SCOPE

SCMHRD | AACSB ACCREDITED

CORPORATE EXCELLENCE AWARDS

THE ULTIMATE BATTLE BETWEEN CORPORATES FOR BUSINESS EXCELLENCE

AAROHAN

EXCELLENCE IN DIGITAL AND EMERGING POST-PANDEMIC TECHNOLOGIES AND TRENDS LEADING TO ENVIRONMENTAL SUSTAINABILITY

VOL - 1

SCMHRD | AACSB ACCREDITED

SCOPE

SUPPLY CHAIN & OPERATIONS CLUB

AAROHAN

CORPORATE EXCELLENCE AWARDS 2022

EDITORS:
Dr. Netra Neelam
Dr. Manoj Hudnurkar
Dr. Suhas Ambekar

SYMBIOSIS CENTRE FOR MANAGEMENT AND HUMAN RESOURCE DEVELOPMENT

The Event

The 'Corporate Excellence Awards' is an effort from SCMHRD to recognize and honor those Corporates who strive to set new benchmarks in the sphere of quality and efficiency. CEA 2022 offered a platform to showcase corporate projects and got them critically evaluated by a panel of industry experts. The selection parameters are first decided upon by a team of eminent panelists, followed by the official invitations to the Corporates for participation. We are proud and pleased that CEA 2022 reached new heights and has been appreciated & warmly welcomed by the business community.

Supply Chain and Operations Club (SCOPE) of Symbiosis Centre for Management and Human Resource Development has been honoured to host the 17th Edition of Corporate Excellence Awards on 10th February 2022, focusing on, ***Towards a better tomorrow: "Excellence in digital and emerging post-pandemic technologies & trends leading to environmental sustainability"***.

The CEA 2022 event witnessed the active participation of 150+ corporates from various domains. We, the SCOPE committee, are committed to making the CEA the most prestigious award in the field in the years to come.

From the Desk of the Editors, Symbiosis Centre for Management and Human Resource Development

The Corporate Excellence Awards (CEA) is an annual event conducted by the SCOPE club, SCMHRD that offers a platform to corporates to display their industry-related projects that exhibit advances in performance, efficiency and productivity across several domains centered around a consistent theme. Discussions about the projects and evaluations are done by a panel of eminent industry professionals.

The CEA serves as a forum for different businesses to exchange best practices and recognizes them for their creative and methodical application. The event facilitates the lasting relationship between industry and academia through a platform for learning and knowledge sharing.

Dr. Netra Neelam
Director & Professor, SCMHRD

Dr. Manoj Hudnurkar
Professor, SCMHRD

Dr. Suhas Ambekar
Asst. Professor, SCMHRD

WINNERS CEA 2022

Domain	Company	Project Title	Position
Lean Six Sigma	Tractor and Farm Equipment Limited (TAFE)	Introduction of Non-Asbestos Friction with Enhanced Life & Elimination of Field Failure – Brake Jam in SDDB Models 9958 to 0 PPM in Domestic Market	Winner
	Crompton Greaves Consumer Electricals Limited	Reduction of Winding Defects in Ceiling Fan Motor	1st Runner
	Tractor And Farm Equipment. Limited (TAFE)	Delivery Lead Time Reduction of TAFE 6515 Model Tractors	2nd Runner
	Tata Consultancy Services	To Improve Accuracy in Pharmacovigilance to Improve Regulatory Reporting and Patient Safety	2nd Runner
	Tata Consultancy Services	Accelerated Value Delivery through Agi(Le) Framework @ BFSI BPS NGM INDIA	Most Innovative Project
Industry 4.0 and Analytics	Vodafone Idea Limited	Intelligent Transport and Contract Management System	Winner
	Wipro Limited	Auto NXT Mechanization in Remote Infra Management Enterprise Solutions (6)	Runner
Supply Chain and Operations	Crompton Greaves Consumer Electricals Limited	Delight… Journey Towards Excellence	Winner
	CGI Information Systems and Management Consultant	Barcode Integration with SAP	Runner
IT Consulting	Wipro Saudia Limited	Wipro - Saudia Airlines - Implementation of Software Defined WAN	Winner
ESG Sustainability and CSR	Aditya Birla Fashion and Retail Limited Madura Clothing	Reduction in Fabric Wastage through Application Digital Technologies	Winner
General Management	JSW Global Business Solution Limited	Letter of Credit and Bills of Exchange Process Transformation	Winner

Table of Contents

LEAN SIX SIGMA

SUPPLY CHAIN & OPERATIONS

INDUSTRY 4.0 & ANALYTICS

GENERAL MANAGEMENT

IT CONSULTING

ESG SUSTAINABILITY & CSR

LEAN SIX SIGMA

Bharat Forge

Project Title: To Improve Process Capability for Pin Diameter on Cl3 Line

EXECUTIVE SUMMARY

Abstract

The project was taken to Improve Process capability of Pin Diameter on CL3 line with the project goal of exceeding customer-specific requirements, eliminating in-house rework and rejection by Six Sigma DIMAC approach as the problem was persistent throughout various parts and with consideration to criticality a detailed Process mapping finding the controllable, and noise KPIVs impacting the Y then Verifying and optimizing the measurement system with MSA and automation to match the line cycle time, Extensive usage of statistical tools to analyze the impacting factors, and funneling it to the vitals and Improvising the process by Design of Experiments, Kaizen, Poka-yoke and Kaizen, With validating the improvements and sustaining of it with SOP, Control Charts, Revised FMEA & Control Plan, Online Monitoring.

Company Background

Bharat Forge Limited (BFL), the Pune-based Indian multinational, is a technology-driven global leader in metal forming, having a transcontinental presence across ten manufacturing locations, serving several sectors including automotive, power, oil and gas, construction & mining, locomotive, marine, and aerospace. Part of Kalyani Group - a USD 3 billion conglomerate with a 10,000 global workforce; BFL today has the largest repository of metallurgical knowledge in the region and offers full-service supply capability to its geographically dispersed marquee customers from concept to product design, engineering, manufacturing, testing, and validation. The world's largest forging company with manufacturing facilities spread across India, Germany, Sweden, France, and North America, Bharat Forge manufactures a wide range of high-performance, critical & safety components for the automotive & non-automotive sectors.

It is India's largest manufacturer and exporter of automotive components and the leading chassis component manufacturer in the world. BFL's customer base includes virtually every global automotive backed by several decades of experience in component manufacturing & metallurgy. The company has embarked on an ambitious and exciting journey to redefine its already existing presence across several critical business verticals such as oil & gas, power, locomotive & marine, defense & aerospace, metals & mining, construction, and general engineering.

Current Problems/Challenges Faced

Voice of Customer: Pin Diameter is Major factor considering the Customer Point of View. And the Observed Cpk values are less than Customer Specific requirement.

Pin Diameter Capability: Pin Diameter Capability was low and causing internal Rework.

Line KPI: The departmental KPI scorecard for Crank Shaft line is RED zone in terms of Quality issues on line compared to targeted results.

Objective/Need/Purpose

To Improve Process Capability of Pin Diameter above Cpk-1.67 on CL3 Line as to meet Customer Specific Requirement and reduce the internal rework.

Methodology

Six Sigma (6σ): Is a set of techniques and tools for process improvement. Six Sigma is a statistical methodology used to reduce variation and eliminate defects in business transaction and processes. BFL Lean Six Sigma is an approach to improve the performance of organization from the customer's perspective in business transactions and processes.

Define Phase: Define the system, the voice of the customer and their requirements, and the project goals, specifically.

Measure Phase: Measure key aspects of the current process deviations and collect relevant data; calculate the 'as-is' Process Capability.

Analyze Phase: Analyze the data to investigate and verify cause-and-effect relationships. Determine what the relationships are, and attempt to ensure that all factors have been considered. Seek out root cause of the defect under investigation.

Improve Phase: Improve or optimize the current process based upon data analysis using techniques such as scientifically experiments, Improvement Action Plan & validation and standard work process. Set up pilot runs to establish process capability.

Control Phase: Control the future state process to ensure that any deviations from the target are corrected before they result in defects. Implement control systems such as statistical process control, production boards, visual workplaces, and continuously monitor the process. This process is repeated until the desired quality level is obtained.

Data Analysis/Results

A series of brainstorming sessions were conducted to identify the potential X's. Process Map FMEA was done and finally extracted to the Cause & Effect diagram. These X's were taken forward.

- Prioritization done by Ease and Impact Analysis.
- KPIVs where validated by use of Analysis tools including Hypothesis Testing- 2-Sample T-test, 2-sample Standard Deviation, Regression analysis, Machine Geometrical analysis, Bias & Linearity.
- Funneling of KPIVS to Critical or Vital factors where conclude.

Implications/Learnings

As the process has six pin diameters to be machined at a single time with LH and RH spindles, the number of factors Controllable and Uncontrollable were a challenge, taking into consideration of standard deviation and diameter to the target, accuracy from the previous operation, and automate the inspection process to give the right input and similarly probe the to get a process capability of Cpk-1.80 with arresting the noise factors by mechanical controls were great learning.

Improvements, Contribution to the Company

- Manpower saving (4 person) = 1.4 million/Annum
- Rework cost for Oversize pin diameter = 1.1 million/Annum
- Reject cost for Undersize pin diameter = 5.5 million/Annum
- Total Project saving = 8 million INR Annually

Limitations of the Offered Solutions

There were no limitations to offered solutions as with consideration of stakeholders, machine compatibility, and the line workers as Poka-yoke, Kaizen, TPM, and DOE optimization were done.

Conclusion

P: Productivity improved. With average of 243 parts per month i.e., 7% increase in productivity.

Q: Process Capability for all pin diameter is greater than 1.67. Eliminates Rework for oversize pin diameter from 5.86% to 0. Reduced Reject for undersize from 0.56% to 0.

D: No need of Rework for Diameter oversize parts. This improves line delivery. “243 No’s” more parts can be produced.

S: Operator safety is improved as manual inspection is eliminated.

M: Operator Moral is improved as manual inspection is eliminated.

Crompton Greaves Consumer Electricals Ltd.

Project Title: Reduction in Winding Joints

EXECUTIVE SUMMARY

Abstract

Customer delight is one of the goals for a leading company like Crompton Greaves Consumer Electricals Ltd. One way of achieving this objective is by providing the customer with a product that is free from defects. This is one of those projects which is aimed at delighting customers as well as reducing process rejections, thereby improving productivity and quality.

This project titled 'Reduction in winding joints' helps in achieving the overall objective of the company and is based on the structured problem-solving approach of the '12 step methodology of problem-solving involving the detailed analysis and the actions taken to achieve the goal. After the detailed analysis of the problem, valid root causes were identified, and appropriate actions were taken.

The project was successfully completed, and we were able to achieve an annual savings of approx. Rs. 35L.

Company Background

We are one of the leading consumer companies in India with an 80+ years legacy. Our expertise lies in manufacturing and selling a wide spectrum of consumer products ranging from fans, LED Lighting, Water Heaters, Coolers, Irons, Kitchen Appliances, and Pumps. We market our products under the "Crompton" brand name in India and in select Export markets and are a 5000+ crore company by revenue.

Current Problems/Challenges Faced

In the Ceiling fan, we have warranty failure cost as the highest component in COPQ. While analyzing the field failure samples and reports, it was observed that "winding failure" contributes almost 30% of the total defects. Based on the sample analysis of the failed samples, it was observed that approx. 60% of the failed samples consist of joints in the winding.

Objective/Need/Purpose

To reduce process rejections from 1.8% to 0.53% (70% reduction)

Methodology

The project uses '12 step problem-solving methodology'. The sequence of the steps followed include Identification of the problem, Selection of the problem, Define the problem, Analysis of the problem, Identification of causes, Root cause analysis, Data collection, Developing solution, Foreseeing probable resistance, Trial implementation, Regular implementation, Follow up, and review.

Data Analysis/Results

A total of 57 possible causes were identified through a brainstorming session consisting of CFT team. 12 root causes were identified by validation and simulation process and appropriate actions were developed to achieve the target.

Implications/Learnings

- Working of winding machines in detail.
- Structured way of approaching to problem solving using 12 step problem solving method.

Improvements, Contribution to the Company

- Rejection percentage reduced from 1.8% to 0.53%.
- Annual savings of Rs. 35L.
- Reduction in rework and manpower.

Limitations of the Offered Solutions

Difficulty in getting spare material after frequency of change is defined.

Conclusion

Successful completion of the project by the team led to an annual savings of approx. Rs. 35L to the company. It also led to non-tangible benefits like an increase in the morale of the employees. Actions identified in the projects are now being horizontally deployed across all the suppliers. This project also leads to the initiative of eliminating the joint in winding which is currently being explored.

Nexdigm Private Limited

Project Title: Robotics in Receipts Postings

EXECUTIVE SUMMARY

Abstract

To remain competitive, we need to innovate. To innovate, we need to free our bandwidth. To free time, our Operational excellence needs to change its gears. The three critical components of the business framework, People, Process, and Technology, need to be integrated seamlessly such that each component becomes a vital contributor to the organization's journey of growth and sustenance.

Operational excellence then needs to be driven through data monitoring, analysis, and drawing crucial insights from analysis. Not that many years ago, data was expensive to collect, and most businesses were hungry for data that would help them understand their operations, their environment, and their customers. Thanks to the Internet of Things, today's organizations are awash in data. There is so much data being collected that less than 20% of it is used. Analyzing data and making it usable for business decision-making is necessary for business survival, and that's where technology comes in.

In this project, an effort is taken to build Operational excellence through the application of proven quality disciplines of Lean Six Sigma and leverage with new, digital, and disruptive technologies to bring about efficiencies and effectiveness in the workplace and for the workforce and increase value in the entire supply chain.

Company Background

Nexdigm (SKP) is an employee-owned, privately held, independent global organization that helps companies across geographies meets the needs of a dynamic business environment. Our focus is on problem-solving, supported by our multifunctional expertise which enables us to provide customized solutions for our clients. An emphasis on collaboration and ethical conduct drives us to serve our clients with integrity while delivering high quality, innovative results.

It was the vision and perseverance of our founder and the management, supported by the tireless efforts of our associates that has helped us grow from a one-man family run business to 1100+ associates today. Currently, we have over 25 lines of offerings across Business Services and Professional Services serving our global customers through 11 major cities around the world.

Current Problems/Challenges Faced

Nexdigm team is performing cash applications for 50 Locations for one of its growing business service lines. There are 5 team members working on this process for 20 working days a month. The team must start with Credit card AR deposit processing once the statement for all 50 locations is pulled from the portal. This process takes 3.5 hours a day. Also, processing one-by-one AR receipt for 50 locations on a daily basis is quite time-consuming and lengthy as all the customer's payments need to be entered into the system daily. There is manual intervention and dependency on the team to pull the credit card statements for 50 locations. The team cannot start processing until all statements are pulled and the check file is not saved by the team leader. Exact planning is not possible as the count of credit card receipts is unidentified. The folder structure is not properly optimized as 50 folders are created location-wise to save the report, so there is a delay in processing due to system latency. To summarize

- Downloading of input was time consuming
- High waiting time involved
- Delay in work allocation
- Higher TAT & Errors

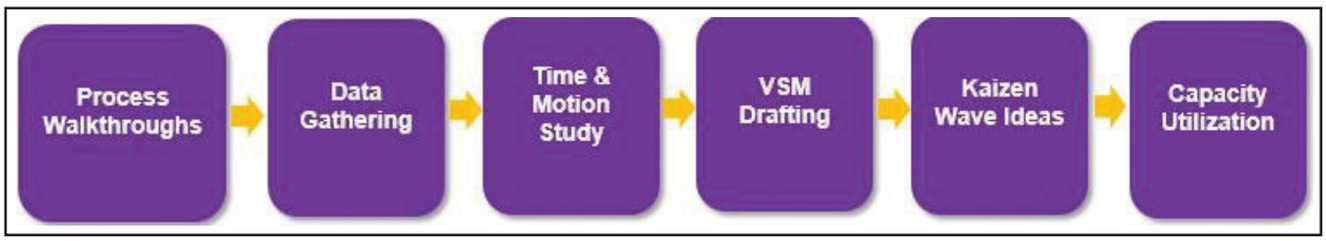
Objective/Need/Purpose

This project is taken to-

- Improve efficiencies, customer satisfaction and effectiveness.
- Improve Cash Application process lead time by eliminating manual intervention & waiting time.
- Improve accuracy.
- Keep ahead of peers and competition and stay relevant.
- Proactive management through better data visibility, analysis and decision making.
- Use robotics to automate process and make it relevant and ready for future.

Methodology

Lean Six Sigma integrated approach adopted to solve the problem.



Data Analysis/Results

Our systematic step by step approach led to significant results which are captured in below diagram.

Process Step	Extraction of Input	Check Completeness of Information	Posting data in AX	Query Management
Process description	**Checking input files for all three processes are received**	**Check if all the information is available for posting**	**Posting Data into MS Dynamics AX for US bank, Credit card & Green sky one by one**	**Query Handling**
FTEs deployed	1	1	2.5	0.5
Total FTE Count		5		
Total efforts saved	0	1	1	0.5

To Sum Up

- Improved TAT by 75%.
- Reduced manual intervention by 0%.
- Reduced waiting time & errors by 0%.

Implications/Learnings

- Project owner got lean certified and currently undergoing the last leg in Six Sigma certification.
- Project got recognized in internal event at the Quality Month Celebration Gallery Walkthrough. BOT checklist added to organization repository.

Improvements, Contribution to the Company

RPA and BOT learnings to organization repository for horizontal deployment.

Limitations of the Offered Solutions

One time effort in configuration mapping in case of system updates.

Conclusion

Team spirit is very high on the success achieved by this project and is confident that it can handle any complex problem in the future. It is important to sustain the efforts, and the team is committed to contributing and keep exploring and learn.

ONB Technologies India Private Limited

Project Title: Do it Right the First Time

EXECUTIVE SUMMARY

Abstract

We operate in the automotive aftermarket e-commerce industry. We interact with integrated functions such as operations, sales, marketing, technology development, human resources, and others. The current problem or challenge is that we are dealing with a non-standardization process due to a lack of quality management systems and the uncertainty of working to achieve the goals. Understanding activities as processes that connect and function as a system is disorganized. Identifying and determining areas for improvement. There is also a need to look for ways to improve processes, products, and services on a continuous basis. This project will explain how expansion has done business in a number of cities, operating the ambassador during the service delivery with the help of the channel partner concept. Day-to-day data consideration and MIS reporting concept. Implementing risk management and business continuity plans, especially during the surge days, the entire system and the process implementation were done with the help of the QMS 9001/ISMS 27001 certification procedure and were also successfully certified.

Company Background

21North Europ Assistance, the only global vehicle ownership lifecycle assistance platform, continues to reimagine the auto after-market industry to the benefit of global auto and auto-related brands, assistance professionals, and consumers. 21North Europ Assistance delivers the quickest, safest, and most innovative vehicle assistance service, products, and technology by combining location-based services, real-time data, artificial intelligence, and end-end connected communication. Our platform powers vehicle assistance solutions for leading brands across the automotive, insurance, fleet companies, and corporates.

Current Problems/Challenges Faced

The current problem or challenge is that we are dealing with a non-standardization process due to a lack of quality management systems and the uncertainty of working to achieve the goals. Understanding activities as processes that connect and function as a system is disorganized. Identifying and determining areas for improvement.

Objective/Need/Purpose

The scope of the project is to implement the process standardization inherit quality management system to achieve the objectives and plan.

- Gap Assessment
- PDCA Cycle & PPT Framework.
- Provide products and services that consistently meet customer and applicable statutory and regulatory requirements.
- Expansion Business to other cities.
- Operate the SD with the help of Channel Partners.
- Implement Risk Management & Business Continuity Plans.

Methodology

- Low Touch Operations
- Continual Improvements
- PDCA Cycle

Gap Assessment: To find the flaws in the system, Non-Conformity, the best industry practice.

- *Plan:* Establish QMS & ISMS policy, objectives, processes, and procedures relative to risk management. Fine-tune management system to provide results mirroring objectives of the organization.
- *Do:* Implement the QMS & ISMS policy, processes, procedures, and controls.
- *Check:* Monitor, review, and assess management system.
- *Act:* Initiate any relevant update and or improvements to Management system based on the results of an internal audit.

This implementation phase of the PDCA cycle helps our organization establish the scope of management system objectives and controls.

PPT Framework – People Process Technology. We balanced three critical components with equal importance.

- *People:* Match resource adequacy, introduce new roles, empower teams & people culture.
- *Process:* Supply with CP, Service Delivery, Control Centre to Support, SA & Remote City Launch.
- *Technology:* Process Automation using SAAS.

Data Analysis/Results

We have created a strong reporting mechanism because we strongly believe that any management system that runs behind metrics has sustainable growth. So, we implemented a daily and weekly MIS reporting mechanism. Monthly data analytics using BI Dashboards for all functions to keep on target at the functional level, tracking the objectives and indicators at the planned intervals.

Implications/Learnings

- Organize the processes in a logical manner that reflects the 21North's operational and business practice.
- Improve the efficiency of processes through the application of risk-based thinking and the PDCA cycle.
- Continually improve performance and effectiveness through the use of quality objectives and process-level KPIs.
- Create a business environment with an effective management system that results in satisfied customers, management, and employees.

Improvements, Contribution to the Company

- Business Transformation
- Expansion of business to different cities & across countries
- Operating supply & SD through Channel Partners
- Remote City Launch
- Data Analytics
- Risk Mitigation
- Process Transition from Manual to Automation
- Technology Adoption

Limitations of the Solutions Offered

Implementation of Quality Management System, Information Security Management System.

Conclusion

In the current trend as an associated automotive aftermarket e-commerce industry, we tend to move with integrated functions in areas like operations, sales, marketing, technology development, human resources, and others. The drawback or challenge is that we are addressing a non-standardization method thanks to an absence of quality management systems and the uncertainty of operating to realize the goals. Understanding activities as processes that connect and performance as a system is disorganized, distinguished, and decisive areas for improvement. There's also a necessity to look for tactics to enhance processes, products, and services on a nonstop basis. This project can make a case for how growth has done business in a variety of cities, operative the ambassador throughout the service delivery with the assistance of the channel partner concept. daily information thought and MIS reportage concept. With the assistance of the QMS 9001/ISMS 27001 certification procedure, the whole system and the method implementation were finished with the help of the QMS 9001/ISMS 27001 certification procedure and were also successfully certified.

TAFE - Tractors and Farm Equipment Limited

Project Title: Introduction of Non-Asbestos Friction with Enhanced Life & Elimination of Field Failure – Brake Jam in SDDB Models 9958 to 0 PPM in Domestic Market

EXECUTIVE SUMMARY

Abstract

India is an agricultural country. The tractor is a piece of important and preferred farming equipment. In this farming equipment, a brake is one of the critical safety parts. Utmost care must be taken to ensure zero failure and less breakdown. Tractors are a cost-sensitive market and are being used by economically underprivileged farmers. Tractor manufacturers bear the responsibility of ensuring a trouble-free product with reduced maintenance, operating, and service cost. Other than the above, tractor manufacturer ensures no hazardous materials like asbestos material is used, though there is no regulation for domestic application. It is also the responsibility of the tractor manufacturer to ensure comfort and less fatigue for the farmers. Regarding service, it is important to have reduced replacement costs and reduced travel to the service centers. Tractors being operated in a remote location, it will be difficult for the farmers or for service personnel to travel to the destination. This is time-consuming and costly. Mileage is an important feature for the reduced running cost. As the fuel stations will be far from the field, farmers cannot travel to the fuel stations frequently, and moving the fuels through cans is risky. Considering the above, the said project was selected.

Company Background

TAFE – Tractors and Farm Equipment Limited is an Indian tractor major incorporated in 1960 in Chennai, with an annual turnover of INR 93 billion (2014-15). The third-largest tractor manufacturer in the world and the second largest in India by volumes, TAFE wields about 25% market share of the Indian tractor industry with a sale of over 150,000 tractors. TAFE is also a significant shareholder in AGCO Corporation, USA – a US $9.4 billion tractor and agricultural equipment manufacturer.

Current Problems/Challenges Faced

At present, dry brakes are with asbestos friction (Hazardous). Non-asbestos frictions are sticky in nature, which warrants frequent cleaning. The stickiness of the friction will stick the actuator in applied conditions even after releasing the brake pedal, which results in a brake jam leading to an accident. By virtue of the size, other tractor manufacturers will not have this problem. And, friction life is comparatively less when compared to TAFE. To address this issue, another option is a move to oil immersed brakes, which is very costly, warrants special oil, high running/operating cost, reduced mileage, and high emission.

Objective/Need/Purpose

To meet the customer requirement with minimum cost impact.

- Introduction of Asbestos free friction.
- Environmental friendly friction.
- Tractors with increased mileage.
- Tractors with reduced emission.
- Increase brake cleaning frequency and down time.
- Reduced operating cost.

Methodology

The existing brake system in SDDB/IDB models analyzed for brake performance in different conditions like slope test, road test, spin test. Brake jam/grabbing observed in all conditions. The existing part, process and design verified for confirmation to drawing and installation procedure and no deviations observed. Analysis made through DOE method to narrow down the root cause of the issue in different combination of brake components.

- Selection of friction material based on sub supplier reports by supplier.
- Risk analysis and study of potential causes of brake jam.

Data Analysis/Results

Design of experiments done to analyze the brake performance in different combinations of brake components. The brake actuator springs, liner type, and lubricant application were made in full factorial method, and the root cause arrived. The root cause of the failure is found to be brake jam due to less retention force in the actuator, and in order to reduce stress on the actuator lug in housing, lubricant paste is applied. As per environmental norms, the type of liner changed from asbestos to non-asbestos liner.

Implications/Learnings

With the proposed design, retro fitment is feasible without any modification in the major aggregates. Other modifications like adding external springs in the actuator and housing modification will result in the failure of housing.

Brake Testing standards, Classification of brakes, QFD, DOE. Benchmark details for Brake system System Level & Component level, Customer Usage Pattern, and Critical implementation Applications.

Improvements, Contribution to the Company

- Actuator 4 springs Change in to 8 springs.
- Thermal Lubricant at actuator mounting lug.
- Introduction of Environmentally friendly Non-asbestos liners.

Limitations of the Offered Solutions

During brake application, mechanical energy will be converted into heat energy. Dry brakes, by virtue of the design, have air cooling by conduction through housing. However, breathers are provided to reduce the heating effect. Proper friction grade must be selected, which will withstand the heat generated during operation.

Conclusion

Based on the in-house tests, tractor level tests, and field trials, the conversion of hazardous asbestos to environmentally friendly non-asbestos friction is feasible without any modification in other brake aggregates like housing, cover, etc., and the option of retro fitment. Customers and farmers are happy with the brake performance, and it has met the expectation of end users w.r.t reduced cost, reduced cleaning frequency, and expected life. The introduction of non-asbestos friction has avoided the conversion of dry brakes to oil immersed brakes. Could retain the other advantages like better mileage, reduced emission, Oil Immersed brake conversion cost, operating cost, etc.

TAFE - Tractors and Farm Equipment Limited

Project Title: Reduction of Customer Perceived Paint Quality Defects from 872 DPH to 436 DPH

EXECUTIVE SUMMARY

Abstract

In the growing competitive business environment, it is important to meet world-class standards and bring customer delight with paint in aspects of corrosion protection and aesthetics by producing the right quality and defects-free tractor with an optimal cost in a green and safe environment. Hence this project mainly focuses on improving the overall quality and reducing in-house paint rework by using appropriate quality tools which leads to the continuous improvement of Systems, Processes, and Measurement.

Based on the Data collection, perceived paint quality defects are prioritized by using the Pareto chart and Cause & Effect analysis. The prioritized defects are taken for the next level of analysis by using appropriate quality analysis tools such as Six Pack analysis for the SPT, WDO's, and Paint Input parameters, DOE-Full Factorial analysis for the critical parameters, Attribute agreement analysis and PFMEA Analysis. The Opportunities for improvements are identified through analysis and followed by implementation of all the improvement actions in the line which is monitored continuously and controlled by the standardization methodology.

Company Background

TAFE – Tractors and Farm Equipment Limited, is an Indian tractor major incorporated in 1960 at Chennai, with an annual turnover of INR 93 billion (2014-15). The third-largest tractor manufacturer in the world and the second largest in India by volumes, TAFE wields about 25% market share of the Indian tractor industry with a sale of over 150,000 tractors. TAFE is also a significant shareholder in AGCO Corporation, USA – a US $9.4 billion tractor and agricultural equipment manufacturer.

Current Problems/Challenges Faced

The things we noted from our daily Quality Audit report is some of the paint defects are in nature to eliminate or control within the process by improving the robustness of the system.

As part of that, perceived customer paint quality defects are increasing which contributes to the increase of Plant Manufacturing PPM and affects the on-time delivery of the tractor with the right quality. So, these defects are contributing to the long-time paint performance on the tractor which may end up in customer dissatisfaction with the brand value.

Objective/Need/Purpose

To minimize the factors which are affecting the best-in-class paint finish on tractors with respect to the customer perceived paint quality in the growing environment.

Methodology

DMAIC methodology are applied to control the process variations in the Spray pretreatment, WDO and Paint Baking oven in Chassis paint shop and paint input parameters.

- Six pack analysis
- Design of Experiments (For 4 different parameters)
- Attribute agreement analysis
- PFMEA
- Resuming the advanced Virtual based training methodology for Spray painting

Data Analysis/Results

- Overall Paint defect DPH reduced from 872 to 429.
- Overall Sigma performance increased from 1.1 to 2.02.
- Depot & Dealer Paint defect ppm reduced from 6820 to 0 PPM.

Implications/Learnings

- Adapting new concepts (Vacuum generations for chassis joints, Poka yoke control in chassis PMR).
- Optimizing process parameters (DOE run for new learners, Lock & Key control for the critical parameters).
- Minimizing operator to operator variations (VTR – Audio/video mixed training, Pictorial SOP's and cross skill training).

Improvements, Contribution to the Company

- Implementation of Vacuum generator pumping machine in chassis air blowing process.
- Introduction of Air pressure regulator with Lock & Key system in the critical painting stations.
- Installation of paint temperature sensor with alarm system and its poke yoke interlock with the 2K machine.
- Designing of new rotational tools.
- Jig commonization & Modification for the chassis moving parts.

Benefits to the Company

- Warranty benefit to the company – 50% warranty cost reduction with respect to the corrosion.
- Customer delight through zero rework and High durability of the paint.

Limitations of the Offered Solutions

- Highly controlled poka yoke systems are implemented in line. However, those poka yoke systems need to be calibrated in a periodic time basis to maintain the critical parameters.
- New tools and jigs are introduced in the critical stations for the existing parts which need to be developed if any new parts are added to the system.

Conclusion

All the identified improvement activities are implemented in the line and controlled through process control plan,standardization methodologies such as updating of SOP's, Amendment & Revision of SWC's and Visual defect tracking system (Paynter chart) are implemented and monitored.

Both Internal & External Customers are delighted with the improved paint performance that has met the expectation of paint reliability, reduced cost, reduced cleaning frequency and increased life expectancy of paint.

TAFE - Tractors and Farm Equipment Limited

Project Title: Improving Top Coat Paint Adhesion in Tractor Chassis Body

EXECUTIVE SUMMARY

Abstract

Painting of Chassis body is done based on the market specification (Domestic – PU Charcoal grey, EEM – PU Venetian grey, AGCO – PU Fendt grey). After painting & 72 hours of maturity, Paint adhesion quality is checked using a high-pressure water jet, pencil hardness, and Cross-hatch tests. Paint adhesion failure was observed in cross-hatch tests in a few of the chassis (81818 PPM). Increasing of failure level may lead to paint peeling off at field during paddling.

Company Background

Tractors and Farm Equipment Limited is one of the companies from Amalgamation group. TAFE tractor division is situated at Madurai & Bangalore. Madurai Operation is currently producing TAFE & Massey Ferguson tractors with range from 25Hp to 100 Hp at an average of 4500 tractors per month. It consists of Domestic: 23 Models and 61 Variants and Export: 65 Models and 473 variants. TAFE Madurai plant is ISO 9001, 14001 & 45001 certified & received TPM Excellence & Consistency award from JIPM.

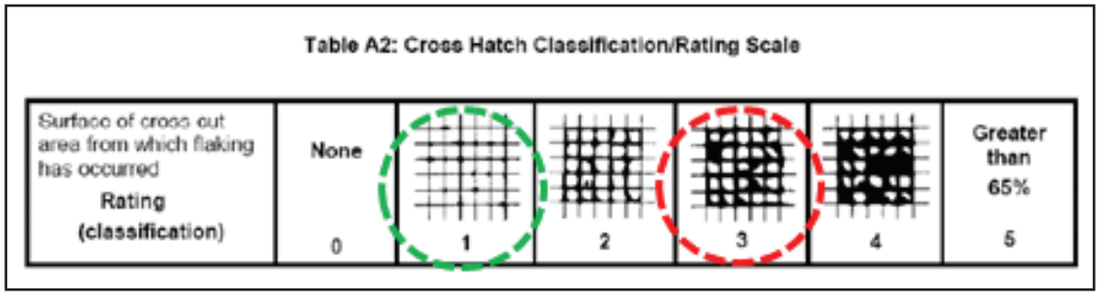
Current Problems/Challenges Faced

Paint flaking/failure found in cross-hatch adhesion test about 5 to 10% (Rating 2&3) from the Cross-cut area & it should be in 0% (Rating 1), i.e. paint adhesion to be improved to 100%

Objective/Need/Purpose

Paint adhesion failure in cross-hatch adhesion test should be in 0% - Rating 1, i.e., paint adhesion to be improved to 100%.

Table A2: Cross Hatch Classification/Rating Scale



Methodology

Six sigma approach is adopted for improving the chassis paint adhesion from rating 3 to rating 1.

D - *Define:* Process definition of the chassis painting process with SIPOC details.

M - *Measure:* SIPOC data identified parameters MSA done & measured as per the plan.

A - *Analyze:* 7X's are identified & validated through 1 sample T-test & EMT graph and root cause is identified.

I - *Improve:* Action taken for the all 4 root causes (2X's) and validation is done using six sigma tools in pilot lot implementations.

C - *Control:* Standardized all improvements & sustenance monitored in NP chart.

Data Analysis/Results

Issue	Root Cause	Analysis Tool Used	Solution Implemented	Validation Tool Used	Result Obtained
Effective metal temperature high	X1 - Hot Air Duct Damage	Cause and Effect analysis Significant matrix	Damaged ducts replaced & position marked with paint for future reference during oven cleaning process.	Two sample t test	Effective metal temperature time reduced from 60 minutes to less than 40 minutes @ 70 oC
	X2 - Hold up time more	Cause and Effect analysis Significant matrix	Timer unit fixed & burner interlocked with timer unit & burner auto switched off during planned line stoppage.	EMT	
Iron PO4 total acid low	X3 - Chemical improper mixing	Cause and Effect analysis Significant matrix	Pre mixing tank & pipe line system provided for proper diluting of chemical with water.	Two sample t test	Cpk improved from 1.14 to 2.52 Total acid increased from 6.9 to 7.4
	X4 - Excess addition of water	Cause and Effect analysis Significant matrix	Auto level controller installed to avoid excess addition of water into degreasing tank.	Two sample t test	
Full scale implementation results				NP chart	Adhesion improved from rate -3 to rate -1

Implications/Learnings

- Tools usage for Root cause analysis.
- Hypothesis testing (1sample T-test & 2 sample T-test).
- Process capability study (Cpk).
- NP chart usage for result stability monitoring.
- Brainstorming with CFT.

Improvements, Contribution to the Company

- Chassis paint adhesion improved & PPM reduced from 81818PPM to 0PPM.
- Cost saving of Rs.1,03,074/annum.
- Fuel consumption reduced by 6 liters per shift.

Limitations of the Offered Solutions

All the pilot lot & full-scale solutions implemented are standardized without any limitations.

Conclusion

With the full-scale implementations, chassis paint adhesion improved to Rating-1 in cross-hatch test. Monitoring done for 3 months with the control chart. Cost saving done is certified by WA.

TAFE - Tractors and Farm Equipment Limited

Project Title: Delivery Lead Time Reduction of TAFE 6515 Model Tractors

EXECUTIVE SUMMARY

Abstract

TAFE 6515 model tractors are new platform models, which took an average of 8 days from roll-down to get delivered to the customer. The main project aim is to reduce the delivery lead time from 8 days to 1 day, as the customer demand for the tractor is huge. Much lead time is taken due to the numerous reworks taking place in the tractor post roll-down to meet the customer requirements. Each tractor is being reworked uniquely to attain desired results, meeting quality/customer requirements. Yet another issue is that the imported parts don't suit the current product design and improper transit of imported parts leads to many damages. This project revolves around eliminating the reworks and standardizing the design/parts/process actions by analyzing through the Six Sigma approach.

Company Background

Tractors and Farm Equipment Limited is one of the companies from Amalgamation group. TAFE tractor division is situated at Madurai & Bangalore. Madurai Operation is currently producing TAFE & Massey Ferguson tractors with range from 25 Hp to 100 Hp at an average of 4500 tractors per month. It consists of Domestic: 23 Models and 61 Variants and Export: 65 Models and 473 variants. TAFE Madurai plant is ISO 9001, 14001 & 45001 certified & received TPM Excellence & Consistency award from JIPM.

Current Problems/Challenges Faced

Compared to the regular models which get on-date delivery, TAFE 6515 could not meet the on-time delivery and takes 8 days timeline on average. There is no solid root cause and only on a trial basis reworks are carried out to achieve the results which are not sustainable. Especially the rpm drop faced in the tractors results in customer dissatisfaction, as customers face the issues even after carrying out reworks. Current Process sigma: 0σ, Cost incurred is Rs. 1,02,600/ annum. Paint adhesion failure in cross-hatch adhesion test should be in 0% - Rating 1, i.e., paint adhesion to be improved to 100%.

Objective/Need/Purpose

To meet the customer requirement and demand, the tractor has to be delivered on time. Also having unfinished goods stock for 8 days and lot of reworks incur huge cost to the company.

Methodology

Six sigma approach is taken for reducing the delivery lead time from 8 days to 1 day.

D - *Define:* Process definition of the TAFE 6515 series with SIPOC details.

M - *Measure:* SIPOC data identified parameters measured and validation done.

A - *Analyze:* Quick wins (12) and tools usage for the in-depth analysis (4) required.

I - *Improve:* Action taken for the 4 issues - root cause identification and validation done using tools in pilot lot implementations.

C - *Control:* Standardized through ECN's and process check sheet/Training sign offs. I-MR chart used for the sustainability verification.

Data Analysis/Results

4 Issues taken for analysis. DMAIC approach followed:

Issue	Root Cause	Analysis Tool Used	Solution Implemented	Validation Tool Used	Result Obtained
RPM drop from 2300 to 2200	→Bulkhead part deviation →Hood stopper inefficient	Cause and Effect analysis, Significant matrix	Fixture modification done to correct part deviation	Two sample t test	RPM drop eliminated
ROPS clips fouling with Hood	→ROPS clips tapering →Interference in design stack	Two sample t test, Why-Why analysis	Clips removed from ROPS	Mann-Whitney test	ROPS fouling eliminated
Seat sliding stuck up	→Nylon pad damaged →Improper packaging	Cause and Effect analysis, 3W1H	Packaging improved	Mann-Whitney test	Seat sliding smooth
Radiator top not sealing	Foam width is 2X times plate width	Why-Why analysis	Plate width increased	Mann-Whitney test	Perfect sealing
Pilot lot implementation results				Non parametric sign test	1 day delivery

Implications/Learnings

- Tools usage for Root cause analysis
- Hypothesis testing
- I-MR chart usage for result stability monitoring
- Brainstorming with CFT
- Packaging standards

Improvements, Contribution to the Company

- Process sigma improved to 4.8σ.
- Cost saving of Rs.1,02,600/annum.
- On time delivery of the product.
- Line out-Offline reworks eliminated.

Limitations of the Offered Solutions

All the pilot lot solutions implemented are standardized without any limitations.

Conclusion

With the pilot solution implementations, the delivery lead time was reduced from 8 days to 1 day. Monitoring done for 3 months with the control chart and 1 day sustainability maintained. Cost saving done is certified by WA.

Wipro Technologies Limited

Project Title: Alert Reduction

EXECUTIVE SUMMARY

Abstract

This case study Alert reduction speaks about the pain behind handling volumes of alerts and what challenges we faced with the team and customers, how efficiently we applied the lean principles and made the team lively by working on alert reduction techniques. This helped us to have a drop in alerts by 46% from 2020 to 2021. The team was also happy to work on the optimization plans and automation runbooks which helped to groom their skills in the architectural understanding and technology landscape.

Company Background

Wipro Limited is a leading global information technology, consulting and business process services company. We harness the power of cognitive computing, hyper-automation, robotics, cloud, analytics and emerging technologies to help our clients adapt to the digital world and make them successful. The company recognized globally for its comprehensive portfolio of services, strong commitment to sustainability and good corporate citizenship. We have over 197,712 dedicated employees serving clients across six continents. Together, we discover ideas and connect the dots to build a better and a bold new future.

Our customer is one of the world largest food and beverages company. Customer's focus drastically shifted towards improving their core business by adapting new digital ways of working which possibly will yield the best outcomes viz., Increased/visible business value, a transformed enterprise with great user experience and reliability with speed & agility.

Current Problems/Challenges Faced

The monthly average of Incident inflow during the period four months (01-Apr-21 to 31-Jul-21) is 915. The numbers are high and any delay in the resolution of critical or high priority incidents may result in business outages resulting in customer dissatisfaction as well as end user dissatisfaction. Our goal is to reduce 15% or more from the baseline.

- More time spent in resolving the tickets.
- Resources went on working with a repeated set of issues.
- Creates boredom to resources as they work on same set of issues/technology/domain.
  - Unable to groom oneself in the new cutting-edge technologies.
- Resources become unable to explore better techniques, innovation, and automation process, have no room for better improvisations and finally become more reactive than proactive.
  - Downtimes lead to drop in customer satisfaction.

Objective/Need/Purpose

Wipro has been managing the Nestle infrastructure since 2005 and has been achieving key critical objectives and SLAs. To further enhance our support and delight the customer, we picked the alert reduction project. We followed lean principles and applied standardization and automation techniques to reduce the alert tickets.

Methodology

The below methodologies were applied in the current environment based on *Lean 5S Pillars* to reduce the frequently generated alerts.

- Capacity planning to ensure the environment/application is capable to handle the load/traffic.
  – Black out alerts during planned activity.
- Suppress unwanted alerts.
- Channelizing the alerts to the right team.
- Creating better optimization plan.
- Revisit the threshold.
- User raised tickets have been picked, run books created and made as self-help solution.
- Use cases which could be resolved through automation.
- Created standard operating procedures to fix the issues quickly and help to increase the mean time to resolve the tickets.

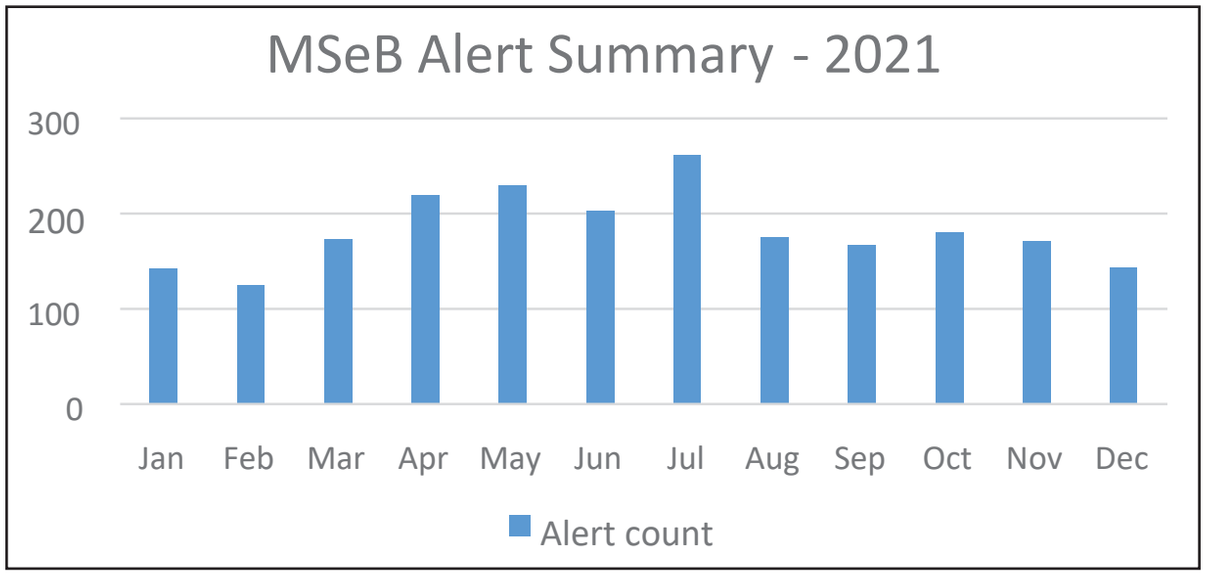
Data Analysis/Results

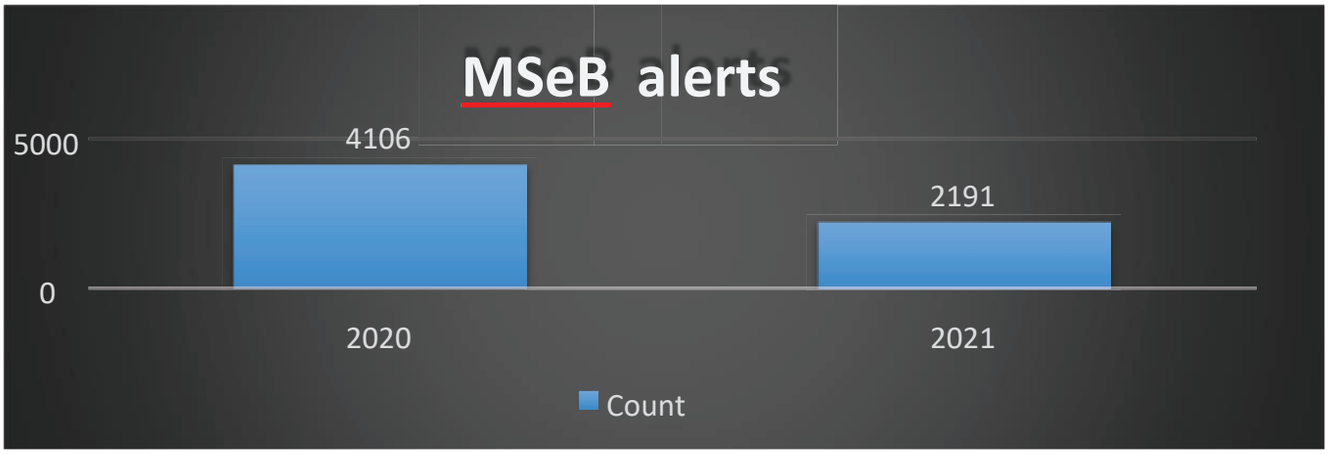
The ticket dump has been taken from the past year. Detailed analysis was done on the ticket categories, issue type, frequency of the tickets, solutions provided. A simple category was prepared to group the tickets received.

- Infra structure related
- Application related
- Database related

A deep-dive analysis was done on each category of the ticket grouping and it was further classified as capacity, black out, genuinity of the alerts. We found around 30% of alerts were related to capacity and triggered during the Big days. Those were first considered and checked for a better capacity planning with environment team. The application related alerts were taken and checked for the thresholds which could be revisited and applied. These 2 techniques helped us to reduce the alerts to a greater extent.

Moving further, we also noticed few request tickets were made by the users to do a job for them which were taken as use cases for automation. Runbooks were created and aligned in self-help portal where the users themselves can go and execute the job without anyone's intervention. This sort of action has not only helped us to reduce the alert but also increased the satisfaction of team members for involving their skills in automation.





Implications/Learnings

The 5 why principle helped us to find the root cause behind the increased alerts.

- The 5S methodologies [Seiri, Seiton, Seiso, Seiketsu, Shitsuke] helped for an improved customer and employee satisfaction which resulted in increased productivity.
- Automation helped to optimize repetitive tasks which helped to reduce/avoid manual intervention.
- Runbooks developed for Self-help made the users to achieve their objective without any delay/dependency.
- VSM helped to draw the current process, to identify the value add and non-value add activities which causes delay in closure. It also helped to improve the current process with higher efficiency to reduce the timelines, improve quality, and achieve shorter lead time.

Improvements, Contribution to the Company

- Well capacitated environment to handle loads during peak times.
- Right threshold to trigger alarms at right time.
- Self-help solutions to have improved user satisfaction.
- Improvement in employee productivity.
- Increased Customer satisfaction.

Limitations of the Offered Solutions

- The solution could be applied to any environment with limited changes.
- Automation techniques can be applied further to have more self-help tasks.
- Big sale days could be handled with hassle-free loads.

Conclusion

Any support team in an organization with multi-layer support can be the ideal victim for this kind of project. The team should be kept lively with architectural understanding, key issues and the resolutions to be provided. The importance of alerting and knowledge on how to provide the quick resolution in short time should be welltaught and practiced. Several techniques like Machine learning algorithms, anomaly detection, self-healing techniques be applied in future which could help the team to focus on continuous increased productivity. This project is further planned to elevate into the next level dimensions by applying the above techniques.

Wipro Technologies Limited

Project Title: Restructuring of Critical - SAN Infrastructure

EXECUTIVE SUMMARY

Abstract

The Project is executed for a Major Insurance Client with a total of 1.27 crore Assets under management and has insured more than 6.1 crore clients. 2020 came up with something we all had never seen, experienced, or thought of. The whole world was stuck with the tsunami of the COVID-19 virus, and everything was shut down.

In such an unprecedented exigency our client started facing slowness in the storage area network which hampered business continuity.

Company Background

Wipro Ltd is a leading global information technology, consulting, and business process services company, Building bold tomorrow, Celebrating our 75th year, we leverage the power of technology with a passionate global talent base to help our customers, communities, and planet thrive in the digital world.

Current Problems/Challenges Faced

We observed that the uptime of critical storage devices in HDFC life infra was at an average of 761 Days (Jun 20' Aug 20'), which was leading to non-validation of High Availability, hardware failures, non-upgradation of storage driver version, server slowness, performance issues and misbehavior of storage devices.

Objective/Need/Purpose

- Restructuring SAN Infrastructure will help in Server, Network, SAN Switch & Storage level redundancy.
- Decommission of End-of-Life Storage and SAN Switches.
- To Streamline Server, Storage & SAN Switch connectivity with labeling.
- Cost Benefit to Wipro and Customer.

Methodology

- Define Phase – Voice of Customer / KANO approach, Project CTQ and SIPOC
- Measure Phase – Normality Test, Stability test, Process baselining and target validation
- Analyze Phase – Fishbone Diagram, Multi-voting, Gemba Walk, Correlation, Regression and One Sample test
- Improve Phase – Implementing solution
- Control Phase – Sustenance plan

Data Analysis/Results

- Define Phase – Voice of Customer / KANO approach, Project CTQ and SIPOC
- Measure Phase – Normality Test, Stability test, Process baselining and target validation
- Analyze Phase – Fishbone Diagram, Multi-voting, Gemba Walk, Correlation, Regression and One Sample test
- Improve Phase – Implementing solution
- Control Phase – Sustenance plan

Improvements, Contribution to the Company

- Engineer's mundane efforts saving worth of, $23k to Wipro by automation of health check report for all the accounts supported.
- Redundancy enabled at Server, Network, San switch & Storage level, which has resulted in the increase of storage availability from 90 to 100%.
- This has enabled smooth operation for bank in due course of Pandemic.
- Perform failover & takeover test has assured secured environment.
- Hard saving to Client $166k (10.8 Mn INR) annualized savings by optimizing the Storage Rack space.
- Wipro - $33k (2.1 Mn INR) overall benefit post execution of project.
- The robustness of the infra is evident through zero Major Incident since last 6 months.
- Consistently achieved 6.2 and above CSAT score in scale of 7 from the client.
- Score 6.58 of 7, 94% Top 2 box, 99% client rated as better & similar to other Service Providers.
- 4 End of Life Storage & 7 San Switches is decommissioned which enhanced the efficiency of data center operations, by releasing nonvalue added rack space and optimizing power utilization.
- Replication in progress for a conglomerate client with 11 business unit.

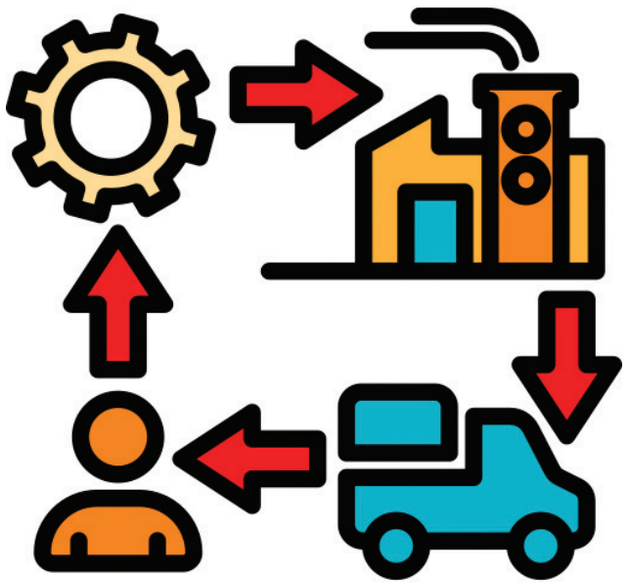
Limitations of the Offered Solutions

No Limitation Observed.

Conclusion

Restructuring of critical SAN infrastructure has enabled the improvement in productivity, quality, security, cost, Delivery, Morale and Environment.

SUPPLY CHAIN & OPERATIONS



CGI Information Systems and Management Consultant

Project Title: Barcode Integration with SAP

EXECUTIVE SUMMARY

Abstract

Currently, the components provided by vendor have barcodes printed on them but there was no facility to scan and utilize the barcodes in the warehouse and the assembly line. Hence, the workers had to manually validate the parts before sending them to the assembly line which resulted in unnecessary extra manpower, irregular supply chain process and also rise to human errors as sometimes wrong parts were sent to the assembly line and sometimes parts were missed too.

Client wanted a solution to facilitate barcode scanning present on the major parts and integrate it with the production order in the SAP System. This would help them digitize the solution and also streamline their supply chain operation as this will result in a lesser turnaround time.

Company Background

CGI Inc., also known as CGI Group Inc., is a Canadian multinational information technology (IT) consulting and systems integration company headquartered in Montreal, Quebec, Canada.

Services provided by CGI as of 2018 include application services, business consulting, business process services, IT infrastructure services, IT outsourcing services, and systems integration services, among others. CGI has customers in a wide array of industries and markets, with many in financial services. CGI also develops products and services for markets such as telecommunications, health, manufacturing, oil and gas, posts and logistics, retail and consumer services, transportation, and utilities.

Current Problems/Challenges Faced

- There was no infrastructure to scan barcode on parts that were coming from the vendor.
- Delayed delivery of parts to the assembly line was impacting the delivery time to the customer.
- High manpower and its cost.
- Delivery of wrong parts to assembly line as the validation resulted in human errors.
- Incorrect sequencing of parts delivery to the assembly line. Parts were sent along as they were scanned.
- Unnecessary paperwork in the process resulted in a lot of manual work.
- Poor validation techniques as there was only human validation in the entire process.

Objective/Need/Purpose

The need of this project was to integrate the barcodes on the parts with the SAP system in order to streamline the entire supply chain process and also use this opportunity to digitize the solution. This would reduce the delivery time drastically and also reduce errors.

Methodology

- Developed 2 Fiori Mobile Apps named “Pick List” and “Poka-Yoke”.
- The 1st App generates a barcode of the production order. This barcode contains all the details of the production order bill of material.
- The 2nd app scans the barcode generated from the 1st app and also scans the barcode on the part numbers sent from the vendor.
- Both the barcodes are validated. If the validation passes, the parts are sent to the assembly line.
- If validation fails, the process stops and an error is shown stating that the part does not belong to production order.

Data Analysis/Results

When the project started, we had to determine the areas for improvement. Also, we had to find out what other benefits could be achieved after successfully executing this project. Keeping this in mind we targeted the supply chain area and executed our project.

Upon our analysis, it was found that there were around 9-10 people involved in the entire process of downloading list of parts to transferring the parts to the assembly line. This was costing the organization around Rs.10 Lacs annually.

Our main aim is to target this and get the cost down by 60% and also reduce the labour count that was doing this work.

We analyzed the process accordingly and designed a solution to streamline the supply chain process and also achieve the above targets.

At the end of the project, we were able to bring down the costs by 70% and the total labor required to do this activity was brought down to 2 personnel only.

Implications/Learnings

Due to this project’s implementation, there will other areas in the supply chain that will showcase similar types of problems before the management and request for simplifications. This will lead to more such implementations in other areas of the supply chain process. Also, more ways of utilizing the available systems and tools will take place.

Due to this project implementation, the team will gain experience in different tools and areas of process improvement which will help in future projects. Learning new software techniques will boost their morale and also encourage them to give honest feedback movements, contribution to the company.

- Interface created to scan the barcodes present on the parts reducing the entire process time to 2 hours.
- Parts are validated correctly before consumption using the apps.
- Correct delivery of parts at the right place and right time.
- Human error reduction due to automation.
- Manual labour work performed by 2 fiori applications.
- Increased morale of shop floor users.
- No need to have a barcode scanner as a mobile camera can be used.
- Less paperwork involved in the entire process.
- Automatic label printing on successful validation. No need to make manual markings.

Limitations of the Offered Solutions

- The solution still has paperwork which is generated from the 1st app. In future, we plan to eradicate that and make the entire solution paperless.
- The solution also doesn’t have any notification system to intimate the warehouse personnel about the required parts in the future.

Conclusion

The main objective of this project was to streamline the supply chain process of the manufacturing plant and also to utilize this opportunity to digitize the solution.

The development of the 2 apps has helped us achieve this goal and we were able to do this within 1 month including testing and deployment. The end users are happy with the solution and were involved throughout the development process.

In the future, we plan to implement such solutions in other verticals of the organization so that everything is on the same platform.

Crompton Greaves Electricals Limited

Project Title: Delight… Journey towards Excellence

EXECUTIVE SUMMARY

Abstract

The objective of this project is to share Crompton's transformation journey. A journey towards excellence.

Company Background

Crompton Greaves Consumer Electricals Limited is one of the leading consumer companies in India with a 75+ years old brand legacy. Our expertise lies in manufacturing and selling a wide spectrum of consumer products ranging from Fans, LED Lighting, Water Heaters, Coolers, Irons, Kitchen Appliances and Pumps. We market our products under the "Crompton" brand name in India and in select Export markets and are a 5000+ crore company by revenue. We market our products under the "Crompton" brand name in India and select export markets. Crompton is the most widely distributed fans brand in the country with 80000+ TouTouchpoints Crompton fan is sold every 2 seconds in India making it the largest player by far in the country.

Current Problems/Challenges Faced

To bring change in the mindset of people to drive quality culture.

Objective/Need/Purpose

Bring cultural change across the organization to drive transformation across Crompton, strategic vendors and suppliers.

Methodology

Program management with a focus on 100% employee engagement.

Data Analysis/Results

Tangible:

- *Outgoing Quality:* COPQ, PPR
- *Inhouse Quality:* IQC, TBR, PDI

In-Tangible:

- Competency building
- People development
- Cultural change

Implications/Learnings

- Reactive to proactive approach
- Stakeholder management
- Communication management
- Effective risk handling

Improvements, Contribution to the Company

Tangible:

- *Outgoing Quality:* Reduction > Breakthrough improvement (measured in % vs baseline).
- *Inhouse Quality:* Reduction > Double digit improvement in % (measured in % vs baseline).

In-Tangible:

- Competency Building.
- *People Development: Internal* mentors and change agents' development.
- *Cultural Change:* Reactive to a proactive approach.

Limitations of the Offered Solutions

Focus on Crompton's strategic vendors and suppliers' units.

Conclusion

This is one of the successful programs in line with Crompton's strategy.

ONB Technologies India Private Limited

Project Title: PRATIBAADH

EXECUTIVE SUMMARY

Abstract

We operate in the automotive aftermarket e-commerce industry. We interact with integrated functions such as sales, marketing, technology development, human resources, and others. The current problem or challenge is that we are dealing with a non-standardization process due to a lack of quality management systems and the uncertainty of working to achieve the goals. Identifying and determining areas for improvement. There is also a need to look for ways to improve processes, products, and services on a continuous basis. This project will explain how expansion has done business in a number of cities, operating the ambassador during the service delivery with the help of the channel partner concept. Day-to-day data consideration and MIS reporting concept to achieve Low touch operation. Implementing risk management and business continuity plans, especially during the surge days, the entire system and the process implementation were done with the help of the QMS 9001 certification procedure and were also successfully certified.

Company Background

21North Europ Assistance, the only global vehicle ownership lifecycle assistance platform, continues to reimagine the auto after-market industry to the benefit of global auto and auto-related brands, assistance professionals and consumers. 21North Europ Assistance delivers the quickest, safest and most innovative vehicle assistance service, products and technology by combining location-based services, real-time data, artificial intelligence and end-end connected communication. Our platform powers vehicle assistance solutions for leading brands across the automotive, insurance, fleet companies and corporates.

Current Problems/Challenges Faced

The current problem or challenge is that we are dealing with a non-standardization process due to a lack of quality management systems and the uncertainty of working to achieve the goals. Understanding activities as processes that connect and function as a system is disorganized. Identifying and determining areas for improvement & Implement Low Touch Operation.

Objective/Need/Purpose

The scope of the project is to implement the process standardization inherent quality management system to achieve the objectives and plan.

- Gap Assessment
- Low Touch Operations
- Expansion of Business to other cities
- Implement Risk Management & Business Continuity Plans
- Control on Quality of Service Provided

Methodology

DMAIC

Define the problem, improvement activity, opportunity for improvement, project goals, and customer (internal and external) requirements.

Measure process performance.

Analyze the process to determine the root causes of variation and poor performance (defects).

Improve process performance by addressing and eliminating the root causes.

Control the improved process and future process performance.

Data Analysis/Results

We have created a strong reporting mechanism because we strongly believe that any management system that runs behind metrics has sustainable growth. So, we implemented a daily and weekly MIS reporting mechanism. Monthly data analytics using BI Dashboards for all functions to keep on target at the functional level, tracking the objectives and indicators at the planned intervals.

Implications/Learnings

Organize the processes in a logical manner that reflects 21North's operational and business practices. Improve the efficiency of processes through the application of risk-based thinking and the PDCA cycle. Continually improve performance and effectiveness through the use of quality objectives and process-level KPIs. Create a business environment with an effective management system that results in satisfied customers, management, and employees.

Improvements, Contributions to the Company

- Business Model Transformation
- Expansion of business to 17 cities
- Expansion in 3 Cities with Low Touch Operation
- Remote City Launch
- Data Forecasting
- Risk Mitigation
- Process Transition from Manual to Automation
- Technology Adoption

Limitations of the Offered Solutions

Implementation of Quality Management System, Well Defined Processes & Automated MIS.

Conclusion

In the current trend as an associated automotive aftermarket e-commerce industry, we have a tendency to move with integrated functions in areas like operations, sales, marketing, technology development, human resources, and others. Understanding activities as processes that connect and performance as a system is disorganized. Distinguished and decisive areas for improvement. There's also a necessity to look for tactics to enhance processes, products, and services on a nonstop basis. This project can make a case for how growth has done business in a variety of cities, operative the ambassador throughout the service delivery with the assistance of the channel partner concept. daily information thought and MIS reportage concept. With the assistance of the QMS 9001certification procedure, the whole system and the method implementation were finished with the help of the QMS 9001certification procedure and were also successfully certified.

Vodafone Idea Limited

Project Title: Warehousing and Inventory Excellence

EXECUTIVE SUMMARY

Abstract

A prominent inventory is considered a core component of the supply chain and is where all areas of the supply chain come together in tandem. Supply Chain Digital explores why inventory management in the supply chain is the key to sustained success.

Fulfillment is at the heart of the customer experience and gets to what really matters. It drives loyalty and ensures customers return to your business. In order to grow, it's important to keep the promises you make and deliver orders efficiently. It's vital that companies with complex supply chains and manufacturing processes strike the right balance of inventory size.

Company Background

It is India's leading telecom service provider. The Company provides PAN India Voice and Data services across 2G, 3G and 4G platforms. With the large spectrum portfolio to support the growing demand for data and voice, the company is committed to delivering delightful customer experiences and contributing towards creating a truly 'Digital India' by enabling millions of citizens to connect and build a better tomorrow.

The Company is developing infrastructure to introduce newer and smarter technologies, making both retail and enterprise customers future ready with innovative offerings, conveniently accessible through an ecosystem of digital channels as well as an extensive on-ground presence.

Current Problems/Challenges Faced

- High cost of material is part of Inventory. High Inventory results in blockage of Capex and high Inventory holding cost.
- In VIL material is purchased in bulk and needs to be dispatched to individual sites and locations as per the site rollout plans. While procuring the material Various Govt. licenses and approvals are involved.
- Apart from this we are also dealing with tradeable items like Sim cards where last mile distribution is also to be ensured to make sure that "Speed To Market" is maintained and we are ahead of the competition.

Objective/Need/Purpose

- Warehouse consolidation for better control over Logistics.
- Surrender of physical area for better cost savings.
- Optimization of Inventory in order to ensure that not only site rollouts happen unhindered but also in WH excess material is not lying.
- Timely movement from WH of Inventory.
- Better WH residency.

Methodology

- We initially defined the warehousing model per Circle. This is important as every Circle and every geography is different.
- We set inventory targets per Circle for various Inventory buckets. These Inventory targets were monitored fortnightly and complete attention was paid to ensure that Circles are progressively moving closer to the targets.
- We further worked on Standardization of process to ensure that every Circle is working with respect to defined guidelines.
- Finally, we ensured compliance through the implementation of one ERP.

Data Analysis/Results

Warehouse Area requirement analysis, Inventory planning from procurement to dispatch, availability of timely material at WH and on site, ensue to have SIM from supplier to retailer desk.

Implications/Learnings

Achieved 61% area reduction

Achieved 59% Inv. reduction

Improvements, Contributions to the Company

Tangible Savings which Organization will have Year on year i.e., on account of warehouse rent due to reduced WH area, reduction on account of operations cost including manpower, security, and other overheads.

Limitations of the Offered Solutions

- Telecom equipment are mainly imported, supplier-driven market, requiring various Government licenses permission. This may lead to storing more material by taking advance delivery etc.
- WH and Inventory depend upon the User function approach towards it.

Conclusion

Inventory management and warehouse management are two facets of managing stock. Inventory management provides a high-level view, while warehouse management focuses on the details of the movement of stock.

Inventory Management

- Focuses on overall inventory levels and their statuses.
- Provides information to calculate sales trends, profit margins and holding costs.
- Determines reorder points based on demand and preferred stock levels.
- Shows the inventory record and the store's inventory availability status for fulfilment.

Warehouse Management

- Tracks the movement and location of stock within the warehouse.
- Analyzes sales trends, profit margins and holding costs.
- Reveals opportunities to streamline tasks.

Inventory is cash so from procurement > to supply > till deployment at site need end-to-end management is done.

Timely deployment and start functioning of the equipment purchased will lead to an increase in the revenue of the organization.

Vodafone Idea Limited

Project Title: Vendor Compliance Governance and Automation

EXECUTIVE SUMMARY

Abstract

VIL is committed to achieving the highest standards in Work Ethics, Code of Conduct, Integrity, and Safety. We always expect 100% compliance from the partners/stakeholders as well.

A place holder is created in the centralized server where the Supplier can view the uploaded mandatory policies.

Also, these uploaded policies are available to them in 'Read Only mode' i.e., no download/print/copy etc. is allowed. Suppliers can read the policies and accept it and submit the acceptance template duly signed and stamped for future reference. The system has the facility to trigger a notification, send reminders, upload documents, publish reports for internal use etc.

Company Background

VIL is India's leading telecom service provider. The Company provides PAN India Voice and Data services across 2G, 3G and 4G platforms. With the large spectrum portfolio to support the growing demand for data and voice, the company is committed to delivering delightful customer experiences and contributing towards creating a truly 'Digital India' by enabling millions of citizens to connect and build a better tomorrow.

The Company is developing infrastructure to introduce newer and smarter technologies, making both retail and enterprise customers future ready with innovative offerings, conveniently accessible through an ecosystem of digital channels as well as an extensive on-ground presence.

Current Problems/Challenges Faced

- Manual Policy acceptance by the vendor which resulted in difficulty in tracking and tracing documents.
- Quick closure of audit was an issue since manual showcasing of records was a challenge.
- Manual tracking of compliance with respect to vendor compliance and also internal compliance was a concern.
- Manual validation and collection of documents in the local repository which is a potential risk as documents could be lost if the local device gets corrupted.
- People dependent process and was decentralized leading to a dependency on multiple people across PAN India.
- Lots of paper generated which is non-digital and not eco friendly.

Objective/Need/Purpose

In the Vendor onboarding process, it is mandatory that suppliers must accept all our mandatory policies regardless of the risk category based on the nature of services they provide. Currently, circle buyers share policies with Suppliers, and they accept policies and give declaration in survey form as Yes/No. Since there is no evidence that the vendor has read the policies before acceptance, we have designed and developed a Policy Compliance Portal which facilitates suppliers to read the policies and accept them. They also must give their sign-off on the policy acceptance documents which are recorded as evidence in the system for all future query purposes.

Methodology

We followed agile methodology to execute this automation.

- Scoping of the project
- Gathering our all requirements
- Identifying the implementation partner
- Sharing our requirement
- Weekly SCRUM calls
- Scoping the automation
- UAT
- IT security check and Risk closure
- Final implementation of the system
- Training and SOP rollout

Data Analysis/Results

- Identified application which can be modified as external facing and accessed by Third Party Suppliers.
- Continuous brainstorming for functionality which makes this system user-friendly and easy to access.
- Project scoping was done from scratch, and this is a completely in-house development.
- Conducted Various sessions with the technical team to develop all the precise requirements.
- UAT was conducted in various phases to identify the proper functionality of the tool and adopted the easiest ways to get it more effective.
- Conducted training sessions (3 times) to make users and commercial teams aware of the portal.
- Prepared User manual for Suppliers and circulated to respective SPOC to share further.

Implications/Learnings

VIL is committed to achieving the highest standards in Work Ethics, Code of Conduct, Integrity, and Work Safety. We always expect 100% compliance from employees, partners/stakeholders. This portal will help us to provide and maintain a fair, safe, and healthy working environment for employees, associates, customers, partners, and contractors with VI.

Improvements, Contribution to the Company

- Periodic communication to Suppliers
- Authentication & confirmation on compliance
- Digital Footprint
- Reduce manpower
- 100% Policy Compliance
- Data Leak Prevention of Policies

Limitations of the Offered Solutions

This is web-based module, in absence of server or data connectivity issue this module will not be functional

The module also needs a mindset to Change management and hand holding of Suppliers till a steady state is achieved.

Conclusion

We are able to migrate from a manual tracking process to a web-based solution which provides the following advantages:

- Provides and maintains a fair, secure environment for partners & contractors.
- Moving towards Organization's goal of 'Going Digital'.
- Ease of use for both internal and external stakeholders.
- "Single Compliance Window".
- Compliance with VI organizational policy.
- Robust Governance.
- Excellent reports and dashboards.

INDUSTRY 4.0
&
ANALYTICS

CGI Information System and Management Consultants

Project Title: CGI MIG Hyper Reality

EXECUTIVE SUMMARY

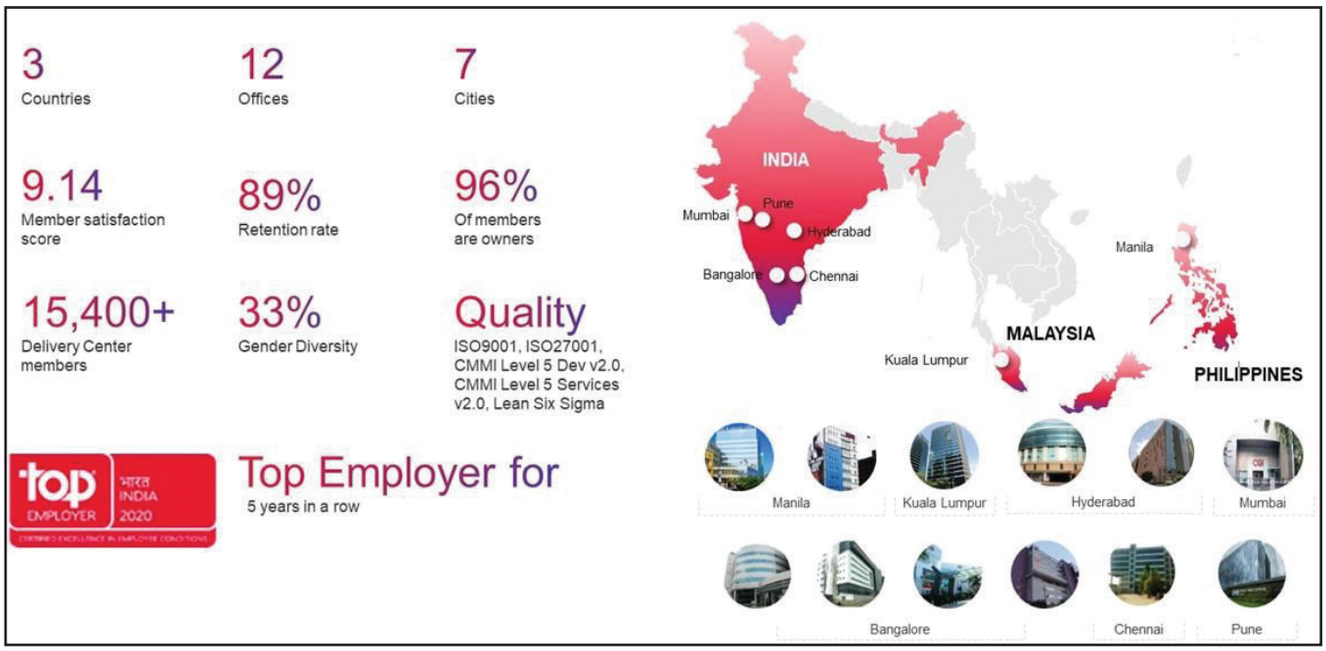
Abstract

In today's remote collaboration era, engaging the clients on a deeper level to provide an immersive experience of the service and product capabilities, value-adds, facilities, IPs is a real challenge across industry.

- Digital disruption has accelerated innovations such as AR, VR and XR.
- Remote diagnostic, training, and immersive tour of the significantly risky work environments such as Oil well, manufacturing plant etc.

Company Background

CGI is a global end-to-end IT and business process services leader.



Current Problems/Challenges Faced

Why-Why Analysis:

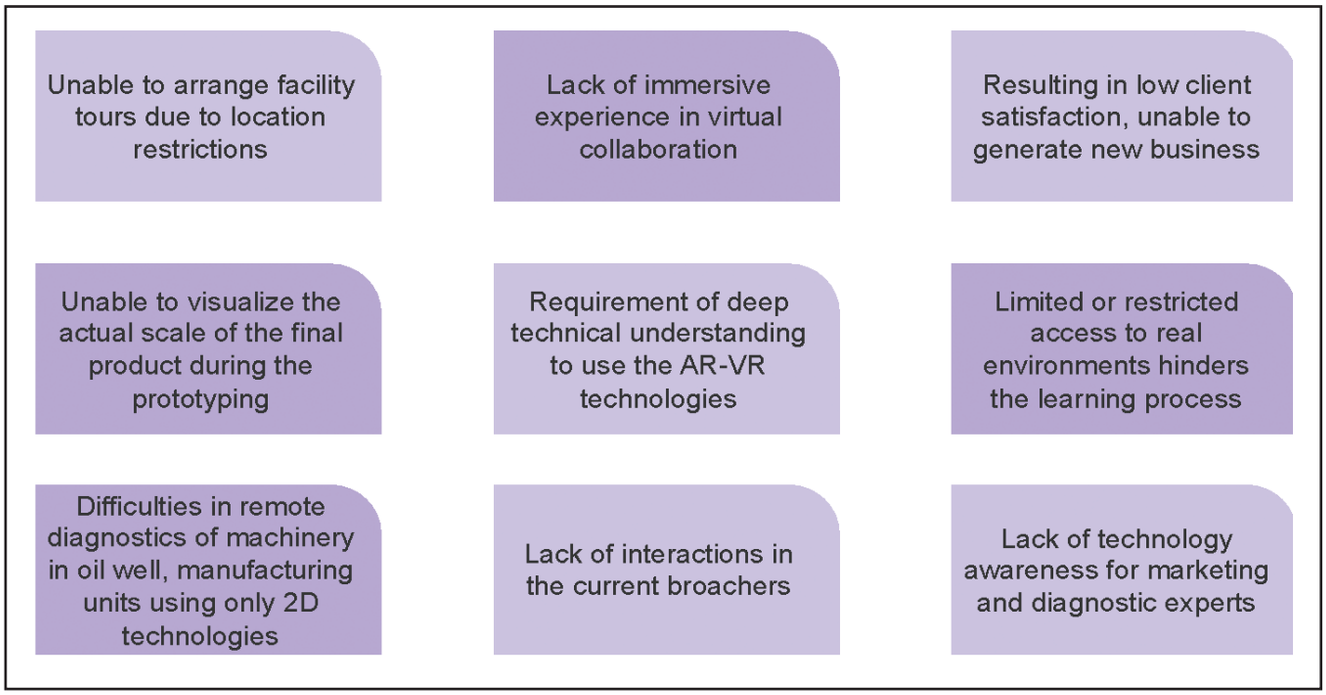
Why 1: I am unable to visualize the product.

Why 2: Product is not available physically with me.

Why 3: Either the product is not created, or local presence is not available.

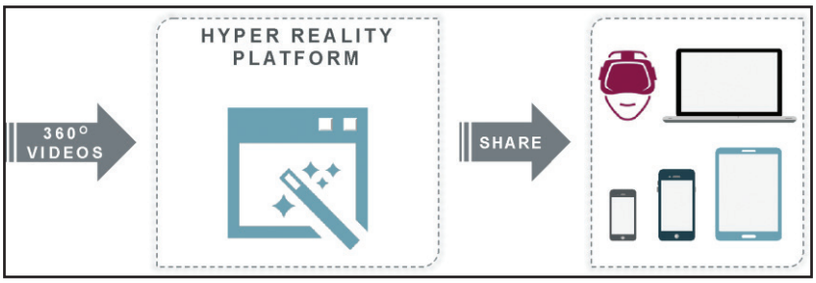
Why 4: We are at the early stage of the product development, or I am unable to travel to experience the product.

Root Cause: Unavailability of a solution to visualize the product when it is under development or not available locally.



- Lack of immersive experience in the virtual collaboration world.
- Struggling to generate new leads through the virtual client visits.
- Industries are unable to showcase their manufacturing plants to potential clients.
- Unable to troubleshoot the problems remotely and restrictions on site visit will introduce delays.
- New member training on potentially risky environments such as Oil well, Manufacturing plants is difficult.
- 2D illustrations, videos, images not depicting the real picture and resulting in rework.

Objective/Need/Purpose

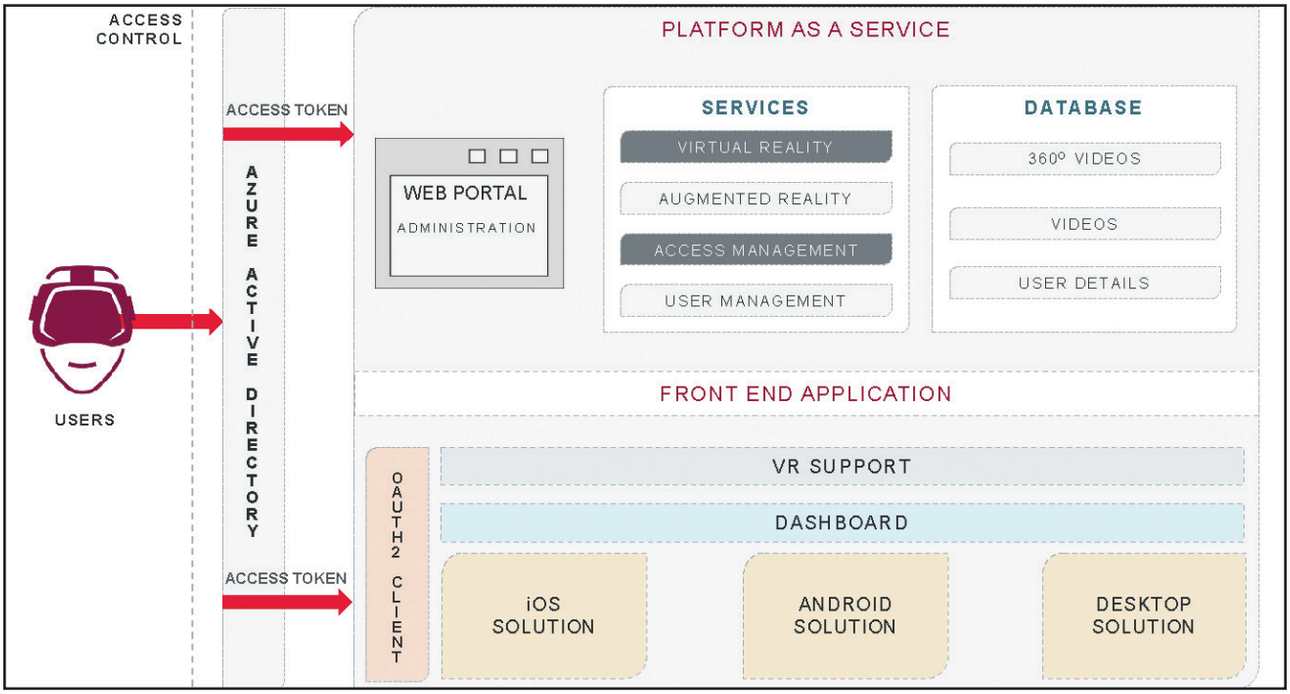


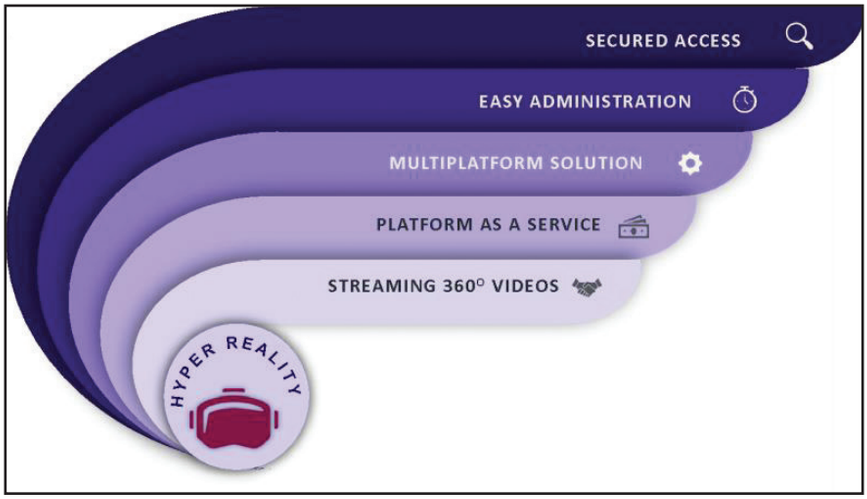
Hyper reality platform enables the virtual environment creation using VR headsets and can create a long-lasting immersive experience.

- New business can be generated by showcasing the capabilities, IPs in virtual reality.
- Potential clients can have a virtual tour around the manufacturing unit with real time narration and experience the quality and delivery capabilities.
- Using Augmented reality, the experts across the world can diagnose and troubleshoot the problems.
- Training members in virtually with real time experience of the Oil well, heavy machinery and other potentially risky environments is safer.
- 3D modelling of the sketch, initial designs can be used to study the product/result in early stages and help reduce the rework effort and cost.

Methodology

Architectural Diagram:





SECURED ACCESS

- Enterprise login
- Single Sign On for CGI internal users
- Seamless user management for external and internal audience
- Time bound user access control

EASY ADMINISTRATION

- Web portal for platform administration
- Time based access control for external users
- Options to publish the videos for internal and external audience

MULTI PLATFORM SOLUTION

- Solution is compatible with desktop, web and mobiles
- Separate app for Android and iOS devices

STREAMING 360 VIDEOS

- Seamless streaming of 360° videos of the facility, interactive floor walk, etc.
- Videos supported to be streamed on VR glasses as well as in desktop

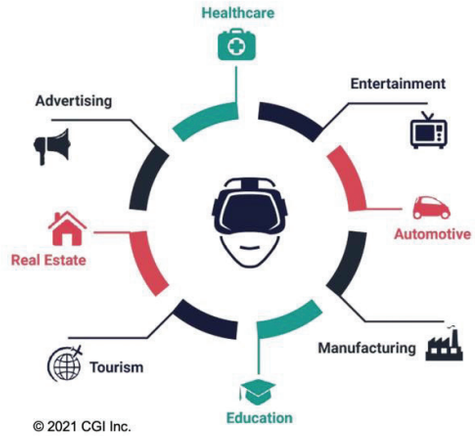
PLATFORM AS A SERVICE

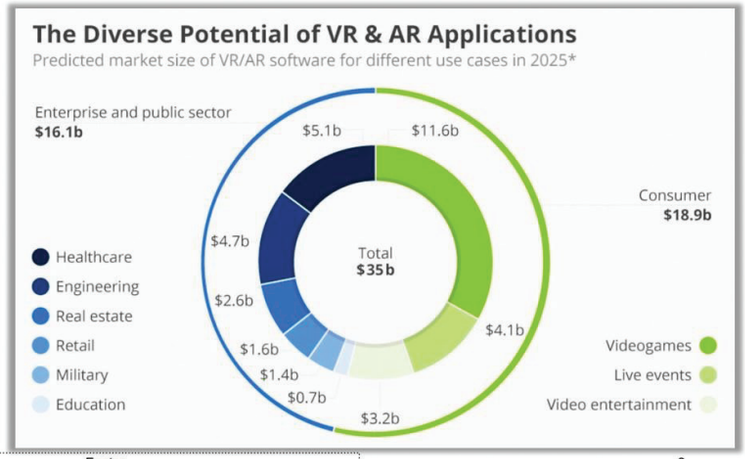
- Secure solution
- Customizable immersive virtual client visits
- Convert the regular broachers into an interactive broacher

Data Analysis/Results

How AR & VR transforming the industries?

> The power of AR/VR is being harnessed to transform the process of prototyping, product design, manufacturing, promotion as well as experience of customers across the industries.





Footer 9

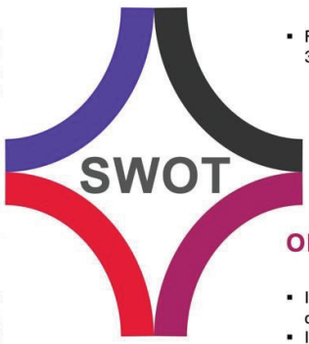
SWOT Analysis

STRENGTH

- Enhances user experience and effectiveness of the virtual demo & presentations
- Seamless support to multi-platform and ease of use
- Easily customizable solution for different needs

WEAKNESS

- Full potential of the platform can be utilized through well crafted 360° videos



THREAT

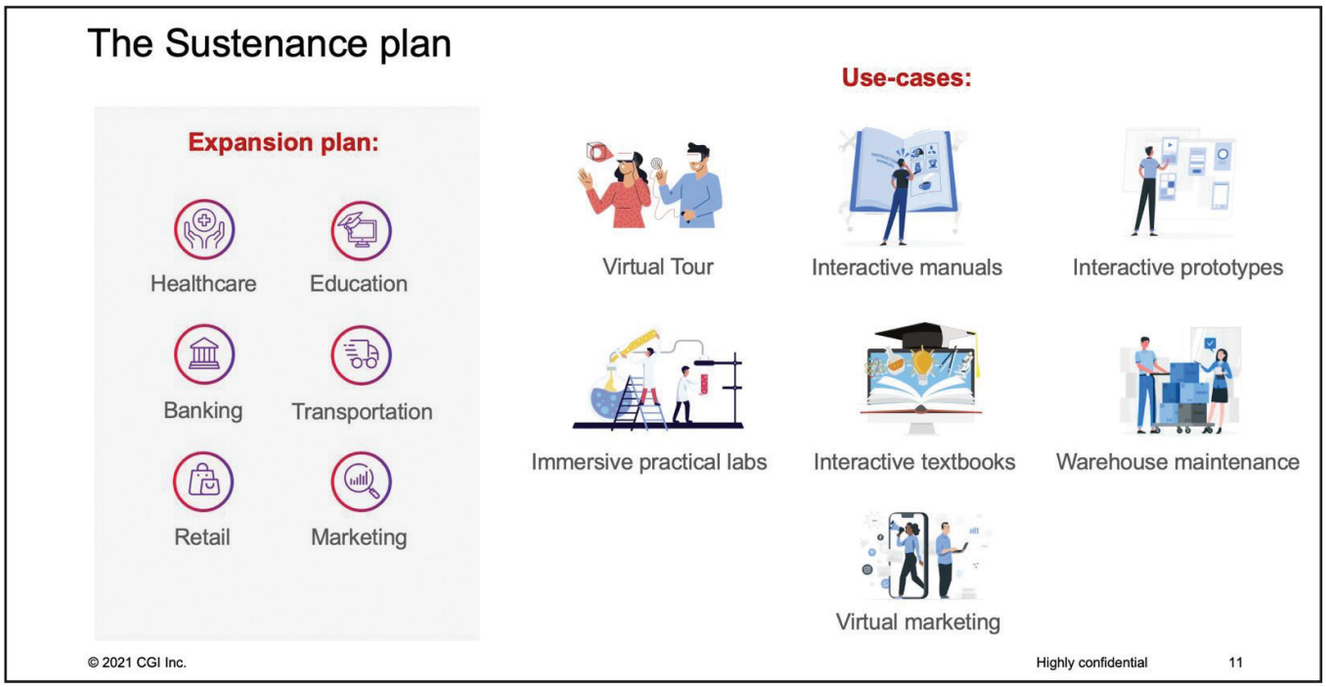
- Due to the recent need to improve the virtual collaboration, all the organizations are planning to create similar platform
- The short time-to-market of the product

OPPORTUNITIES

- Industry experiencing an accelerated demand for efficient virtual collaboration across industries
- In all the vertical domains such as Manufacturing, Retail, Financial services, Healthcare, every product requires a coherent AR-VR based modelling
- Create a high customer experience to showcase our own IPs

Footer 11

Implications/Learnings



- Enabled the potential clients of CGI as well as multiple manufacturing clients to arrange the virtual tour around them manufacturing unit, IT facility, which eliminated the risk of travelling, reduced the health and safety hazards as well as saved the travelling expenses.
- Enabled the pre-sales and marketing team to narrate the handouts and broachers using AR headsets.
- Created multiple interactive manuals that can be used to see the machinery through the AR app to know about the correct usage of the machinery.

Improvements, Contribution to the Company

Enabled the organization to generate 20 new leads in last 4 months by creating a long-lasting experience.

- Helped to visualize the product in real life scale for multiple manufacturing clients in early stages of development and reduced the rework effort by 80%.
- Improved the efficiency of the prototyping process by 50%.
- Enabled the experts across the world to diagnose and troubleshoot the problems in a remote manufacturing plantand reduced the cost by 25% and eliminated the effort of traveling to the site.
- Enables effective training of new members. A big manufacturing company trained 300+ members using the Hyperreality platform.

Limitations of the Offered Solutions

- Cost of the initial setup.
- Dependency on well-crafted AR setup.

Conclusion

The power of AR/VR is being harnessed to transform the process of prototyping, product design, manufacturing, promotion as well as experience of customers across the industries.

Our platform is helping the clients achieve the next generation communication and visualization platform.

Vodafone Idea Limited

Project Title: INNOVATION – AI/GA Use Case - Intelligent Transport and Contract Management System (ITCMS)

EXECUTIVE SUMMARY

Abstract

ITCMS system is an end-to-end transport management system designed by Vodafone Idea Ltd (VIL) team. This is proprietary IT platform of our company.

This module uses concepts of Artificial Intelligence (AI) & Genetic Algorithm (GA). Genetic algorithm based on Darwin's theory of the fittest is the bedrock of its implementation. This implementation of this system has optimized transport spend by 5%.

- This system handles all aspects of transport management right from contracting, load planning, vehicle requisitioning, route planning, vehicle tracking, automated invoicing.
- HSW – Health Safety & Well-being aspects monitoring like Over speeding, night driving, continuous driving. The module provides fastest and most optimized logistics plan taking minimum cost and least time to increase logistics efficiency.
- The system's Vehicle Selection and route planning tool considers Volumetric Efficiency, Weight Efficiency of material and distance of the sites to be dispatched and number of dispatches to be clubbed.
- The system enhances the overall governance of Transportation, Logistics & Safe operations by providing end to end visibility of all the transactions from contracting to LR generation to Site delivery, billing, and Payment processing.

Company Background

Vodafone Idea Limited uses the power of technology to enhance our customers' lives – through ubiquitous presence and connectivity through our PAN India urban and rural coverage, a continuously expanding 4G LTE network, integrated worry free propositions and some of the best entertainment on mobile – all packaged into a completely unmatched customer experience Our innovative and truly differentiated offerings – be it our Prepaid Unlimited propositions, RED Postpaid plans, Truly Unlimited International Roaming products and many others - reflect the passion with which we aim to serve our customers and be together for tomorrow.

Current Problems/Challenges Faced

There was a need for automation due to very high average monthly dispatches of ~7500 vehicles from 30 Warehouses. There was manual vehicle & route planning for such a large volume of dispatches and no scientific method for journey and vehicle planning. Moreover, logistics visibility was missing and there was a need to make logistics more transparent and reliable. Along with this, manual billing was a challenge for the Warehouse manager to validate and approve and billing irregularities were a norm which needed to be fixed.

Objective/Need/Purpose

- To reduce the overall Transportation Cost by planning shortest route and optimum number of vehicles using AI based algorithm – best option rationalization.
- Enhance Validation for Invoice Approval.
- To drive HSW compliance by ensuring safety inspection of Driver & Vehicle deployed for transportation and live tracking of vehicles.

Methodology

- *Requirement Gathering and Documentation:* In this stage, we gathered comprehensive information about what this project requires.
- *User Research:* We conducted 3 workshops at different warehouses and conducted stakeholder interviews with drivers, transporters, security guards and prepared a storyboard.
- *Solution Blueprint:* This included brainstorming, partner engagement, programming vendor onboarding and agreement on final deliverables.
- *Prototyping:* In this stage, we did task flow finalization, wireframes and visual iterations for better UI/UX.
- *Testing:* Rigorous month long UAT in pilot circles.
- *Delivery/Deployment:* Rollout of the module across 30 Warehouses
- Maintenance.

Data Analysis/Results

To provide a perspective of how ITCMS has substantially impacted Warehousing and Logistics daily operations is best explained through a real live case scenario.

Real Live Case: On 22nd Jun 2021 in Maharashtra at Pune WH, there was a business requirement of dispatching network material to 110 cell sites within the state of Maharashtra such that each cell site is visited exactly once for delivery or pickup. To find the shortest and most optimum path to be taken - The easiest and most expensive solution is to simply try all possibilities manually. The problem with this is that for 110 cell sites you have (110- 1)! Possibilities = 109! which in itself is a huge 177 digit number. It is humanly impossible for the Pune Warehouse Manager to find a shortest path and most optimum vehicle type for delivery to those 110 sites, with required clubbing. There is no manual method till now that can solve this problem in polynomial time.

Through ITCMS, it literally did not even take one second to find a complete dispatch plan for the best possible route with the most optimum type and number of vehicles such that the volumetric efficiency is not compromised.

Implications/Learnings

Completing a project of the magnitude of ITCMS has been a huge learning for all of us at VIL who were associated with this project right from design stage to implementation stage. Initially, we thought we had our bases covered w.r.t. scope and timelines of the project but as we went ahead with the solutioning part, we realized that stakeholder participation and clear assignment of responsibilities was most important for the project to be a success. ITCMS required joint collaboration from various functions like IT, SCM, Finance within VIL who all teamed up seamlessly to realize the goals. The key learnings from the project for us as a team was that communication was vital and it was essential to have clear roadmaps across functions and stick to the timelines as we had not hired any consultant for this project and were managing it in-house. It was important to keep the programming vendor also aligned and make them understand the business ground-up for them to devise and crack the right “code” (literally) for the project.

Improvements, Contribution to the Company

ITCMS addresses a critical business requirement of vehicle and route planning for a monthly PAN India average of 7500 vehicle trips from multiple dispatch locations (30 warehouses spread PAN India) to existing or new cell Sites for 3G/4G Rollout. Our company has over 300,000 such sites. Our endeavor is to club multiple site supplies in each vehicle as much as

possible and follow the quickest route to deploy our network resources. Key Contributions to company are as below:

- Logistics Cost reduction (~5% of freight cost).
- Time and efforts saving (~*3,000 Man-hours saving till now).
- HSW Violations – Reduced by a staggering 96%.

Limitations of the Offered Solutions

An automation solution always comes with an initial investment that needs to be recovered by the business through increasing efficiency in operations. Fortunately, ITCMS has been able to deliver on the business goals we set out for. However, with every automated solution there is loss of flexibility to modify workflows, tasks and may become rigid over time which will require continuous reinvestment in changes to be implemented.

Conclusion

The logistics problem at hand was unsolvable manually due to the number of permutations and combinations involved but automation and use of AI has helped to solve the seemingly unsurmountable problem.

Overall, ITCMS has turned out to be a one of its kind human-tech collaboration to reimagine, reinvent and recalibrate previously unchallenged ways of working and effect a game changing solution to a complex and insuperable logistics problem.

Vodafone Idea Limited

Project Title: Cost Management by Automation in the Area of FOC Obligation Management

EXECUTIVE SUMMARY

Abstract

A contract is the legal document, and it is being considered an essential element of the supply chain and it covers all areas of the supply chain come together in sequence to ensure the seamless operations. Supply Chain digital has explored Contract Management module for Cost Management by Automation in the area of FOC Obligation Management is the key to sustained success.

Enchantment is at the essential of the business process, customer experience and gets to what really matters. It drives system controls and ensures compliance, improve the seamless customers experience return to your business. In order to grow, it's important to keep the promises you make and deliver orders efficiently. It's dynamic that companies with complex supply chains and processes monitor the accurate balance of contractual term and conditions to utilize the free of cost goods and services.

Company Background

It is India's leading telecom service provider. The Company provides PAN India Voice and Data services across 2G, 3G and 4G platform. With the large spectrum portfolio to support the growing demand for data and voice, the company is committed to deliver delightful customer experiences and contribute towards creating a truly 'Digital India' by enabling millions of citizens to connect and build a better tomorrow. The Company is developing infrastructure to introduce newer and smarter technologies, making both retail and enterprise customers future ready with innovative offerings, conveniently accessible through an ecosystem of digital channels as well as extensive on-ground presence.

VIL with strong assets, digital focus, and solutions ready architecture, we are well positioned to complete.

- Vi GIGA net is India's fastest network (OoklaSpeed test Award2).
- Best Voice Quality for out of 12 months (TRAI MyCell Dashboard3).

Current Problems/Challenges Faced

In VIL material is purchased in bulk and need to be issued for PAID & FOC both type of purchase order to vendors for supply of materials as per the site rollout plans. After receipt of materials at warehouse as per the contract T&C quarterly reconciliation to be conducted.

- Manual FOC reconciliation on quarterly basis took more time and there is chance of error.
- Price, payment term, T&C maintained manually.
- Manual Contract to PO price reference.
- Manual reconciliation of Contract Vs issued PO to vendors.

Objective/Need/Purpose

- System based Contract to PO reconciliation.
- System picks automatic rates, payment term and T&C from Contract in POs.
- System based linkage of Contract to PO.
- System based reconciliation of Contracts to PO.

Methodology

- We introduced contract management module for PAN India Contracts registration in SAP. Subsequently via using unique contract ID user can create the BOQ/PR and from PR to PO rate, Payment term, T&C etc. automatically picks in POs.
- Corporate commercial category mangers provide contract and price book details to SSC Commercial and post validation of data SSC team prepare Contract uploader template and register all the same into Contract management module.
- Once contract is registered in Contract management module. We get system generated Outline Agreement number (OLA ID) and same we shared with Contract manager. Further they share the registered contracts details with their respective user team for BOQ/PR and PO Creation.
- We further worked on Standardization of process to ensure that every Circle is working with respect to defined guidelines.
- Finally, we ensured compliance through implementation of Contract management module in SAP.

Data Analysis/Results

In the Contract management module, we have developed robust reports to get the real time inputs from system for data analysis which gives real time insightful information to business.

- *Contract to PO Reconciliation Report:* This report provides system based Contract to PO reconciliation statement for all registered contracts and reconciliation balance available basis PO.
- *Contract Consumption Report:* This report provides visibility of Contract Consumption at BOQ, PR, PO, GRN & INVOICE level.
- *Contract Expiry Report:* This report provides details of all Contracts which are due for expiry.
- *Contract Amendment Report:* This report provides details of all changes which has been made in OLA at line-item level or at header level along with the old and new values.

Implications/Learnings

100% Technology contracts has been registered into Contract management module.

Improvements, Contribution to the Company

All technology contracts have been covered in Contract management module and users/buyer is using this module seamless for BOQ/PR and PO transactions processing. Subsequently, Business is also getting real time Contract to PO reconciliation report from system. It has saved the time & efforts of user and buyer. It also provides accurate system generated reconciliation.

Limitations of the Offered Solutions

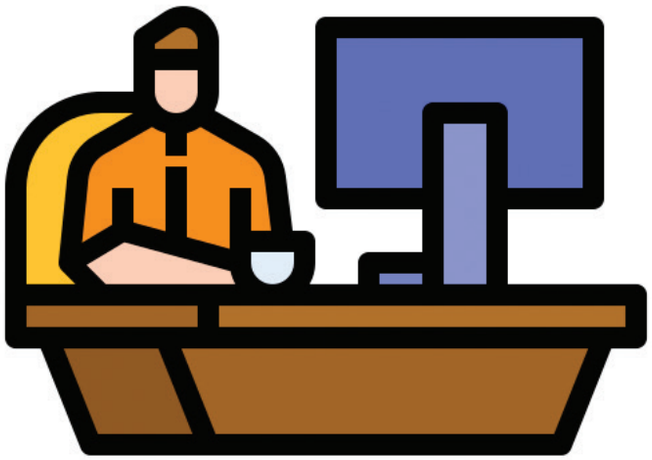
Minimum manual intervention for adjustment of debit note Credit note etc.

Conclusion

The purpose of Contract management module is to bring the system-based validation for FOC PO reconciliation for contracts with vendors. Based on the analysis conveyed and conclusion are mentioned below:

- System based Contract to purchase order reconciliation.
- System picks automatic rates, payment term and T&C from Contract in POs.
- System based linkage of Contract to POs.
- System based reconciliation of Contracts to purchase orders.

GENERAL MANAGEMENT



JSW Global Business Solutions Limited

Project Title: Letter of Credit and Bills of Exchange Process Transformation

EXECUTIVE SUMMARY

Abstract

Systems and processes have always been the backbone of JSW Group philosophy in existing organization in manufacturing domain, group companies are invested in best possible IT technology, quality, and compliance management, ensuring data integrity in finance domain falling in line.

Evolution from a paper-based system to digital systems led to the emergence of regulations and guidelines such as UCP rules RBI, Sec 10(2) of Payment & Settlement Systems Act, evolving further.

Financing trade receivables sits at the heart of the relationship betweenbanks and corporates. Although this is a business characterized by good margins, it is one of huge volumes by 2026, trade flows are predicted to reach US$24 trillion globally.

Given this growth trajectory, banks have identified trade finance as a critical pillar of their future business strategy. However, market growth alone is not the only ingredient for success.

How can corporate be ready for this digital journey? What are the challenges of digitizing the front end of trade finance? How will the “digital worker” mimic, sense, comprehend and act like a human? To answer these questions, JSW GBS explored how combining proven market technology RPA with AI and machine learning can help master key challenges in trade finance.

Company Background

The JSW is known across the country as “strategic first mover” It is $13 billion leading conglomerate, with a presence across all the vital sectors of the Indian economy.

JSW Global Business Services is a subsidiary of JSW Group situated at Belapur, Mumbai, the shared services center supports multiple businesses such as Steel, Coated, Cement, Energy, Infrastructure, primarily delivering F&A processes.

We are a captive Shared services for JSW group covering F&A, procurement, and HR Operations for 7 Business and 30 Locations.

JSW GBS is embarking on a transformation program as part of its productivity agenda by leveraging RPA.

Current Problems/Challenges Faced

- Delayed payments and acceptance of bills from customer 30+ to 90 days.
- High lead time for working capital and interest of 15% above.

- Manual process and paperwork co-ordination.
- Long transaction turnaround times 7 to 8 days.
- High handling and storage costs.
- High error rates associated with manual document verification.
- Lack of process standardization.
- Operational risks due to highly manual processes.

Objective/Need/Purpose

- Reduction in Working Capital cycle time to 15 days.
- Digital LC BOE documents.
- Business Continuity.
- Saving of Bank Charges due to discrepancies.

Methodology

Project Management

- Phase 1 – Assess for RPA Opportunities
- Phase 2 – Select a Vendor
- Phase 3 – Capture Process Steps, Pilot, and Implement
- Phase 4 – Manage the RPA Lifecycle DMAIC

Data Analysis/Results

- Histogram - Pareto Chart
- Scamper Analysis
- 360-degree impact assessment
- 5' A
- Cause and Effect – 4M

Implications/Learnings

- RPA AI Learning in reading LC standard terms - Process improvement or cognitive capabilities. "RPA is not a cognitive computing solution".
- Lack of creativity - It can only understand programming languages, not processors.
- Setting realistic expectations - Obstacles when it comes to implementing a new technology such as RPA. Instead of seeing RPA as the panacea for operational problems and broken processes, organizations need to recognize the limits of what RPA can and cannot do.
- Choosing the right processes - The automation capabilities provided by RPA are ideal for tasks that are repetitive, rules-based, high volume, and do not require human judgement.
- The complexity of implementation in RPA.

Improvements, Contribution to the Company

- Business Continuity with RPA.
- Improved Cash Flow and Working Capital 5 - 6% instead 12% above.
- Digital process.
- Saving of Bank Charges.
- AHT improvement and FTE Savings.

Limitations of the Offered Solutions

- RPA Projects needs regular reconfiguration as per change in rules, process.
- Manual controls and management bots batch processing.
- Time to implement system.
- RPA requires structured data.

Conclusion

To be an industry leader, organization should embrace RPA, ML to switch their finance operations to auto-pilot. It will soon be the only way to remain competitive in this growing but challenging times.

JSW began its pilot digital initiative in 2017 through implementation of Athena project, these pilots have helped drive an EBITDA impact of over Rs.1,200crs as of Mar21.

JSW GBS Finance has adapted the digital drive in early 2018 by leveraging RPA and ML in complex process in finance domain established COE to standardized & govern the design, development, and support of bots across various functions.

ONB Technologies Private Limited

Project Title: HR: From Business Enabler to Business Driving Function

EXECUTIVE SUMMARY

Abstract

We strongly believe people are the greatest asset of any organization. 100% of investors are people, 100% of clients are people, and 100% of employees are people, so, companies exist for people and are run by people. HR function firmly believes we can transform people to their fullest potential to get profits.

Company Background

21North Europ Assistance, the only global vehicle ownership lifecycle assistance platform, continues to reimagine the auto after-market industry to the benefit of global auto and auto-related brands, assistance professionals and consumers. 21North Europ Assistance delivers the quickest, safest and most innovative vehicle assistance service, products and technology by combining location-based services, real-time data, artificial intelligence and end-end connected communication. Our platform powers vehicle assistance solutions for leading brands across the automotive, insurance, fleet companies and corporates.

Current Problems/Challenges Faced

Ability to develop people expand a business, go beyond geographies, play to strengths, identify talent, build teams, develop sustainable relationships with all stakeholders, nurture employees, and taking organization to next level in a meaningful manner.

Objective/Need/Purpose

Streamline all functions, design and implement organizational structure, building teams for business growth and profitability.

Methodology

We used a variety of lean continuous improvement, DMAIC concepts to become a better version in all dimensions, work areas and functions.

Data Analysis/Results

Three-fold business growth, entering into 7 countries, adding 3 new business verticals with 34% leaner team than the previous one.

Implications/Learnings

HR can prove to be a 100% business-driving function that adds to the capability and capacity of the organization. It is important to maintain optimal team size at all points of time, as less team size would lead to overburdening current team members, and more than required members in the team would lead to inefficiency at times.

Improvements and Contributions to the Company

The strategic business units are now leaner with more focus on the employee lifecycle and growth within the company. This also helped in improving the median tenure of employees within the organization from 1.2 years to 1.7 years with great organic growth on social media handles, majorly over LinkedIn.

Limitations of the Offered Solutions

NA

Conclusion

HR can prove to be a 100% business-driving function that adds to the capability and capacity of the organization. Overall HR process, starting from talent acquisition and talent management to employee exit leads to high impact on business results and potential employees.

Vodafone Idea Limited

Project Title: Transferable Best Practices (TBP) Model

EXECUTIVE SUMMARY

Abstract

The world around us is constantly changing, and in order for business to remain relevant and future-ready, it has to continually evolve. One of Vodafone Idea mission is to" Be the most respected company by leveraging technology and purposeful innovation to catalyze social prosperity, digital literacy and inclusivity".

To implement the Culture of Excellence within the Organization and to develop innovative and sustainable practices that can be replicated across PAN India, Vodafone Idea Limited (VIL) commercial Team launched the "Transferrable Best Practice Model" (TBP).

With the implementation of the TBP model Commercial Department of VIL embarked on a journey to contribute enhance the productivity of the organization through TBP'S Projects. The TBP projects were unique practices and innovations that can be replicated across different states of Commercial Function at the same time contributed in developing employees by encouraging them to share innovative and unique ideas.

Company Background

VIL is India's leading telecom service provider. VIL provides PAN India Voice and Data services across 2G, 3G and 4G platforms. With the large spectrum portfolio to support the growing demand for data and voice, the company is committed to delivering delightful customer experiences and contributing towards creating a truly'Digital India' by enabling millions of citizens to connect and build a better tomorrow.

The Company is developing infrastructure to introduce newer and smarter technologies, making both retail and enterprise customers future ready with innovative offerings, conveniently accessible through an ecosystem of digital channels as well as an extensive on-ground presence.

Current Problems/Challenges Faced

VIL is the third largest mobile telecommunications network in India and has Operations in 22 circles. Vodafone Idea Limited in Commercial has 2000+ team members located all over India. Every team member in the team has their own skills and talents which they use to improve their respective challenge area. It was also required to create focus and awareness on the execution of best practices that were incorporated in one state.

Objective/Need/Purpose

The objective is to create a platform that will enable all employees where they can showcase their ideas and the business gets to benefit from innovative, digitalized solutions and accelerate continuous improvement efforts in Supply Chain Processes.

Methodology

Guidelines/framework are defined to encourage innovation and ensure PAN India uniform implementation. It begins with identification - where TBP Initiator from the cluster identifies improvement opportunities. The same is submitted in approved template for validation & approval. Corporate SPOCs then assess & approve/reject the request. PAN India Champion TBPs are submitted and cluster SPOCs then drive for replication of the projects in PAN India. Champion SPOCs ensures their state submits new TBPs and all the approved TBP's are implemented by their team. Central Audit team tracks replication status, validate implementation evidences submitted by State SPOCs & monitor Cost Savings which have been registered.

Data Analysis/Results

Data analysis and interpretation is an integral aspect that helps in making informed decisions. The insight obtained is used to set and identify trends for *improvements/progress*. We have a Centralized repository of PAN India TBP's submitted. Every month, Our Central Audit Team shares a dashboard every month reflecting:

- List of TBP's submitted till date.
- Replication status of Champion TBPs that have been submitted till date.

Such informed reports help State SPOCs in submitting more improvement/innovative TBPs from their respective State's and also contributes in expediting replicating the Companion (other Circle projects). State SPOC's conducts meetings internally within State to analyze/review the PAN India TBPs for replication and also encourage the team to submit more Best Practices from their respective States.

Results

- 75+ Transferable Best Practices with 1500 Opportunities across 22 circles in the year 2021.
- 50% Projects replicated across states.

Implications/Learnings

It is universally acknowledged that Learning is directly related to improving employee overall performance within the organization to reap its dreams. Every undertaking submitted provides a Learning contributing to Employee overall performance enhancement thereby improving Company overall performance.

Some of the learnings are:

- *Innovation:*
  - Where Solar Energy were implemented in MSCs.
  - Simplified In house Training Modules in local languages.
- *Compliance:*
  - Reducing Journey violations for all vehicles which carry VIL materials PAN India.
  - Overall, Journey Violations was reduced by 94%.
- *Wellness:* The global COVID-19 pandemic unexpectedly entered our lives and put everything to a halt. In the beginning, we didn't know much. Telecom being part of Essential services it was imperative that undisrupted VI network services is made available to our customers. TBP across states ensure work as per all the safety measures. When vaccinations were launched all team members were educated and 100% both the vaccination were completed within 6 months for 3000 + Commercial Team members (On Roll/Off Roll/3PL and Non VIL Drivers).

Improvements, Contribution to the Company

"Transferrable Best Practice Model" implemented the Culture of Excellence within the Organization and developed innovative and sustainable practices that can be replicated across. All the Best practices were owned and driven by Commercial Department. Post implementation of this model, Out of Box approaches and ideas increased.

- 75 projects which were implemented all had different ideas …so replicating them was a Unique Selling Point (USP).
- 100% contribution PAN India.
- This process built up a Learning culture amongst the Employees.

Limitations of the Offered Solutions

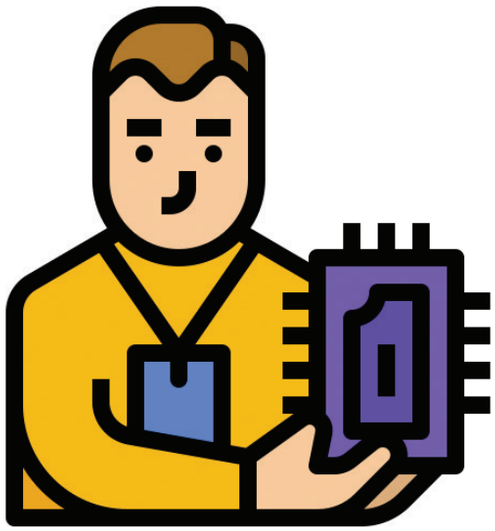
At times due to difference in geography and climate, some projects may not get replicated in a particular state.

Conclusion

Knowledge is more useful when liberated and share - This is the principle on which TBP model was executed and contributed in benefitting the Overall Commercial Department immensely. Innovation, Creative Idea with Automation have reduced Road violations and improved cost savings. Uniform PAN India.

Implementation of Best Practices have increased business efficiencies and help in building a robust Supply chain process.

IT CONSULTING



Wipro Limited

Project Title: Wipro - Saudia - Implementation of Software Defined WAN

EXECUTIVE SUMMARY

Abstract

Wipro helped the client in implementing Software-defined networking (SDN) in a wide area network (WAN) which has Improved the Quality of Services due to load balancing between the links, along with enhancement of Security & reduction in bandwidth link utilization.

The solution has been implemented with thorough due diligence and data analysis. With this due diligence and systematically planned activity implementation by the team has benefited the Customer and gained a cost savings of 2.3Mn USD due to the reduction of bandwidth of high-cost MPLS links.

Company Background

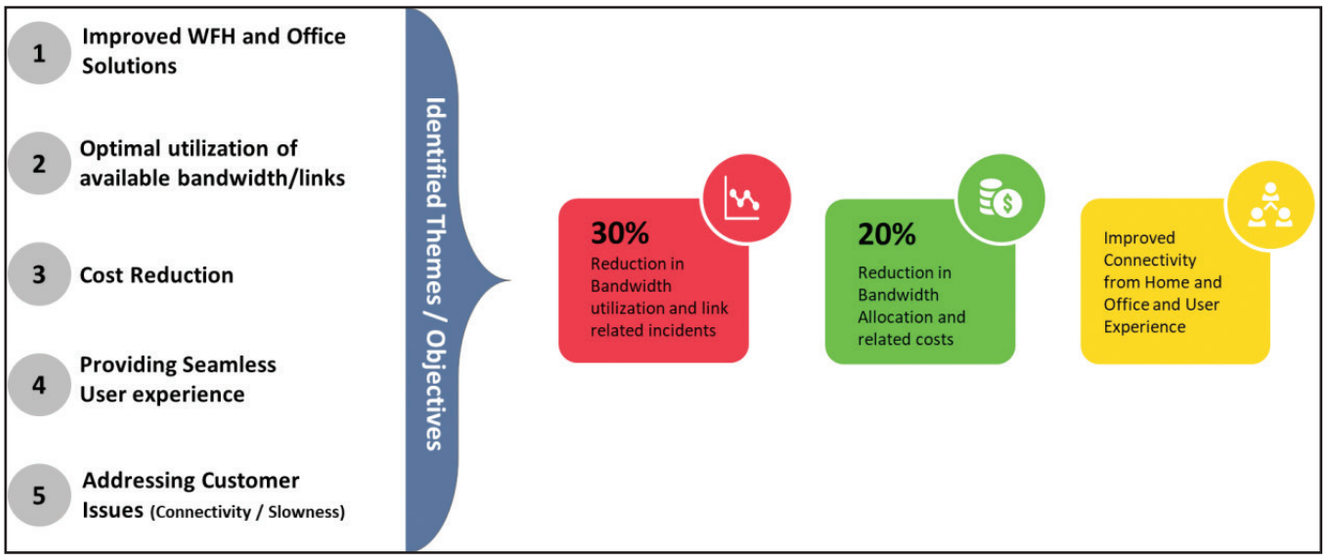
Wipro Limited is an Indian multinational conglomerate headquartered in Bangalore, Karnataka, India. Its diverse businesses include FMCG, lighting, information technology, and consulting. The Fortune India 500 ranks it the 29th largest Indian company by total revenue.

Current Problems/Challenges Faced

- In Current Work from Home & Work from Office Scenario. Customer was facing slowness issues while accessing critical business-specific applications and office applications line Outlook & MS teams through Laptop/Mobile phones.
- High Bandwidth utilization issues in links while accessing Internet and Cloud based applications being observed by the support teams. These were leading to high number of Bandwidth Utilization/link related Incidents/Issues.
- High cost of operation for the Customer as High Bandwidth MPLS Links were being utilized.
- Customer's Campus Local Area Network was connected to Internet via Subnet based MPLS WAN links for all Internet and cloud based application access - which was causing high bandwidth utilization issues while accessing Internet and

Cloud based applications.

Objective/Need/Purpose



Methodology

Through multiple brainstorming sessions team identified the probable causes which are roadblocks for achieving above themes (fishbone diagram was utilized) and validated each of the causes systematically using statistical approaches and data validation (Flowchart, One way Anova, Multi-voting, Gemba walk).

Post identifying and validating the causes, team come up with multiple solutions, which were further evaluated using Pugh Matrix before arriving at optimal solution of "Fortinet SD WAN".

Data Analysis/Results

Below are the detailed Benefits:

Productivity:

- Improved Customer's End User Productivity.
- Improved Engineer Productivity due to incident reduction as Engineers need to focus on Genuine issues.

Quality:

- Improved Quality of Service due to load balancing between the links.
- Achieved load sharing/redundancy across MPLS links and Local internet.
- Advanced capabilities, such as forward error correction (FEC) to compensate for packet loss.

Security:

- Enhanced Security - NG Firewall, VDOM, Explicit web proxy, SSL Inspection, application control and cloud sandboxing security control for WAN services these provides secure access to Internet and Cloud Applications.
- Redundancy & Management for both network and security is through a single-pane-of-glass with role-based access control - Integrated with Forti-analyzer for Network Security Logging, Analysis, threat identification and Reporting.

Cost:

- Due to reduction in high bandwidth link utilization by 31%, team could able to achieve Customer saving of 2.3Mn USD/Annum.

Delivery:

- Improved performance SLA and Enhanced User Experience as Users can seamlessly access Internet and Cloud Applications.
- High Customer CSAT and Long Team Association with Client.

Morale:

- Simplified & Improved process for handling Link and Bandwidth Issues.

Implications/Learnings

- Using the structured approach for problem Solving.
- Utilization of Root Cause Analysis tools - Fishbone Diagram.
- Utilization of Statistical Tolls – ANOVA.
- Utilization of Solution Selection Matrix - Pugh Matrix.
- Improvements, contribution to the company: (100 words).
- This solution has benefited the company in all KPIs - Productivity, Cost, Quality, Security, Delivery and Morale as explained in the benefit section.

Limitations of the Offered Solutions

NA

Conclusion

The team was able to achieve all the set goals of the project and the implemented solution is well accepted and appreciated by the client and client management.

Below are some sample appreciations from the client team.

ESG SUSTAINABILITY & CSR

Vodafone Idea Limited

Project Title: HSW Excellence

EXECUTIVE SUMMARY

Abstract

According to the World Health Organization, India is responsible for the highest overall number of deaths caused due to road accidents. Following India are China and the United States of America.

India recorded 3.33 Lacs cases of road accidents during 2020 in which 1.33 Lacs people died and 3.35 lacs were injured, the annual report of the National Crime Records Bureau (NCRB). On average, every day 28 persons lose their lives despite the COVID-19 lockdown, according to government data. Despite 60 percent less traffic on the roads, more than 40 percent of all fatal accidents occur at night.

Health and Safety is an integral part of Vodafone Idea Limited (VIL). VIL Commercial has 49+ Warehouses located all over India with approx. 9.0 Lacs sq. ft, having 1200+ Workmen engaged in Warehouse operations and 70+ Logistic Transporters doing average monthly trips of 5000 Vehicle trips /month. While VIL employees have been following a Safety culture within its circle of influence, the VIL Commercial team had to ensure safety in their Warehouse and Logistic Operations which are handled by Third-party Logistics.

Company Background

VIL is India's leading telecom service provider. VIL provides PAN India Voice and Data services across 2G, 3G and 4G platforms. With the large spectrum portfolio to support the growing demand for data and voice, the company is committed to delivering delightful customer experiences and contributing towards creating a truly 'Digital India' by enabling millions of citizens to connect and build a better tomorrow.

The Company is developing infrastructure to introduce newer and smarter technologies, making both retail and enterprise customers future ready with innovative offerings, conveniently accessible through an ecosystem of digital channels as well as an extensive on-ground presence.

Current Problems/Challenges Faced

VIL WH operation is managed by Third Party Logistics, which had limited awareness on various safety issues – which included slips and fall and right operating of Material Handling Equipment (MHE).

Transport Operations for VIL is managed by 70+ Transporters and the Vehicles/Drivers which are used for material movement are all Market Hired. It was imperative to promote VIL Safe Driving Practices (Tracking & Monitoring of Trips) and ensure well maintained Vehicles with valid documents are used to ensure Journey Compliance.

Objective/Need/Purpose

It is our unflinching commitment and endeavor "We shall not be putting anyone at risk while working" (VIL Belief and Compliance Framework) – same ethos will be maintained with our employees and Vendors employees as well and ensure that all those who work for and with us are safe while working.

Methodology

We ensure the HSW Compliance using enablers – People, culture, belief, management focus, system and processes.

- *HSW Digitalization:* We have developed the robust system to ensure all the Road compliance by 100% trip tracking using GPS and 100% Driver and vehicle inspection.
- *Tracking:* Tracking of Continuous driving, night driving violation, speed limit, real time violation alert and driving records 3)
- *Projects:* Implementation of Various projects like project "Nirantar" for continuous learning & development, Project "Sarthi" – reward & Recognition program for employee motivation & Project "Rakshak".
- CSR initiative.
- *Journey Validation:* Monitoring journey compliance, supervision & Audits.

Data Analysis/Results

Data is the base point for analysis & the indicator of improvement. We are tracking all data using AI application-iTCMS which share 100% vehicle tracking & inspection, validate driver compliance & trigger night driving, over speeding & Continuous driving violation. Overall violation count reduction from 338 (FY21) to 5 in Dec'21 on average trip count of 5000/month. Vehicle tracking improved from 91% (FY21) to 99.44% (Dec'21).

Apart from that we have 50 Warehouse audit check KPI, which we are monitoring on monthly basis for PAN India. We are also analyzing training dashboard in order to encourage & ensure 100% Participation PAN India.

Implications/Learnings

Rigorous Training

- 3825 WH(3PL) employees trained on 16 Training Modules
- Driver Count ~ 16,138 Trained
- In-house Training module in 10 Languages
- Quarterly Fire Mock drill

Projects: (Care for Society)

A) Project "Nirantar"

- 3050 Participants.
- Continuous Learning (9 topics included on Summer safety, Covid Safety, Monsoon Safety, Wellness through yoga, Manual Material handling, Mechanical Material handling, Work at Height, Electrical safety, Winter Safety).

B) Project "Sarthi"

- Run Reward & Recognition Program for Driver, WH employee, Security & Transporter on quarterly basis.

C) Project "Rakshak"

- 3,774 "CSR Initiative

Improvements, Contribution to the Company

The post implementation of cited methodology:

- Overall violation count reduction from 338 (FY21) to 5 in Dec'21 on average trip count of 5000/month.
- Vehicle tracking improved from 91% (FY21) to 99.44% (Dec'21).
- 100% training Participations for PAN India.

Limitations of the Offered Solutions

We are using GPS based tracking system installed in vehicle for trip & violation tracking which does not provide data on non-network area. However distance tracked is stored & can be updated back in report.

Conclusion

HSW in warehouses management, Operation & logistics protect health and lives of employees and prevent fatalities. It is our continuous endeavor to ensure the 100% HSW Compliance and safety of employees by continuous monitoring, tracking and improving our process, system and trainings with the best use of digitalization in the industry.


Winners of '22
Vodafone Idea Ltd.
ACTIVE PARTICIPATION ACROSS ALL DOMAINS
ONB Technologies India Pvt Ltd
MOST ENTHUSIASTIC PARTICIPATION

SCOPE

CORPORATE EXCELLENCE AWARDS

THE ULTIMATE BATTLE BETWEEN CORPORATES FOR BUSINESS EXCELLENCE

SCMHRD | AACSB ACCREDITED

Symbiosis Infotech Campus, Plot No. 15,
Rajiv Gandhi Infotech Park, MIDC, Hinjawadi,
Pune - 411057
020-22944308
www.scmhrd.edu
info@scmhrd.edu || sixsigma@scmhrd.edu
Follow us on:
/scopescmhrd/
/scope.scmhrd/

ISBN: 978-93-5811-331-0

COPY NOT FOR SALE