general assumption across the organizations globally that RPA should be technology driven as it deals with technology aspects, but, that is entirely not correct. The real customers for RPA output are operations folks who use in-house tools blended with RPA capabilities to create nimble and agile processes. These are the folks who also have deep domain knowledge of the business and hence it is important that operation lead the RPA initiative while technology provides invaluable support and due diligence to work with RPA solution partners who are entrusted with the responsibility of RPA solution and integration. It is recommended that the project team for RPA implementation is formed under leadership of operations which has representation from technology, finance , SMEs, BCP & Risk Management and compliance etc. so that none of the business aspects are overlooked while deploying automation. It is also important to have a governance team having a similar composition after go-live since BOTS needs to work with humans in a governed environment to de-risk business processes.

- Automation Solution partner lacked domain expertise: A solution partner caters to multiple domains / industries and are able to build that knowledge expertise that can come handy to leverage domain / industry expertise with a new customer looking for automation initiatives. In the absence of domain / industry specific expertise, solution provider has to depend heavily on process SMEs and in that process they most likely will be able to automate only As-is process with some improvements.

- Process did not go through standardization before automation: It is very important that a process goes through standardization before one attempt any automation initiative. If one attempts to automate a bad process, the result will be even worse. There are software available in the market like "Celonis" which can read the event log generated by the database and provide insights on which processes are more standardized and hence a better candidate for automation. [17]

- Automation strategy was led by Business Operations who had limitations on technological skills: Automation strategy needs to be led by operations since automation is actually solving a business problem and operations is better suited to crack that business problem. But, it is hard to find a techno-commercial skill set and hence one need to involve technology as well in the automation program besides other stakeholders to create a 360 degree view of all aspects around the business problem that needs to be solved through automation.

- Automation strategy was left to Automation solution partner to project manage complete Automation solutions: Automation strategy is actually solving a business problem through automation and so if the automation strategy is left open to automation solution provider without involving all other in-house stakeholders, it can easily put automation strategy at risk.

- Automation strategy had representation from all stakeholders but no alignment on automation strategy: In some cases, it is possible that all stakeholders can come together to steer an automation strategy but if there is no alignment on business problem that needs to be solved, brain-storming around automation strategy will not converge to an expected solution to solve the business problem. It is important at this point that operation / transformation leader bring his expertise to provide right direction to the discussion.

- Process Changes to simplify processes was not approved by Process Leads: It is a known fact that we should not attempt to automate a process without simplification and standardization. Any process simplification and standardization effort in the BPM industry needs to have undivided support of the process SMEs and so if process SMEs does not support simplification, automation will not deliver expected results. It has been experienced that many process SMEs feel that their job will be at risk if processes are simplified and standardized and hence they try to keep process steps complex so that they are being consulted from time to time for exception approvals. It is important for organization leadership to create required trust in them so that they deliver their best in streamlining the processes.

VI. CONCLUSION

People and Process factors are critical for the success of automation initiatives and Business process Management organizations are recommended to follow below guidelines to make their digital transformation initiative successful:

- Deploying automation should be considered as a business strategy and one needs to solve an organization level business problem through such enterprise level initiatives.

- Automation initiative should be led by operations leadership to avoid an organizational conflict due to organization structure issues.

- There has to be a good governance structure in the form of a Centre of Excellence (CoE) to govern BOTs and this governance structure should have representation from all stakeholders like Operations, Technology, SMEs, Compliance, and BCP & Risk Management etc. with a clear focus on making automation initiative successful as a goal with a strong program management rigor.

- A rigorous enterprise level Management of Change (MoC) program needs to be launched to make awareness about benefits of new RPA tool , inculcate confidence in people that automation initiative is required for the organization to make work more human and it should not be considered a threat for the job of either SMEs or processors.

- It is very important that solution partner who gets selected must have relevant domain / industry specific expertise so that domain / industry best practices are factored in the solution design. It is also important that only that RPA tool should get selected for deployment which can be administered by the operation / SMEs without any coding changes.

- Business Process simplification, standardization and Re-engineering are the most important steps for success of automation deployment and for those SMEs should be properly empowered for success of knowledge transfer.

- A pilot should be conducted on relatively complex processes so that proof of concept can be validated to judge the strength of the solution partner and the RPA tool since it has been found that relatively easier processes are selected for the pilot and it gets easily signed off but automation gets into challenges when complex processes are attempted for automation.

▪ A comprehensive re-learning initiatives for workforce needs to be initiated to prepare them for the digital age so that they are able to work in a set up where human and BOTs work in complete harmony for the benefit of the organization.

REFERENCES

1. Drucker, F Peter. (1957).” Landmarks of Tomorrow”
2. Drucker, F Peter. (25 July 1989). “Sell the mailroom” The Wall Street Journal pp.A16
3. Kumar, Ranjit. Research Methodology. pp 1-16
4. PricewaterhouseCoopers (PwC) (April 2015) article titled “The Evolution of BPO in India”. Available: https://www.pwc.in/assets/pdfs/evolution-of-bpo-in-india.pdf
5. Alberth, Markus and Mattern ,Michael (Nov. 2017) “Understanding Robotics Process Automation (RPA)” in Henley Business School – Capco Institute paper series in Financial Services. Pp 54-61. Available: https://www.capco.com/-/media/CapcoMedia/Capco-Institute/Journal-46/JOURNAL46_full_web.ashx
6. Frey, Carl Benedikt and Osborne, Michael A. (17 Sep. 2013): “The Future of Employment: How Susceptible are jobs to Computerization”? Available: https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf
7. Lacity, Mary , Willcocks , Leslie and Craig , Andrew (Nov. 2016). “Robotizing Global Shared Services at Royal DSM”. Available: http://www.umsl.edu/~lacitym/OUWP022016Post.pdf
8. Inputs from Automation Anywhere conference “Imagine” held on 19-20 September 2018 at Bangalore
9. Fersht,Phil and Gupta, Saurabh (September 17, 2018) , “Top 10 – Robotic Automation Products , 2018. Available: https://www.horsesforsources.com/hfs-top-ten-rpa-products_080118
10. White paper entitled “The Hybrid Automation Revolution” published by Institute for Robotic Process Automation & Artificial Intelligence in association with Kryon Systems. Available: https://irpaai.com/wp-content/uploads/2018/08/IRPAAI-Kryon-Hybrid-72dpi-NEW-LOGO.pdf
11. Brink ,Harold, Muthiah ,Senthil and Naik , Rajan (July 2010) Mckinsey article “A better way to automate service operations”. Available: https://www.mckinsey.com/business-functions/operations/our-insights/a-better-way-to-automate-service-operations
12. Jogani , Rahil , Kaniyar , Sanjay , Koul ,Vishal and Yum (Oct. 2018), Christina. Mckinsey Article “How to avoid the three common execution pitfalls that derails automation program”. Available: https://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/how-to-avoid-the-three-common-execution-pitfalls-that-derail-automation-programs
13. Robinson, Johanna (19 Nov. 2018) Gartner article “Gartner Identifies the Three Biggest Areas of Finance Automation Failure”. Available: https://www.gartner.com/en/newsroom/press-releases/2018-11-19-gartner-identifies-the-three-biggest-areas-of-finance-automation-failure
14. Snyder, Mark article on West Monroe case study “5 Lessons Learned from our recent Robotic Process Automation implementation”. Available https://www.westmonroepartners.com/-/media/Files/White-Papers/RPA_lessons-learned.pdf
15. Schultz, Nicole Sharon (17 July 2017) Article “5 ways your RPA implementation can fail (and how to avoid them) in BlackLine Magazine. Available https://www.blackline.com/blog/finance-automation/5-ways-rpa-implementation-fails/
16. Smith, Keri article “Automation: It's Not Hard, and it's Not Easy”. Available https://www.isg-one.com/consulting/articles/automation-it's-not-hard-and-it's-not-easy
17. Celonis whitepaper titled “3 Critical steps to make your RPA implementation a success”. Available: https://www.ciosummits.com/Celonis_Process_Mining_-_RPA_White paper.pdf

AUTHORS PROFILE

Mr. Sumit Mishra is a PhD Research Scholar at Hindustan Institute of Technology & Science, Chennai (India) and has more than 15 years of experience in the BPM industry managing digital operations and transformation working for organizations like Hewlett Packard Enterprise and Accenture etc.

Dr. Sree Devi K K is Assistant Professor in School of Management, Hindustan Institute of Technology & Science at Chennai (India). Her area of Teaching and Research includes Emotional Competence, Human Performance Management, Happiness and well-being, Human Resource Analytics, Business Culture and Ethics.

Dr. Badri Narayanan M K is Professor and HOD in School of Management, Hindustan Institute of Technology & Science at Chennai (India). His area of Teaching and Research includes Entrepreneurship, Strategy, Total Quality Management, Family Business, Organizational Theory, Talent Management and Cultural Changes in Organizations, Emotional Intelligence and Strategic Management