

Designing the Enterprise of Tomorrow

Cloud Computing -A compendium of case studies



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Deloitte.

JANUARY 2023

Foreword



2022 has seen India take over the G20 Presidency driving the themes of Sustainable Development Goals (SDGs), Data for Development, Digital Public Infrastructure and underlying all these, Technological Transformation. On the other hand, enterprises of today are focusing becoming the diaital on enterprises of tomorrow. At the core of this transformation is Data Analytics (AI/ML), Devices (IoT, mobile phones, etc. - data collectors) and the Cloud (the platform to store/retrieve and process the data).

NASSCOM's Cloud Advocacy Program is tasked with accelerating cloud adoption in India through various programs & initiatives. Under the thought-leadership pillar of this program, we have published multiple reports that explore various aspects of the cloud computing industry – market size, skills, adoption levels, strategic partnerships, and case study compendium.

Under the aegis of this program, NASSCOM launched its first-ever NASSCOM Enterprise Cloud Adoption Awards 2022 in August 2022 to recognize Enterprises and the Government for their excellence in cloud adoption. The 2022 case study compendium is the second edition that covers companies shortlisted for / won these awards.

Through these case studies, the compendium highlights the problem statements that enterprises were trying to overcome, details out the approach that is focused on deploying cloud platforms and cloud-based solutions, and quantifies the impact metrics, both onetime and ongoing benefits. The case studies cover a range of verticals – Automotive, BFSI, Education, Energy & Utilities, Infrastructure, Oil & Gas, Pharmaceuticals, Retail – across a spectrum of use cases – supply chain, streamlining processes, sales & marketing, governance practices, customer engagement, resource optimization, integration of business units, risk & compliance and more.

What was very heartening was that over 55% participants were from the end-user segment, and we also saw nominations from the government sector and public sector enterprises. Leveraging the cloud platform is helping uncover underlying insights that enabling new are revenue explore streams, new customer segments, expand reach across geographies and allowing new ways to leverage data.

I hope this narrative will help a broader range of enterprises plan their cloud adoption journey and replicate the success.



Sangeeta Gupta Senior VP & Chief Strategy Officer NASSCOM



Foreword



With the constantly evolving technology landscape, Enterprises' ability to keep pace with change - while being relevant, serviceable, customizable, and viable - is being put to the test. It has now become essential for enterprises to holistically evaluate their strategies and harness the ecosystem technology to support business. With the myriad benefits that cloud offers, enterprises are adopting a cloud-first strategy, combining cloud engagement models as the best-fit approach for agility, scalability, and innovation.

Enterprises have invested in a variety of latest technologies and are creating a heterogeneous IT environment where both legacy and next-gen technologies can coexist. At times, this heterogenous IT landscape can also be an outcome of decisions after business mergers, acquisitions, and divestures. While the coexistence of technologies in the IT ecosystem seems inevitable, it proves to be advantageous. It helps enterprises investments, protect their allowing modernization of legacy technologies while adopting and integrating next-gen technologies. And by leveraging hybrid cloud, enterprises can synergize and their IT. landscapes, transform accelerating business agility that drives growth.

No two industries, or their needs, are the So, cloud solutions should same. seamlessly integrate with the needs of enterprises. While there is no one-sizefits-all approach to a successful cloud journey, a compelling vision – backed by a diligent approach that aligns business sustainable objectives to cloud transformation enables business success and helps realize expected results.

How can enterprises achieve business objectives while migrating and modernizing to the cloud? It calls for driving strategic changes in culture, organization, and processes, while utilizing new capabilities such as DevSecOps, containers, microservices, blockchain and serverless computing. continuous metamorphosis, Α by efficiently absorbing and adapting to these newer paradigms, can help enterprises seamlessly scale for experience business growth and agility.

Through this compendium, gain insights on compelling success stories that showcase how cloud practitioners addressed diverse business problems with effective strategies.



Satishchandra Doreswamy

Vice President and Global Head -TCS Enterprise Cloud Tata Consultancy Services





Acknowledgements

The first edition of NASSCOM's Enterprise Cloud Adoption Awards and this compendium featuring case studies of the winners and finalist companies is the result of over five months of effort involving various stakeholders of the cloud computing ecosystem.

NASSCOM would like to acknowledge the support they provided in making this possible.

We would like to extend our sincere gratitude to MIDC (State Sponsor) and TCS (Strategic Partner). We also acknowledge our Knowledge Partner, Deloitte India, in shaping the awards – identifying the categories, designing the questionnaire, and evaluating & shortlisting the nominations for the jury round.

Special thanks to all the jury members, leaders representing technology & telecom sectors, academia, end-user enterprises, and NASSCOM, for giving their time and expertise in evaluating the shortlisted nominations & selecting the winners.

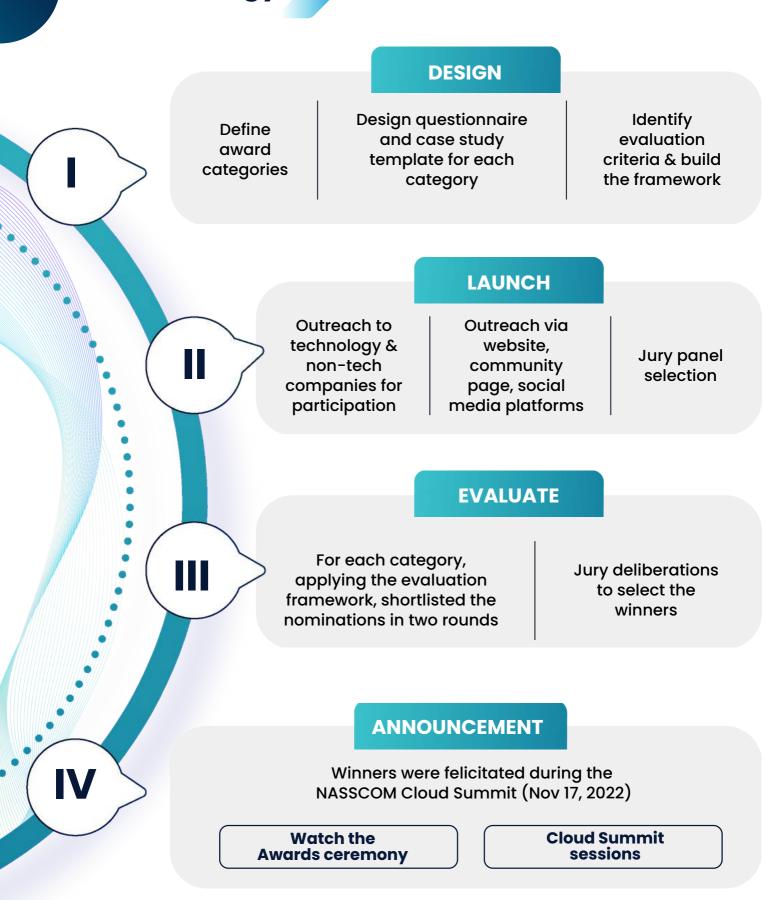
We also extend our sincere gratitude to all the organizations – technology & non-tech companies, members & non-members – who participated in this initiative and helped make it a grand success.

And finally, a big thank you to the entire NASSCOM team who helped evangelize these awards within their network.

List of the jury members and the featured companies is given in the appendix section.



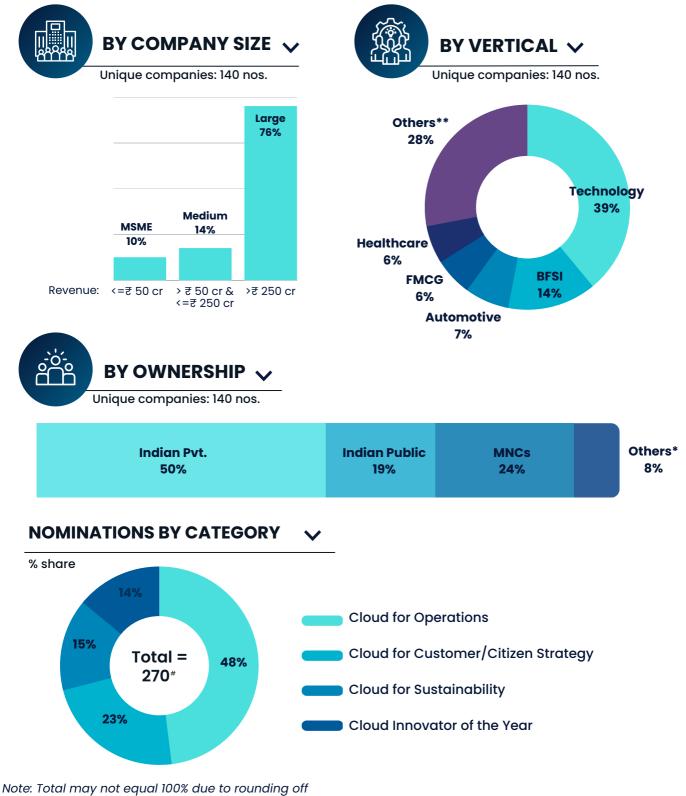
Methodology





Participants' Profile

This compendium features case studies (winners & finalists only) for which we have received approval from the respective companies.



*GCCs & Government

#Total no. of nominations across all four categories.

** Includes Construction & Real Estate, Education, Media & Entertainment, Pharma, Retail, Telecom, Textiles, Utilities, etc.





Table of Content

8 Key Findings

10 Excellence in Leveraging Cloud for Operations

39 Excellence In Leveraging Cloud For Customer / Citizen Strategy

66 Excellence In Leveraging Cloud For Sustainability



73 Cloud Innovator Of The Year



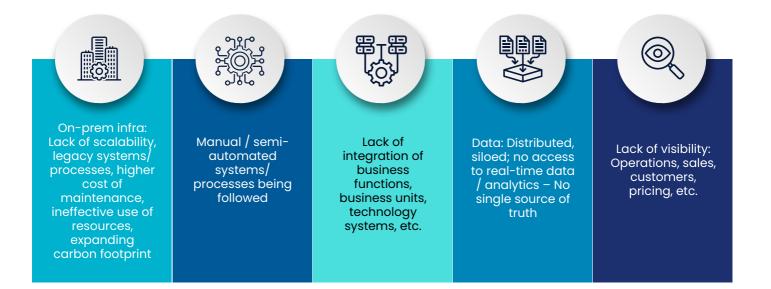
87 Appendix





Key Findings

On-prem infrastructure, lack of integrated systems hampering unified view of business



An analysis of the objectives cited for cloud adoption shows firms deploying cloud for:

Integration	Resiliency	GRC	Platformization	Scalability
 Tightly integrate business functions production, sales, marketing, etc. 	 Modernize the IT landscape – Standardise, automate, simplify 	 Improving transparency of operations One-stop 	Launch pad for digital technologies – IoT, AI, analytics, etc.	Expand reach across geographies, verticals, customers
• Digital	processes	solution for statutory		
Transformation of supply chain	 Leverage analytics & dashboards for 	compliance		
 A unified view of the organization – deliver a seamless 	real-time visibility & smarter			
& uniform experience	decision- making			

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Key Findings

Cloud platforms enabling higher automation leading to improved v productivity & faster TTM







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Leveraging cloud for effective and impactful scalability



CLOUD SOLUTION & APPROACH

To become a future-resilient organization, we turned to cloud adoption to ensure easily accessible data & efficient system-driven processes. We now have:

- Strong and fast reporting practices that support management of predictions throughout the entire business, especially across RMG, finance, and HR functions
- Our leads and sales pipeline is now available online for all sales and pre-sale teams to update it on the go across geographies — ensuring all data is live
- Data is available across the globe, updated in real time, & protected from potential leaks
- All our customer demos are now accessible from a single location
- Completely eliminated paper-based work
- HR: Leveraging AI to simplify recruitment processes from onboarding to offboarding
- Finance: Using time sheets and e-tickets to invoice processes entire cycle is semi-automated, paperless, and time-efficient
- Data privacy: Moved critical data to OneDrive organization-wide - ensuring we are GDPRcompliant





- Efficient end-to-end recruitment process, RMG process, Sales pipeline, Invoicing clients
- To deliver seamless and uniform experience across teams



- Increased costs; Reduced flexibility
- Slower implementation
 cycle
- Reporting issues; Storage issues
- Lack of real-time data & data privacy







NASSCOM Awards has been a great opportunity and platform for enterprises to showcase their innovations and efficiency in the field of cloud adoption for operations. Areteans has enjoyed the experience of taking part and sharing our journey of leveraging cloud for excellence. Our cloud adoption as a strategy has been beneficial in increasing capabilities exponentially while reducing costs and security risk for us and our clients.



Gaurav Mathur | Chief Operating Officer, Areteans







Enabling clients to proactively counter/prevent cybersecurity incidents



CLOUD SOLUTION & APPROACH

Our clients wanted a single pane, scalable solution with next-gen security capabilities to manage end-to-end security operations.

- We implemented a Cloud based native SIEM/SOAR solution enabled with AI/ML-based automation capabilities - a SaaS-based, paysubscription as-you-go service. Α oneplatform, single pane solution with end-to-end operations security management for applications and infrastructure, it offers a holistic view of the organization's information security, incl. threat hunting and threat intelligence
- Our CDC analysts can respond to new edge attacks, zero-day findings using cloud-based threat hunting and threat intelligence solutions
- Our security engineering team developed customer parsers and applied automation to have effective playbooks and use cases to detect new-edge attacks

Three of our leading clients: % cybersecurity workloads on cloud

- India's leading media conglomerate: ~60%
- India's leading direct selling company: 20-30%
- Global data engineering and analytics firm: 70-80%

*: Security, Information, and Event Management (SIEM); Security Orchestration, Automation, and Response (SOAR) **: User and Entity Behavior Analytics (UEBA)







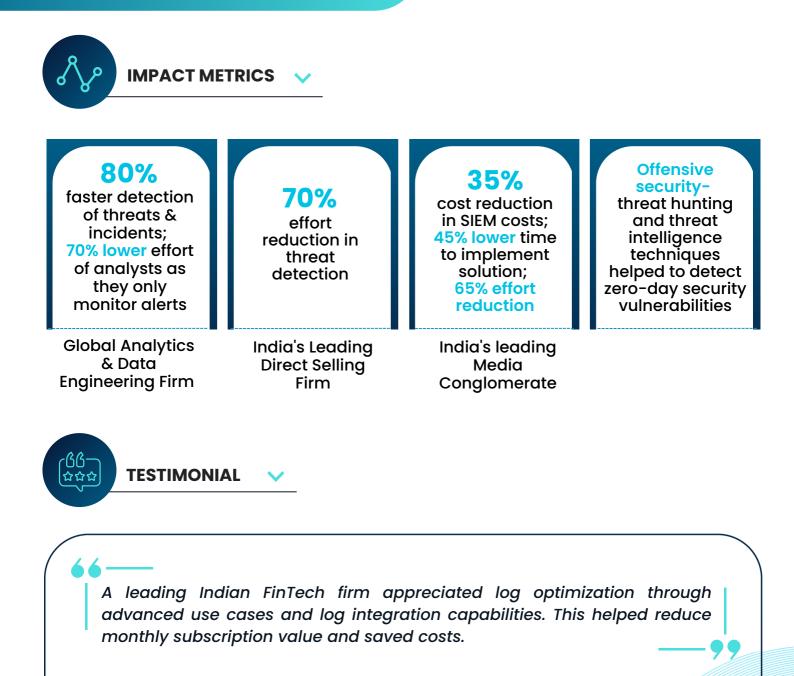
- Continuous monitoring & security ops
- Adopt Managed Security Services model
- Avail offensive security approach



- Traditional on-prem solution
- No threat intelligence capabilities
- Limited integration with SIEM/SOAR* & UEBA**











CustomFit.ai

Optimizing client websites for better customer engagement & conversions



CLOUD SOLUTION & APPROACH

- We rigorously worked with AWS and other cloud partners to optimize the usage using SPOT instances and other Autoscaling techniques which helped us maximize the usage of resources and avoid unused or wastage of resources
- We started using Caching and CloudFront services to reduce latency. This helped fix latency issues providing a seamless experience to our customers
- Currently, we are hosted in the Oregon region, but the CloudFront service of AWS is helping us reach out to customers globally
- We are now exploring AWS personalize and AWS forecast services which offer AI/ML features and can be seamlessly integrated with our product



 APIs with significant latency causing rendering issues on customer websites





Anirhudh Sridharan | Growth Experiments & Full-funnel Marketer, Chargebee





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DATAMATICS

Cloud-based web application development for Sales & Marketing



CLOUD SOLUTION & APPROACH

- Migration of high numbers of IaaS workload to PaaS - balance between cost, time, existing technical debt, and long-term returns autoscaling of Web apps
- Compressed code & jpeg/png images for faster load time value added service
- Configure Logic apps for health probes, send alert notification on MS Teams & automate cache clearing on front door
- Analyze, test & deploy updated version of containers for stable website performance
- Configure NGINX Server to manage HTTP and HTTPS traffic
- Configured auto-replication of database between two different locations of production & disaster recovery environment - Auto switch traffic to DR for seamless performance
- Configure application insights to automatically detect performance anomalies, help diagnose issues & continuously improve app performance & usability



- Existing infrastructure did not fully support global reach of website
- High cost of IaaS high management & support cost
- Unstable behavior of containers on which website is hosted



30–50% reduction in IT spend by migrating to PaaS service



60% automation achieved via cloud









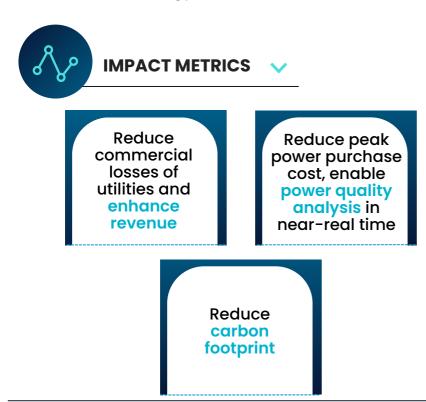
ENERGY EFFICIENCY SERVICES LIMITED A JV of PSUs under the Ministry of Power

Pan-India installation of Smart electricity meters



CLOUD SOLUTION & APPROACH

- Indian Government wants to install Smart meters at PAN India level. This is an end-to-end project which is being managed by EESL
- So far, close to 2 million smart meters have been installed in the states of UP, Haryana, NDMC-Delhi and Bihar. Targeting to reach 5 million meters soon
- EESL has implemented the project with different partners for Meter Data Management (MDM) and Head End System (HES)
- The entire infrastructure is hosted on cloud with Disaster Recovery. The meters are connected through a web-based monitoring system using GSM technology







Ċ	OBJECTIVE	~

Optimize operational performance of electricity distribution companies using Smart Meters

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 Large scale of the project (pan-India)

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Upgrading Academic ERP on cloud for improving administrative efficiencies



CLOUD SOLUTION & APPROACH

IEM, Kolkata has been using Academic ERP since 2008 for administration activities and the entire student lifecycle management. The system has been undergoing upgradation:

- Move to laaS and AWS Amazon Cloud Service
- Currently, over 80% of the use case workloads are running on cloud
- AI based performance monitoring and routine management
- Blockchain based certificates and student admit card
- Automation during pandemic: Admissions, Fees & dues, Daily Class Routine, Leave Management, Examinations, Copy Checking, Faculty/Student Attendance





Ċ	OBJECTIVE	~

Towards e-governance, transparency and quality improvement in academic administration



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IEM Kolkata has been at the forefront of innovation for more than three decades. We have been innovating and educating our students using new emerging technologies like Cloud, AI, IoT, AR/VR. The result is phenomenal, both for students placements, innovative patents, startups and team member effectiveness across the IEM-UEM group



Prof. (DR.) Satyajit Chakrabarti | Director, IEM







Leveraging cloud for eProcurement & Vendor Onboarding



CLOUD SOLUTION & APPROACH

- Zoho Creator solved the problem. The partner team (Nexivo Consulting) ensured understanding of the procedure and implementing the tool
- The process starts with the Requisition Module, wherein the employees raise procurement requests to the concern Team Lead. Based on to the financial implication, the budget gets approved by the respective competent authority
- Then one bidding request/RFQ opens for the vendor ecosystem

This automated journey from requisition request to billing has helped Magnasoft boost its productivity & transparency.

 eProcurement application over Zoho Creator cloud caters to Magnasoft's Vendor Management System - allows vendors, freelancers and partners to get onboard and to associate them with the procurement plans













Enhancing the unstructured healthcare workflow with digitization at Coal India Ltd.



CLOUD SOLUTION & APPROACH

OBJECTIVE V

A comprehensive Organizational Change Management (OCM) activity across all hospitals/medical facilities of CIL to enable stakeholders & end users to adapt to the change

Coal India Limited (CIL) wanted to implement the cloud-based Healthcare Information Management System (HIMS) to cater to the needs of 21 of their hospitals:

- Application is hosted on a single data center (DC) on Cloud with an option of a Remote Disaster Recovery Centre (DRC) with a single business process across all the hospitals
- In Phase-I, the HIMS has gone live in 8 hospitals & spanning across three CIL subsidiaries while in Phase-II, HIMS is live in 5 hospitals spanning across three subsidiaries. Rest of the hospitals are set to Go-live by Dec-2022
- The system is helping in proper adherence & tracking of Government & medical compliance related metrics incl. cost & operational controls of departments & consumables
- Real-time dashboards are available with all the department-wise reports, patient/revenue/ surgery count, etc. These have helped in improving planning, operations & management, decision-making at headquarter, subsidiary & hospital level







- CIL had an entirely manual approach to the operability of their medical facilities
- Their hospital network was working in silos & interdepartmental linkages were missing. Each hospital had their own operational SOPs
- CIL had difficulty in tracking patient health records, cost of treatment rendered to nonemployees as part of CSR activity, employee medical benefits rendered, inventory, consumable procurement cost, overall operational viability of their medical facilities, etc.













Deploying a resilient, scalable and improved Credit risk modelling & analytics solution



CLOUD SOLUTION & APPROACH



A credit risk technology application that enabled credit risk modelling & decisioning, risk & regulatory reporting and analytics for NatWest's Retail & Commercial banking

- AWS was shortlisted as the Cloud partner and the best technology stack was finalized using AWS S3 for storage, Elastic-Map-Reduce for compute, Airflow for job scheduling, Tableau for data visualization
- Multiple re-usable patterns were conceptualized and implemented to standardize and accelerate development
- Infrastructure-as-a-Code(IaaC) was leveraged to create deployment patterns for storage, compute, modelling and visualization on AWS
- A dedicated link to facilitate controlled data transfer to AWS, Integration of AWS components with Bank's DevOps pipeline, etc.
- A configuration based reusable application framework to standardize data ingestion, management, quality, transformation & controls

 reduced development time

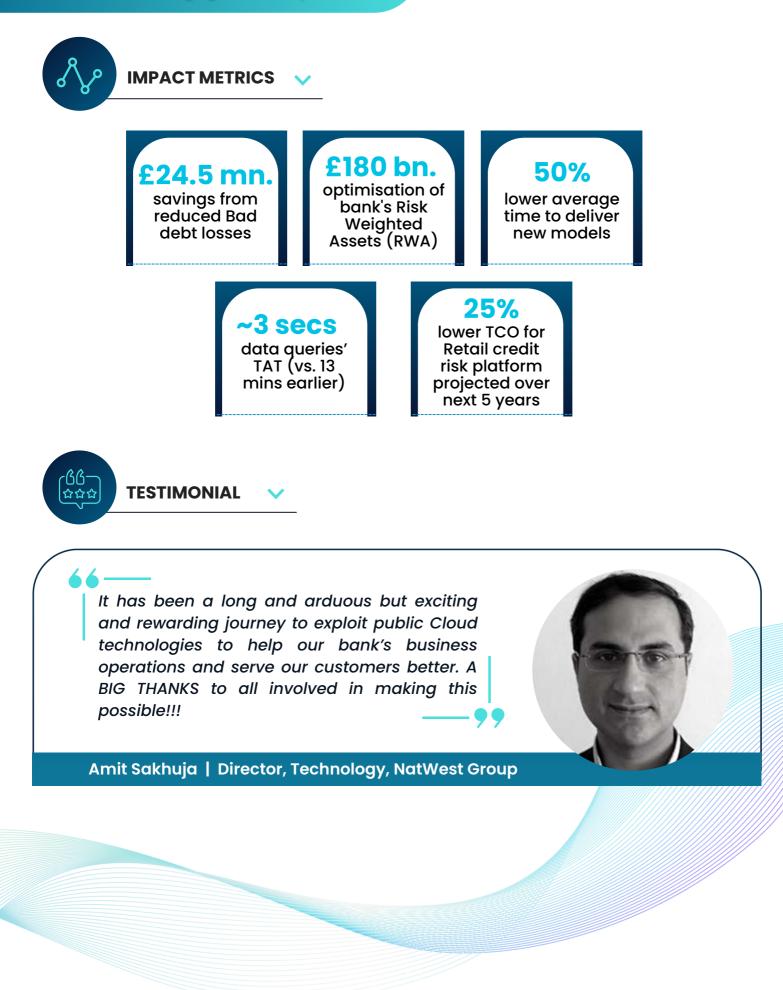






- Frequent performance, capacity and stability issues for end-of-life legacy platform
- Lack of scalability: To build credit models to meet regulatory requirements
- High run-cost: Ten upgrades over 20 years costing >£50 mn.
- Longer time to provision physical technology infrastructure









S&P Global

Expediting cloud adoption journey



CLOUD SOLUTION & APPROACH

- Starting with AWS, S&P Global began its cloud adoption journey. Over time, Azure and VMWare Cloud on AWS (VMC) were adopted
- Business is primarily consuming laaS and SaaS services from the CSPs
- The spCloud Provisioning platform was developed leveraging Terraform, Ansible, and ServiceNow that supports deployments across all CSPs
- spCloud has also been used to provision resources in bulk, enabling S&P Global to expedite its cloud adoption journey and exit data centers resulting in significant savings for the enterprise
- Partnering with S&P Global's EssentialTECH (flagship learning platform), the spCloud code base has been used to develop automation to provision Decentralized Finance (DeFi) Playgrounds in AWS used by developers for their training







S&P Global's cloud adoption journey saw us travel through phases of moving to the cloud to containerization to using Cloud as our default innovation platform. To me, that is the truest testament to the strength of our Cloud construct.



Sugandha Srikanteswaran | Managing Director, Digital Technology Services, India







iSteer ERP for inventory management, accounting & statutory compliances



CLOUD SOLUTION & APPROACH



OBJECTIVE 💦 💊

- Deploy an optimal inventory management tool
- Seamlessly migrate legacy data to the new platform
- Create a one-stop solution for accounting & statutory compliance
- Partnered with M/s Amshuhu iTech Solution Pvt Ltd for a cost effective, turnkey SaaS solution - iSteer ERP
- Migrated our legacy data to the new platform, creating a one-stop solution for all our accounting and statutory compliance requirements
- M/s Amshuhu also provided the necessary training to our staff
- 100% use case workload currently running on cloud

During the Chennai Flood 2015, Vardha Storm and Covid-19, the iSteer ERP solution enabled us to operate as usual. During the pandemic, the sales team, working from home, leveraged the D-Connect mobile app and achieved their sales targets.

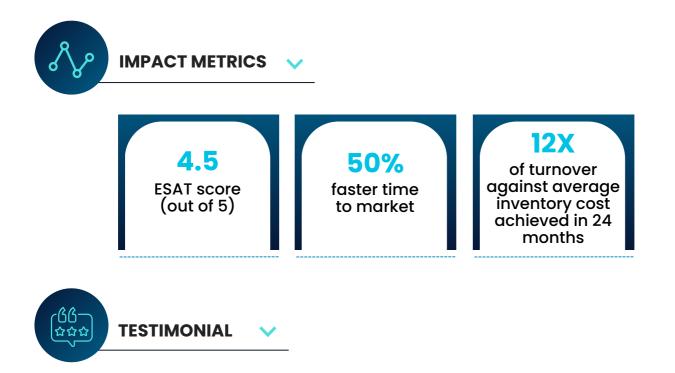


- Field/sales agents unable
- to access live data
- Accounting & statutory related artefacts camouflaged across various branches
- Tedious inventory management process





Further extension going on to build eCommerce portal & mobile application for the customer to enable omni channel experience.



Like after coronavirus how our world is changed, our entire operating system is changed effectively after launching your software in our concern. Lot of betterment like time saver, less manpower cost, minimizing error, fast communication, transparent details, instant action, high satisfaction, Etc. We are expecting more from your end to grow more.



R Kumar | Director, SEM Enterprises Pvt. Ltd.





TVS MOBILITY

Proactive diagnostic monitoring for post warranty vehicles



CLOUD SOLUTION & APPROACH

We deployed dongle based IoT solution to be fitted in post warranty vehicles, which can provide:

- Entire vehicle performance history along with proactive alerts for any upcoming issues
- Provide customers with details of the nearest service centers to get the vehicle serviced at the nearest location and avoid complete vehicle breakdown

Complete solution is designed and running on Cloud infrastructure:

- Complete Cloud SaaS model (Kafka, Kubernetes, Maps, Analytic engines, etc.) to work in tandem with and seamlessly integrate with IoT based devices (dongles)
- App solution designed to get data seamlessly from these devices installed in the vehicles, process the data, and provide analytics of vehicle performance in almost real time
- With Google maps and the dongle's active status, we can track the location of the vehicle and guide it to the nearest service outlet

This proactive diagnostic monitoring avoids vehicle breakdown, thus enabling better vehicle care and improved customer experience.

Currently, the solution works on 2G/4G technology; we are exploring to further enhance this with 5G rollout in the future.





OBJECTIVE	~

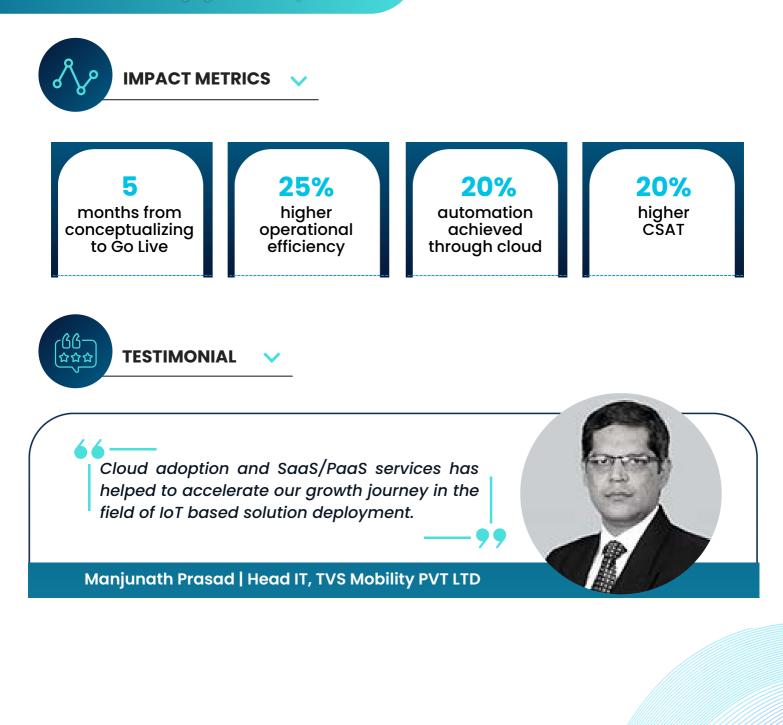
- laaS for entire organization
- SaaS model for Sales & Marketing



- Data in silos (across multiple systems)
- No single consolidated repository to track vehicle service history













Modernizing the traditional unorganized Dairy industry via cloud



CLOUD SOLUTION & APPROACH



OBJECTIVE

- A technology solution to bring India's Dairy industry to cloud
- Ease of use for the traditional dairy community & non-tech savvy employees
- Cloud infrastructure for development and testing and ability to add cloud infra on demand; use of Open source to eliminate software costs
- Using AWS Serverless components; DevOps, development and Standard Test processes collaborated
- Cloud based Source Code Management, workflow and Cloud-based CI/CD
- Data pipeline automation tools, Infra and application monitoring tools and deployments tools are integrated in cloud
- Scalability to millions of transactions per day with 24*7 uptime achieved via load balancing, clustering and active redundancy and serverless technologies

Different models of businesses - D2C, B2B, B2B2C - have adapted Vasista's solution:

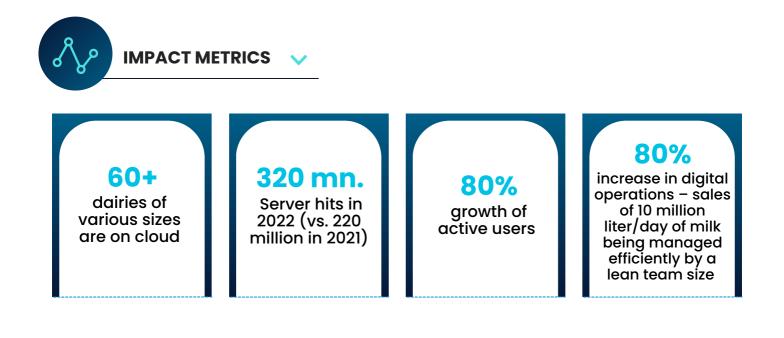


- Lack of customer & sales visibility – mostly manual transactions
- Massive effort to collect millions of small value transactions
- Heavy dependence on manual operations





- Enabled to collect orders and payments digitally at an affordable cost
- Access customers, employee activities, sales & payments directly from mobile
- Financial leakages and unproductive disputes minimized; admin costs reduced
- No huge investment in resources and time to achieve this. They are up and ready for digital transactions within a few days





We believe that you really have the capability of adapting complex business scenarios and deliver reasonable solutions which is really great!

Moinul Islam | Senior Manager - Quality Management System (QMS), Process Automation & IC, Brac Dairy & Food Enterprises







virtusa

Shaping an American multinational broadcasting & TV Network company's enterprise-wide cloud journey



CLOUD SOLUTION & APPROACH



OBJECTIVE 💊

Cloud City Program

Client embarked on a cloud transformation journey of migrating / modernizing workloads on AWS cloud platform (a multi-year cloud transformation program). Virtusa has worked closely with customer to understand business needs and associated risk thresholds to define a multi-year/phase road map

Virtusa partnered with our client, an American multinational broadcasting & TV Network company, in setting up the Cloud Transformation program which includes formalizing the strategy, approach and conducting numerous POC's to validate the technology, performance, security, and costs. With a phased approach and creation of a cloud migration factory, best practices were established in agile development, DevOps, test automation and disaster recovery.

- Phase 1 Migrate workloads driving DC Exit
- Phase 2 Automate & Optimize
- Phase 3 Modernize workloads with focus on Innovation and Agility
- Phase 4 Reengineer cloud native solutions





ENTERTAINMEN

MEDIA &

- Managing technology applications stack and infrastructure in on-prem datacenters
- High maintenance
 and operational cost
- Unable to scale to deliver agility in applications life cycle

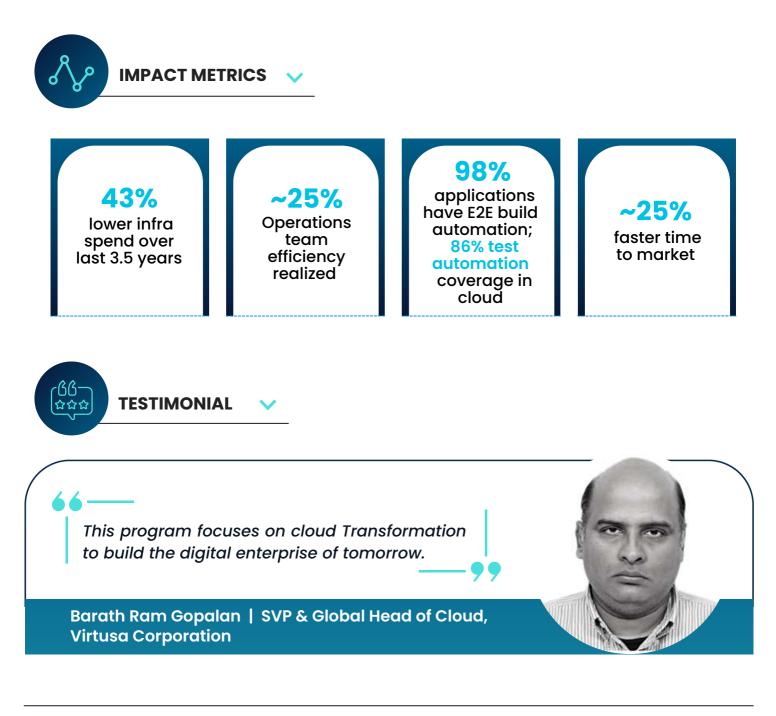




Re-platform applications to run natively on cloud and rapidly introduce emerging technologies to increase automation, improve availability and lower costs. The creation of a cloud migration factory allowed applications to be migrated in three waves based on the technology stack, complexity and business criticality. Each wave operated with continuous feedback applying learnings to make each application migration much better than predecessors.

As of today:

- Migrated 39 mission-critical business applications to AWS Cloud
- Developed 7 new cloud native applications
- Created a state-of-the-art DevOps automation with one-click deployment



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Integrating Sales, Marketing, Customer services on CRM platform for Zoomcar



CLOUD SOLUTION & APPROACH



Building a unified platform that brings sales, marketing, and customer service activities together

- Upon evaluating and testing out multiple solutions, Zoomcar ultimately settled on Zoho CRM. The CRM system has been completely customized to suit Zoomcar's unique business requirements
- Currently, Zoomcar has 400+ active licenses with several departments using Zoho CRM for their day-to-day tasks
- The entire sales process is covered in the Leads module and is automated using workflow rules

 no manual intervention
- Integrated Zoho Forms into Zoho CRM to capture leads generated from the company website. Integrating Zoho Social with Zoho CRM is enabling them to automatically capture leads from LinkedIn, Facebook, Twitter, and others
- Sales team can now qualify leads via Zoho CRM's integration with Ozonetel. This enables them to connect to leads instantly. WATI integration allows for follow up on leads via WhatsApp





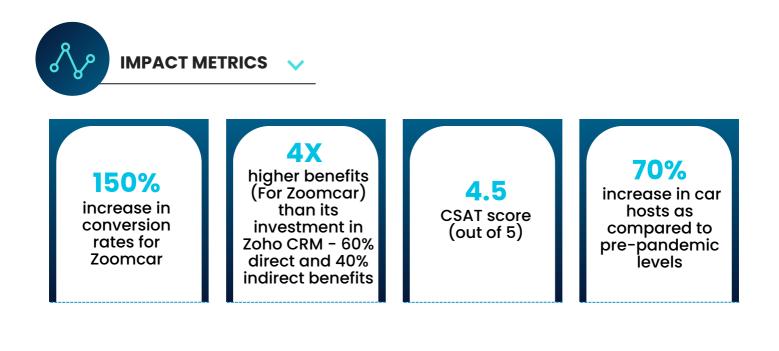


- Zoomcar used MS Excel & Google sheets to maintain its sales information
- Greater vulnerability to high funnel drop-offs and lead leakages
- Scattered and unorganized data across departments
- Sales & marketing did not have a clear view of the latest status of various leads





- Company management can refer to dashboards & reports to get a high-level understanding of the teams' performance
- Currently, Zoomcar manages 15,000 customers on Zoho CRM





There's a huge difference between using spreadsheets to manage sales data and using a CRM. Managing 15,000 customers was impossible. Opting for Zoho CRM has truly aided us in managing our leads and closing deals. We're no longer facing our main concerns from before none of the leads are missed and no leakage happens.

Akhil Pippala | Associate Program Manager, Zoomcar







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BMC's IT strategy provides an action plan for Mumbai to become truly digital



CLOUD SOLUTION & APPROACH

As a Municipal Corporation of one of the biggest and densest metro cities in the world, BMC serves almost every aspect of a citizen's life. It is providing various services like water supply, health and hygiene, fire & rescue, infrastructure, building approvals, property tax collection, education, grievances redressal, licenses, certificates, etc.

BMC started investing heavily in technology over a decade ago. It is increasingly focusing on investing and improving simple things like website, mobile app, chatbots to complex things like embracing latest 3D Mapping for planning.

At present, the Brihanmumbai Municipal Corporation (BMC) has a hybrid approach for hosting their applications:

- SAP systems are on AWS cloud; non-SAP revenue generating applications are hosted on ESDS cloud. Few other non-revenue systems are hosted in-house at BMC data centers
- ERP upgraded to SAP S4 HANA
- Mobile apps & technologies like chatbot services for the ease of citizens are being used as SaaS model
- BMC is providing online services through BMC portal for more than 100 various services like Property tax payments, Water bill, Marriage certificate, etc.









- During COVID, BMC managed pandemic using technology & analytics came out with granular & insightful dashboards for Management & Citizens from the very beginning
- BMC's IT Vision covers many ambitious initiatives requiring technologies like AI/ML, 3D Mapping, GIS, digitization of documents & learning platforms and adoption of best practices that Cloud Computing will make possible



The cloud delivers more flexibility than traditional IT infrastructures, Reliability, Increased performance and Security. However, comparative analysis & continuous monitoring is important in successful cloud journey.

Sharad Ughade | Director - Information Technology & Assistant Commissioner - D ward Office, Brihanmumbai Municipal Corporation







Project Anubhav – Enabling ₹1,000 crore business with a cloud-first approach



CLOUD SOLUTION & APPROACH

A cloud-first approach (IaaS, PaaS & SaaS services) was taken to quickly develop new solutions leveraging technologies like IoT, AI/ML, NLP-Bots, QR code-based track & trace, UPI payment gateways, eCommerce using AI models & algorithms, serverless compute, etc. BPCL is the first amongst the PSUs to adopt cloud technology.

100% of workloads for all new customer initiatives are now on Azure Cloud. Predictive & prescriptive analytics helps in receiving customized alerts.

Cloud adoption has enabled faster implementation of new offerings & features:

- AI-based URJA chatbot for instant response or booking LPG refill - 60 lakh+ users with average chat session of 3 mins. 41%+ usage is in non-English languages
- All B2C interactions can be done seamlessly through 'HELLOBPCL' app; 68,000 mechanics are directly connected on this app
- Other in-built solutions like UPI enabled payment for fuel purchase (UFILL), product track & trace (Lubes QR), B2B Portal
- Over 50,000 business leads generated for various B2B businesses
- 83% returning users on average in a period of 3 months

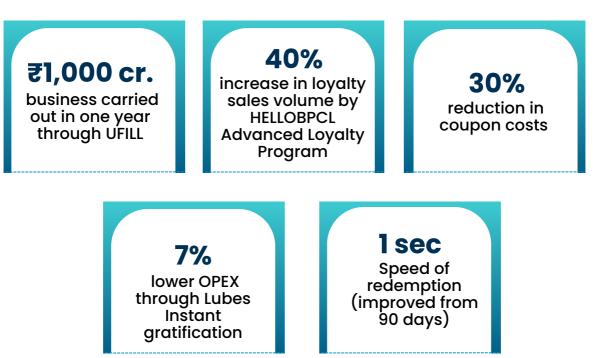




- Each BU had its own legacy IT systems
- No integration among departmental IT systems
- Scalability, reusability & higher operating costs of on-prem system













Complaint Management System help reduce TAT by over 80%



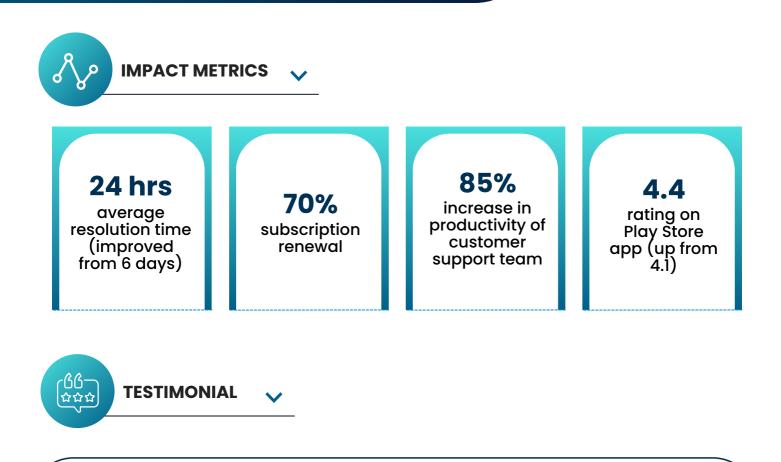
CLOUD SOLUTION & APPROACH

We deployed the Complaint Management System on cloud with hybrid cloud technology:

- First, we gave an easy form in the app for customers (farmers) to log their complaints and reach out to our support team
- We deployed auto-resolution steps on cloud for cases where issue was identified
- Health check metrics for IoT devices is deployed, which debugs issues even before it is formally reported by customer
- These responses are captured in real-time and stored in our CMS as tickets. The entire history of customer tickets, support actions and ticket status is visible on CMS
- Support team training material, FAQs and tips on how to respond to certain queries is on the CMS







While CMS (Computation Management System) is thought of as a solved problem across the tech industry, our unique technology of IoT for agriculture needed a fine balance between automation and customization. That is why we stuck to our core values of solving with first principles and the results are evident with 70%+ subscription and 9.4+ NPS.



Pushkar Limaye | Co-Founder & CTO, Carnot Technologies







Dawn Foods' recipe for online success



CLOUD SOLUTION & APPROACH

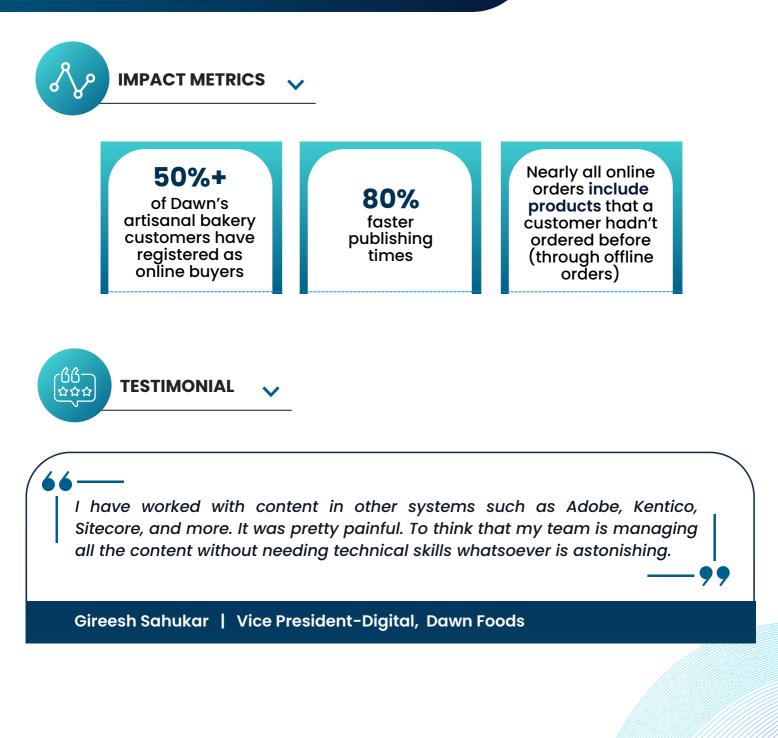
Headquartered in Jackson, Michigan, Dawn Foods is a 100-year-old global bakery manufacturer and ingredients supplier with over 4,000 team members worldwide.

In addition to a composable, API-first, and microservices-centric architecture, Dawn Foods wanted its Content Management System (CMS) to be developer-friendly. Ease of use for business users was also a significant factor - they need not have technical skills to manage the content. Dawn collaboratively Foods' team worked with implementation Contentstack architects & partners for a workable solutions that would scale.

- Contentstack is being used on Dawn Foods' online order site. Due to the system's composable nature, the velocity of updating the platform has been impressive - six major releases in six months since launch
- Marketing team can make most content changes without having any dependency on other team members
- Contentstack supports in-product chat and email support to address customer queries
- Includes technologies like AI/ML to provide better suggestions to customers with respect to the content to be generated













DoConnect - Building remote selling capabilities for a workforce of tomorrow



CLOUD SOLUTION & APPROACH

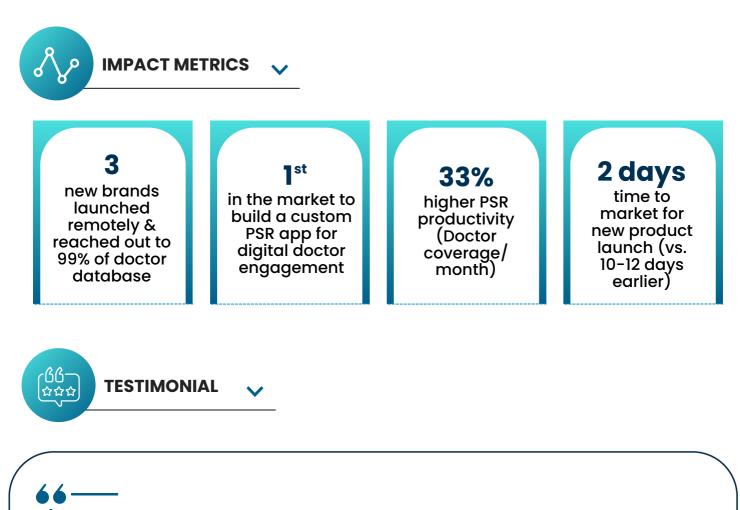
- The solution consists of a cloud-native system designed for multiuser experience on both mobile and web
- A web portal for brand managers to create content & iOS and android mobile apps for PSRs to outreach doctors
- Autoscaling is enabled to handle 1.5 million+ Doctor engagement activities per month by 8,100 field users

Cloud helped us with real time experiential and operational data:

- Engage customers on various channels like WhatsApp, Email, Chatbot, etc.
- Address business agility with rapid & seamless enhancements using DevOps
- Health of services proactively monitored to alert the PSRs about down time
- Leverage big data for a 3600 view of PSRs & doctors







Now, the doctor knows me by my name & number. We have a personal connect, without using any central numbers which are usually ignored or blocked. Overall this tool has not only helped in my digital connect but has improved my overall relationship with doctors.

Chandramouli Chirra | PSR, Dr. Reddy's Laboratories







Instant visibility into Commission Pay-outs for distributors

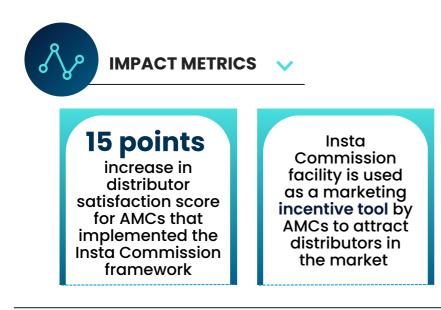


CLOUD SOLUTION & APPROACH

KFintech's instant commission pay-outs feature (SaaS model) is an industry first which enables agents to view their accrued commission on mobile any day and withdraw part of this any time and any number of times. The withdrawable amount is displayed in the mobile app.

Once the agent inputs the amount to withdraw, the system verifies the eligibility and shows their bank mandate on the screen. Once they confirm the mandate, the request is processed, and instructions are submitted the to Asset Management Companies (AMCs) payment bank API. This is processed immediately, and a credit notification is sent to the agent's mobile number. Once a withdrawal is made, the agent's net available amount for withdrawal is refreshed in real-time.

This facility is available through online and mobile app channels for ease of use.









We must rapidly make information available to various stakeholders in this age of instant communication. Cloud-based technologies will be the key enablers to achieving this in the industry.

Vonkayala Venkata Giri | Chief Technology Officer, KFin Technologies Limited (Formerly known as KFin Technologies Private Limited)





mahindra

Cerebro Platform's CRM & Customer 360 Project



CLOUD SOLUTION & APPROACH

As part of our Cerebro platform, we first integrated our Marketing & Sales functions with our Dealer Management System followed by Service & CRM Analytics capabilities.

Our Salesforce cloud implementation capabilities include automated multi-channel lead creation, lead enrichment via call center, Einstein-enabled lead scoring, Mobile-enabled vehicle enquiry creation, dealer assignment & test drive management. Our easy and smart sales processes help our sales team to work efficiently in converting an enquiry into a booking.

Our Salesforce Applications:

- Marketing Cloud: Generate more leads through personalised & automated campaign management. Our marketing capability scaled for 70+ mn. contacts, and we handled a peak volume of up to 6 mn. in a day
- Einstein for lead scoring: High-value leads are prioritised to improve CX
- Experience Cloud: The dealer portal & app (21,000 uers), helps dealers view all customer data, nurture leads, handle enquiries, schedule test drives, & manage bookings on-the-go
- CRM Analytics empowers dealers with realtime data on open opportunities, bookings, test drives, & other metrics to increase conversions & sales. Area sales managers get on-the-go insights on sales pipelines, dealer performance, number of enquiries per dealer, etc.







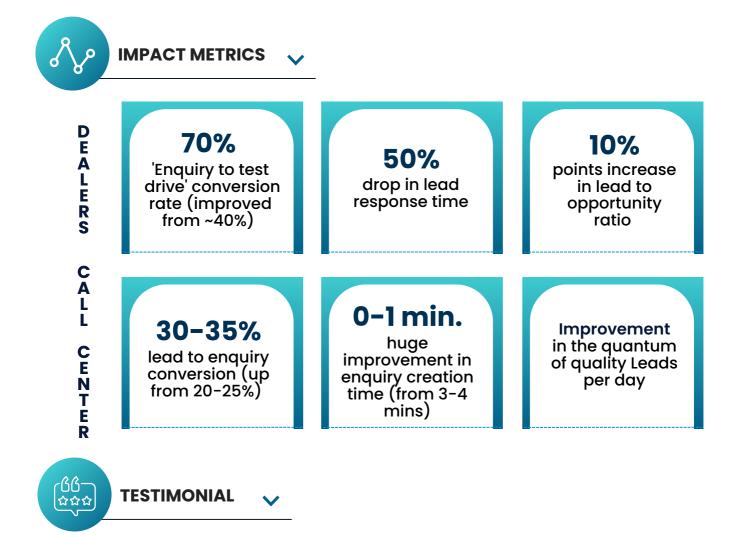
- Build a robust, easily configurable, and integrable platform
- Serve our customers better with BI and customer 360° capabilities



 A limited CRM system that didn't integrate with campaign management tools or the core Dealer Management System (DMS)



- Service Cloud: 450+ call center agents can accelerate case resolution
- Sales Cloud: A custom sales review process maps to dealership reporting structures. So, if a dealer sales consultant is under-performing, or needs help closing a sale, the system alerts the area sales managers to help



Our entire customer journey from marketing and lead nurturing, to test-drive scheduling and car bookings, is now managed on a single platform. This makes our dealers' jobs easier, and our customers' experiences smoother.

Bhuwan Lodha | SVP & Chief Digital Officer, Auto Sector, Mahindra & Mahindra



MICR LAND®

Making digital happen

Ealing Council, UK goes digital!



CLOUD SOLUTION & APPROACH

The Ealing Council Digital Program was initiated in 2019 with approval from the UK Cabinet. This included design and implementation of bespoke ICT infrastructure and tools to enable effective and efficient customer interactions and staff processes.

Microland implemented:

- A customized cloud-based solution leveraging Microsoft SaaS suite
- Dynamics CRM and Dynamics 365 portal integration for automatic case creation and communication between CRM case owner and citizens
- D365 Integration with SharePoint Online for document access and tracking in a centralized location
- Microsoft Azure Active Directory B2C to secure documents, manage customer access and custom security frameworks to help protect data confidentiality
- Microsoft Power BI to build and generate custom dashboards and reports to match council business needs



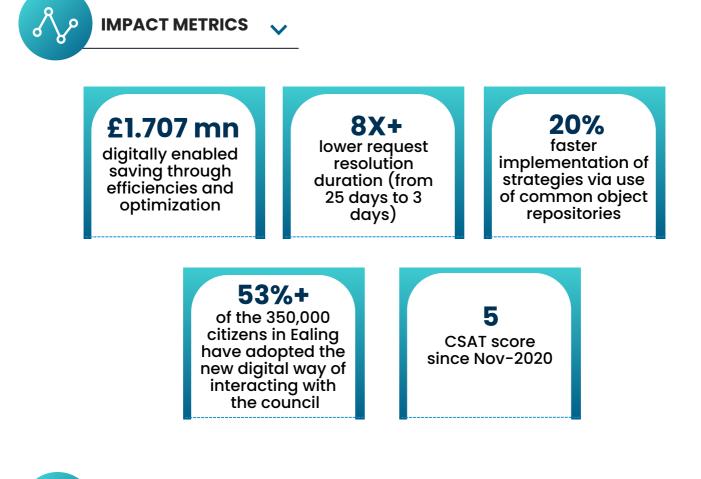


Deliver stakeholder engagement, behavioural transition and business process re-engineering to ensure viable adoption of technology into the Council's behavioural norms



- Reliance on manual processes & offline channels - high cost of operation and low citizen satisfaction
- Disparate line-ofbusiness application systems led to fragmented data silos and operations









Microland partnered with the Council to build the right fit digital transformation strategy. The solutions centered around Dynamics 365 have digitally transformed the Council-saving money, increasing efficiency and improving the delivery time for our customers.



Peter Greenham | Head IT, Ealing Council







Catalyzing Pragati's workforce readiness through Experiential Learning



CLOUD SOLUTION & APPROACH

We used Nuvepro's SaaS and cloud labs to design our experiential learning modules. Our portal now features Nuvepro's pre-configured, ready-to-use cloud laboratories, giving students access to a fully functional, real-world environment to practice and evaluate their skills.

Our students have benefited from this program in that it is allowing them to work on playgrounds, practice submissions, and track assessments more effectively. Students benefit from working on realistic scenarios to better grasp how to put what they have learned into practice.

Our students now get hands-on experience with real-world projects. Using this platform, we have covered topics on Big Data, Java FSD, MS SQL, Mean Stack, Spring Boot, Windows. Net, and Python.





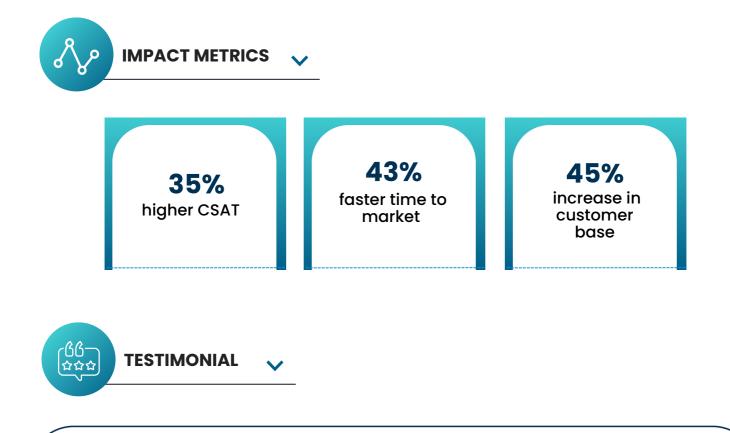


Enable students to take on challenges of the corporate world and succeed in their projects



- Lack of real-world exposure made classroom teaching too academic
- Our students faced difficulty in solving challenges based on real-world problem statements





With the rapid evolution of technology, there has been a steady widening of the skill gap. Rapid innovation and digital transformation have increased the urgency with which people must acquire new skills. Pragati has partnered with Nuvepro to launch experiential learning platforms, providing students with opportunities to acquire or hone skills relevant to the needs of the corporate world and to develop into individuals who are project-ready. This partnership helps us stand out from the crowd while also giving our clients something they can't get anywhere else: access to a large pool of quality candidates for open positions

Sagar Thakur | Assistant VP - Sales & Pre-Sales, Pragati

NASSCOM®





Effective retirement planning – anywhere, anytime!



CLOUD SOLUTION & APPROACH

The US-based top Life Insurance & Financial services provider recognized the need for bringing their health and wealth Lines of Business together to expedite retirement planning for their users.

They found that individuals who engage with their retirement plan digitally, save 52% more than those who do not. Hence, they decided to build an omnichannel experience focused on mobile and online channels to simplify retirement planning decisions and ultimately fasten retirement outcomes.

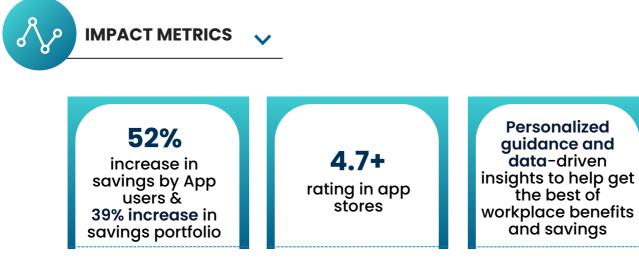
SLK co-created the cloud-based Retirement mobile application that provides:

- A simulated interactive experience to estimate retirement income
- Health savings and retirement accounts management at one place
- Smart learning on the go
- Advice and guidance on retirement planning

Also, the app helped the client clear technical debts. As part of this exercise 150+ apps were integrated through 100+ APIs built within a short timeframe of 9 months.









We have been embarking on Data Led Digital evolution in workplace benefits and savings area to enable individuals and households achieve their broader health and wealth needs towards well planned & expedited retirement. Through this connected experience, we're making it easier to be able to achieve a healthy balance of living for today, preparing for tomorrow and feeling confident about their future.



Nagesh K.P. | Data and Digital Services Head, SLK







An Online Single Window Portal (G2B) for investors in TN to get necessary business approvals



CLOUD SOLUTION & APPROACH

Tamil Nadu Ease of Doing Business (TNEoDB) is an online single window clearance system designed and developed for the Tamil Nadu State that streamlines the end-to-end process of setting up business. This portal was launched in July 2021 by Chief Minister of Tamil Nadu.

The solution serves as an investors' facilitation portal enabling investors to submit all the required documents along with the online application. This AWS cloud-based solution validates and clears applications in a timely manner, while identifying the establishments to be inspected based on computerized risk assessment

The results are clear: rapid data exchange among stakeholders and increased visibility into government policies, procedures, incentive schemes, checklist of documents, availability of infrastructure and approval timelines. Effective investor application clearance fuels business establishment.





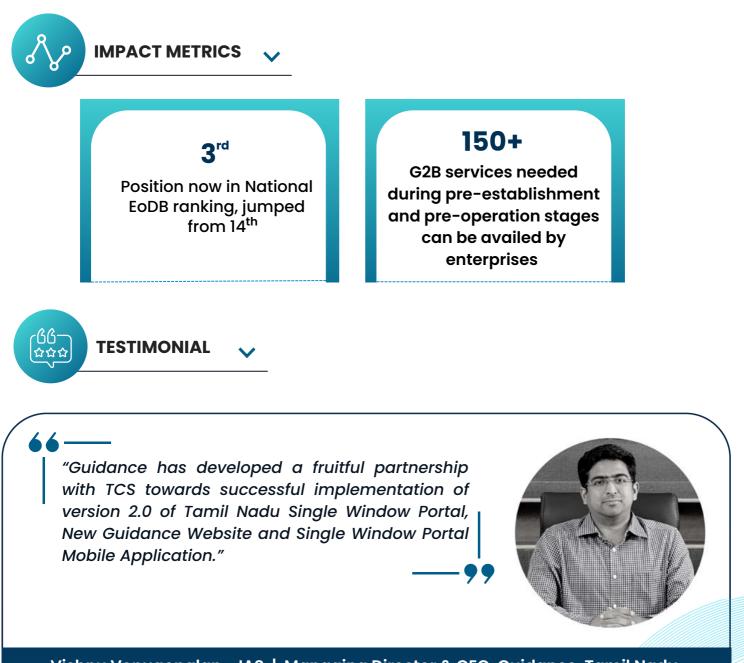


G2B Services Implementation for Tamil Nadu State Government for improving the Ease of Doing Business (EoDB)



- Limited services on old Single Window Portal hosted locally
- Not user friendly, lacked transparency, poor level of support & and services
- Physical file based documentation and managed manually





Vishnu Venugopalan - IAS | Managing Director & CEO, Guidance, Tamil Nadu





Enabling a data center exit strategy and transition to cloud for one of the largest specialty glass players in Asia



CLOUD SOLUTION & APPROACH

OBJECTIVE

Seamless transition to cloud during demerger from parent organization

Wipro's client, one of the largest specialty glass player in Asia, was demerging from its parent organization. The parent organization owned the principal IT infrastructure which was hosted at their integrated data center. The aim was to carry out the data center exit strategy seamlessly during the demerger process.

- Wipro developed an overall cloud landing zone architecture and migration solution for SAP workload, non-SAP applications, M365 and AD workload migration
- A robust cloud security solution was designed by utilizing appropriate AWS and 3rd party security services. Network connectivity was set up at the newly established HQ and at a secondary branch site
- 24*7 SAP Basis and AWS Cloud Managed Services were provided along with End User Support (EUS) services to users across countries
- Collaborated with Forcepoint, Trend Micro, etc. to strengthen infrastructure security







- Segregating IT
 infrastructure resources
- Ensuring complete network & security segmentation when shifting corporate HQ
- Aging SAP workloads
- Streamlining End User Support (EUS) services with onsite support services
- Carving out dedicated M365 tenants incl. Active Directory (AD), Teams & SharePoint from parent platforms
- Complexity of managing on-prem infra services & solutions across multiple sites



• Migrated SAP HANA workloads to uniform SUSE Linux platform on AWS cloud. It also helped move other non-SAP supporting applications to cloud

Currently, ~80% of the workloads are running on AWS. Post implementation, Wipro enhanced UX by minimizing downtime and increasing operational efficiency through the Managed Services contract.



We are delighted to win this prestigious award from NASSCOM. This recognition highlights our deep and differentiated capabilities in delivering business value through cloud-led transformation. Wipro's FullStride Cloud Services, coupled with deep domain knowledge of industries, positions us strongly as a strategic partner of choice for enterprises in India. This recognition from NASSCOM for demonstrating excellence in leveraging cloud bears testimony to the strength of our end-to-end cloud portfolio and proposition for Indian enterprises as a value orchestrator for complex business transformation

Satya Easwaran | Country Head – India, Wipro Limited







Low-code platform for Greater Chennai Corporation's Vaccination Management Portal



CLOUD SOLUTION & APPROACH

To create this citizen-centric portal, they required a platform that would handle a high magnitude of workflow and efficiently manage numerous variables & processes involved such as zones, locations, camps, bookings, forms and validation.

Using Zoho Creator (Zoho's low-code platform-a SaaS offering), they were able to create a scalable, customized, multilingual, easy-to-use, vaccine portal. 100% of the workload is in cloud.

- Ease of registration: Single-step login that redirects the user to zone selection and the available slots. A confirmation SMS is sent; a downloadable PDF of the vaccination booking is available on the portal. Cancellation was also made easy
- Improved communication: Notification feature to alert users about vaccine availability and other updates
- The portal is integrated with WhatsApp; local language support and simple interface has helped in bridging the digital divide
- The platform handled a high magnitude of workflow efficiently managing variables and processes such as zones, locations, camps, bookings, forms and validation





rate of inoculation

- Existing slot booking application was complicated and time-consuming
- Reduced accessibility due to lack of regional language system
- Risk of overcrowded vaccination centers becoming "hot-spots"
- Directing residents to the nearest vaccination centers







Greater Chennai Corporation has a dedicated platform for vaccination that was entirely built on Zoho Creator. We're very happy with the performance. It's user-friendly, has a fast processing time, and over 300,000 vaccines have already been booked via this application. Tools like Zoho Creator help create positive social impact, and we will definitely recommend the product for other backend projects in the future.



Azhagu Pandia Raja | MP, City Innovation Officer, Greater Chennai Corporation







Excellence In Leveraging Cloud For Operations



Excellence In Leveraging Cloud for Customer / Citizen Strategy

Excellence in Leveraging Cloud for Sustainability



67

Johnson Controls

Enabling building performance and efficiency

68

MSB Digital

Transforming workflow management at Honda Motorcycle and Scooter India

69

Philips

Imparting critical training skills to field engineers, hospital staff remotely

71

TCS

Bringing predictability to agricultural output using intelligence and forecasting tools







Enabling building performance and efficiency



CLOUD SOLUTION & APPROACH

The customer who is spread across geographies, wanted to have cost savings in enterprise control and reduce energy wastage & maintenance costs.

Johnson Controls:

- Audited existing Building Management System (BMS) and suggested solutions like installation of Variable drives to absorb load fluctuation
- Established metrics for operator's performance monitoring in case of fault detection
- Rewrote Fault Detection & Diagnostics rules
- Built a system to generate alerts by video analytics - vendor & users notified in real-time using SaaS based OpenBlue Enterprise Manager (OBEM) application
- Enabled customer to utilize the current pool of human resources to manage the new buildings

OBEM was currently rolled out for 42 buildings across Singapore and India. It will be further rolled out to 40 additional buildings across APAC region.



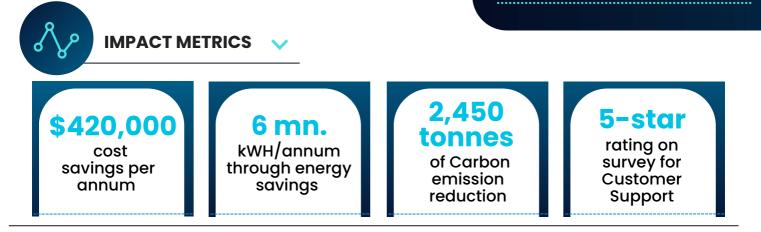




Facilitate efficient buildings to reduce energy wastage



- Customer had an expensive PaaS model
- High maintenance cost & energy wastage



NASSCOM®



MSB DOCS[™]

Transforming workflow management at Honda Motorcycle and Scooter India



CLOUD SOLUTION & APPROACH

At Honda Motorcycle and Scooter India (HMSI), myriad contracts with third parties, customers and inter-departmental contracts are signed and processed daily. Moreover, many contracts with dealers and vendors involving Free Service Coupons (FSC) and warranty cards are regularly initiated, wherein operations also generate bills against these. All this was being done manually – impacting HMSI's operations and processes.

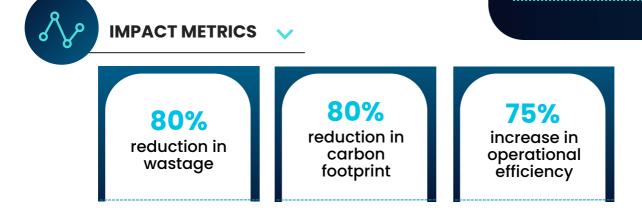
- MSB Docs designed and implemented an exclusive suite of solutions accelerating their signature process and transforming workflow management
- The Smart Document Management solution allows users to create, sign, send, store or track documents remotely via any device – eliminates physical exchange of paper documents
- Allows vendors & dealers to raise invoices digitally & get multiple approvals
- Legal sanctity of all transactions is maintained besides ensuring complete control & security







 Manual handling of contract signing & documentation process





PHILIPS

Imparting critical training skills to field engineers, hospital staff remotely



CLOUD SOLUTION & APPROACH



OBJECTIVE 🗸 🗸

Replicate a Virtual Hospital environment to provide seamless training experience to a wider group via Philips Education services

Training, Application, and Sales teams strongly depend on the Virtual Hospital trainings. Virtual machines on cloud would be a sustainable cloud solution for driving innovations & enhancing training experience.

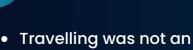
We realized that some of our machines were running on legacy operating systems and none of the current cloud infrastructure providers could give us a solution in virtualizing these systems. VMware on AWS had the unique capability of dealing with legacy OS and thus it became our infrastructure of choice.

The infrastructure is available to those who want to test their new developments with the help of virtualization. We also provide a platform for those who want to conduct continuous learning sessions across the globe 24*7.







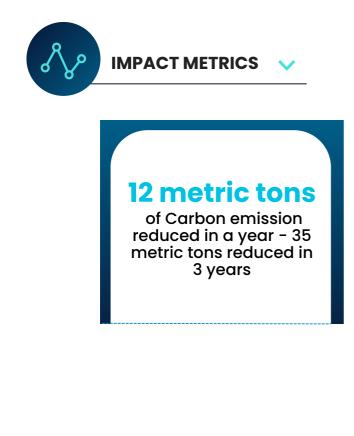


- Travelling was not an option to conduct trainings
- Mindset change: People were used to the old way of working & reluctant to move to an online training mode
- Aligning different technical teams towards one of the most critical goals
- Simulate large life size machines for knowledge transition, training



As of Q1 2022, we were conducting knowledge delivery of all the available Field Service Engineers through this infrastructure – workload was 100% running on our cloud infrastructure. This also led to use of lesser physical office space which also contributed to less energy need ,thus reducing carbon emissions.

Scalability: This training solution can be extended to new products/services; can also be used for demo/training of various hospital staff.









Bringing predictability to agricultural output using intelligence and forecasting tools



CLOUD SOLUTION & APPROACH



•Address challenges faced by farmers and associated enterprises

TCS' Digital Platform for Next Generation Agriculture (DNA), powered by AWS, has been built to address challenges faced by farmers and associated enterprises incl. agri-input companies. It is based on five pillars- social networks, mobility, analytics, cloud, and IoT - to create market- and climate-smart entities.

Technology consists of data fusion from various sources such as Satellites (having different spatial, temporal & spectral resolutions), location-based sensors, handheld devices (smartphone camera, GPS, etc.), global weather forecast systems for agriculture.

Proprietary AI/ML algorithms are applied on the observations and measurements to derive actionable insights for the agriculture sector spanning the entire value-chain.

Pan India use cases include current & relative vegetation health, root zone soil moisture, crop health, etc. with near real-time monitoring of seasonal progress.







Agriculture is becoming very vulnerable to climate change

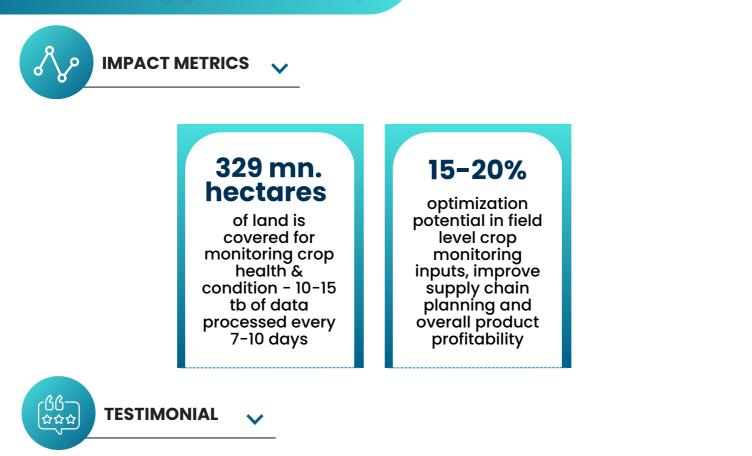
- Rainfall distribution has been disrupted; frequency of excess/ deficient rain is increasing
- Insect attacks & diseases are becoming common & difficult to predict with traditional systems
- Adverse effect on seed production

It is becoming difficult for seed growers & seed companies to plan without the right decision intelligence & forecasting tools





Excellence In Leveraging Cloud For Sustainability



Satellite-based farm scan process:

Since FY2021, the Rallis seed division has been leveraging DRISHTI to enhance the productivity of hybrid seed production.

So far, 8,000+ acres of seed production farms have been monitored through DNA surveillance.

DRISHTI is an important digital initiative of Rallis towards the Climate Smart-Ag. It allows field production executives and growers to make more informed crop management decisions to maximize return on every acre.

Sanjiv Lal | MD & CEO, Rallis India Ltd

DRISHTI surveillance helps to amplify the field scouting efficiency of the seed production team. It remotely identifies problem areas and thus significantly saves time and human efforts and assists in proactive interventions.

S Nagarajan | COO, Rallis India Ltd





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AXIS BANK Income estimation model for New-To-Bank customers

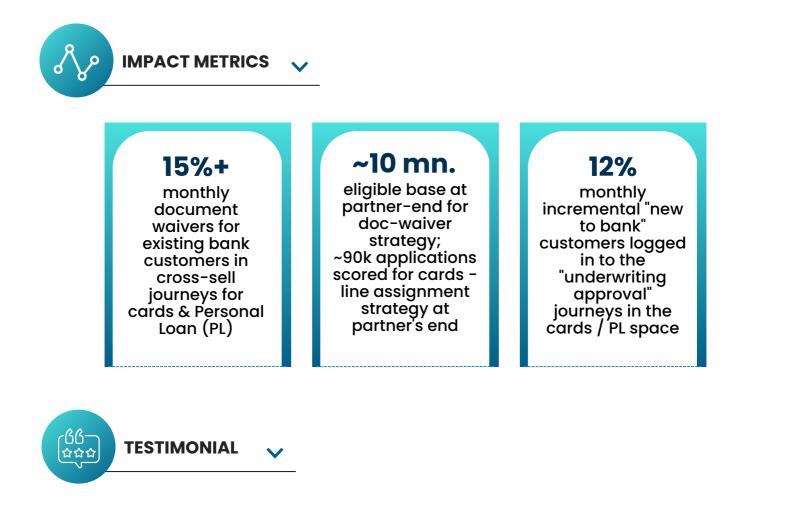


CLOUD SOLUTION & APPROACH

- While informal credit is available in many forms today, many consumers still do not have access to credit offerings from a formal institution
- Customers don't usually want to provide too many much personal details like income/ investment documents while applying for credit cards and personal loans. To provide better service to these customers, we have built non-linear model to estimate the income of customers based on their available information
- This is a first-of-its-kind, fully secure cloudbased implementation which provides seamless credit risk assessment and card issuance process
- This solution helps us scale up acquisition of new to bank customers with better product. The Income Estimation model is also deployed for internal digital sourcing for personal loans
- It also enabled waiver of uploading income document proof for significant chunk of applicants - led to significant drop-off containment







Income Estimation is a huge capability for the bank and I am happy that Data Science, Axis Bank, has been able to deliver it at such a large scale. This is not only aiding our sourcing strategies but also enabling the Bank to meet compliance asks of having an income framework for every customer. Great Job Team !!

Balaji Narayanamurthy | President, Business Intelligence Unit, Axis Bank







India's first cloud-based platform for any Central Record-Keeping Agency under NPS



CLOUD SOLUTION & APPROACH

CAMS NPS platform will provide subscriber services leveraging robust technology and deep experience in serving customers for pension account opening, record keeping and maintenance services.

CRA (Central Record-Keeping Agency) under National Pension System (NPS) is one-of-its kind deployment done by CAMS. CAMS is the first company in the last 18 years to deploy its entire CRA platform grounds up on Cloud (AWS platform) while complying with all regulations by the PFRDA. This project was launched in Aug-2021.

Cloud deployment allowed us quicker rollout of services and seamless integration with NPS ecosystem. We also implemented the two-factor authentication (2FA), again the first in this industry as per PFRDA regulator guidelines where SMS & email AWS service have been used.

The compelling value of cloud presented by CAMS led the regulator to amend the CRA platform hosting guidelines allowing hosting on cloud.



NASSCOM

EXEMPLA

Enterprise Cloud

Adoption Awards





50%

30% lower resource cost for daily BAU activities

higher productivity as team focuses mainly on customer interaction & UX 15,000

online retail subscribers since the launch, gaining 10% market share



CAMS is delighted to be recognized as "Cloud Innovator of the year". We built Central recordkeeping Agency (CRA) platform as cloud native digital platform offering National Pension products to subscribers. It is first of its kind in pension industry. We continue to bring innovations through this platform and to the industry leveraging cloud.



Mr. Ravi Kethana | Chief Platform Officer, CAMS



c⁄arnot

SIMHA KIT - Taking the guesswork out of farming operations



CLOUD SOLUTION & APPROACH

Our IoT kits collect tractor's raw location, time, speed data. The raw data itself has no other intelligence. So, we had to build a model to separate farming activities (farm boundaries) from regular commute (roads).

What we needed was a powerful computer on cloud that could do the heavy lifting of the complex computations in real-time and at a reasonable speed:

- Created a separate microservice for the farm boundary detection logic
- To show almost instantaneous boundary & area number in app, we deployed a serverless framework (AWS Lambda) with auto-triggers for the boundary detection on certain business rules
- Solution was more scalable due to its power, speed & isolation from other features
- Separated training of our AI models from the production environment. Only the trained & well tested models would be used in customer facing production environment

Innovation:

- Separating a road from a farm using time, speed, location, satellite imagery, historical data
- 3 step AI model trained on data from >1 mn. acres
- Satellite image based AFBD (Automatic Field Boundary Detection) algorithm to fine-tune the answer

Patented solution for the area detection algorithm.







To have accurate boundary detection and area computation of farms in India



PROBLEM STATEMENT V

- GPS data can be noisy even with most accurate GPS trackers
- Huge variations in farm shapes & farming patterns & activities
- Even small variations in area number can have higher error percentage
- Integrating computeheavy model with an app built for remote locations (& 2G networks)





DATAMATICS

Web application development for spot price polling for NCDEX



CLOUD SOLUTION & APPROACH

- We developed an app for NCDEX, India's leading agri-commodity exchange, which enabled them to access price quotes on demand from market participants and get those quotes entered in the central system
- Call recordings were saved for compliance purposes through integrated third-party voice calling telephony services
- Digitized data capture, centralization of data & reports
- Security: Three level security AD User Credentials (Password Encryption), OTP (Email based) and imaged based CAPTCHA
- Using voice telephony services, NCDEX was able to cover more geographics for polling







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A one-of-its-kind integrated, cashless outpatient care management platform



CLOUD SOLUTION & APPROACH

Leveraging our knowledge of the healthcare sector, we curated a quality network of 2,500+doctors, 900+ pharmacy stores and 2,100+ laboratory touchpoints across 25 cities in India and growing. We equipped all our doctors with Electronic Medical Record (EMR) systems and partnered with leading insurers to reduce/eliminate financial risk through an OPD insurance product.

Dr. Reddy Laboratory's SVAAS OPD platform is built on a cloud native architecture based on serverless computing, containerized microservices architecture, AI /ML services, API and Data Management Services while adhering to stringent compliance on data privacy and security standards.

Use-cases of how we leverage Azure services on the SVAAS OPD platform:

- High fraud incidence is a key problem for OPD insurance. SVAAS platform uses Azure Cognitive & ML to detect frauds in claims and for formulary analytics
- Uses Azure Cognitive services for assessing risk of in-patient department (IPD) intervention (hospitalization) from health risk assessment (HRA) and OPD data
- Monitoring vitals regularly is key in managing patient diseases. We devised an innovative solution using the mobile camera using Google TensorFlow–Lite and Auto ML to capture vital values from oximeter, weighing scale and BP monitor devices of multiple OEMs







Design an Integrated Cashless OPD and Wellness Platform that not only provides access to the entire treatment journey – doctor consultation, diagnostics, procurement of medicines but also helps individuals achieve better health outcomes



PROBLEM STATEMENT V

Key challenges for OPD care in India:

- Inconsistent quality of care
- Broken patient journey
- OPD expense is mostly out of pocket



• We developed an on-device Virtual Physiotherapist to detect range of motion of muscles and joints to provide real time feedback to users

The platform ensures 100 % data governance, privacy and InfoSec requirement adherence to prevent any security threats and vulnerabilities.



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NASSCOM®
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Omnichannel building and construction business



CLOUD SOLUTION & APPROACH

- Hippo Stores is a new Omnichannel business that sells building & construction products online and through stores to both B2B and retail customers. This is a first in India where the top brands of Building Material sector are available in a single online catalog
- We used public cloud to host our applications. The solution stack comprised SAP S4 HANA, Custom Open-Source Ecommerce platform powering a Progressive Web App, PaaS Point of Sale & CRM systems (with Cloud Telephony) and a custom Sales Force Automation app. The SAP implementation involved complete Order to Cash cycle along with Warehouse Management System
- The systems had to be Omnichannel from Day 1

 customers could buy in store or online and products had to be shipped from either the store or the warehouse. Promotions and offers had to be common across online and offline channels
- All systems went live in Feb-2021. COVID second wave delayed store opening until Jun-2021. Today, we have 2 stores
- We are in the process of using the cloud to store all the data that the business is generating to use as a bedrock for our future AI/ML initiatives





Launch a new business with completely integrated systems in six months during the pandemic (Jun-2020)



- Short time-lines for go live
- No time and budget to recruit team for a MVP
- Applications had to work seamlessly since limited time available to rework
- Ability to start small and grow once business scaled











Transforming the entire talent acquisition process



CLOUD SOLUTION & APPROACH

Infosys recruits about 15,000 freshers every year. This process involves multiple assessment stages and interviews. Before the pandemic hit, the costs, involved time, and resources were high. Implementing a cloud solution, provided the flexibility to scale up the number of candidates, and introduce variations in assessment type, giving it an edge over the other companies. With features like video proctoring, proactive curbing of malpractices, accessibility, and inclusivity, our solution has an edge over the others.

FY2022 statistics:

- Number of Objective tests: 885,763
- Number of Hands-On tests: 400,805
- Number of Objective + Hands-On tests: 167,538

Reimagining the talent acquisition process is helping us:

- Conduct assessments for a huge volume of candidates - reducing time to hire
- Reduced OPEX as the need for multiple thirdparty vendors is eliminated
- Improved candidate engagement
- Bias in recruitment eliminated more structured & transparent process







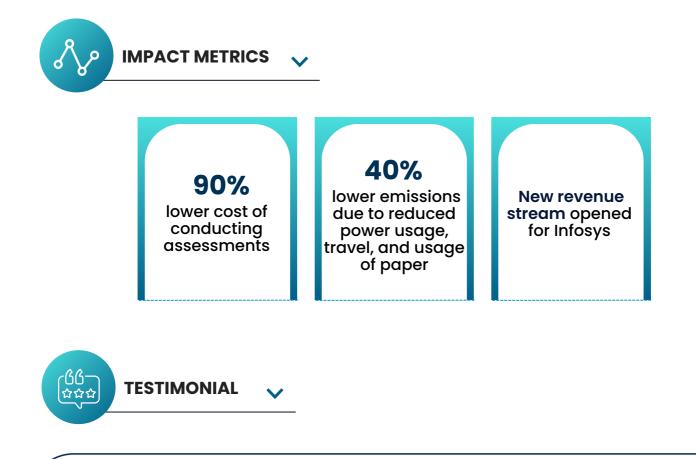
Transforming the entire talent acquisition process



 Scalability of talent acquisition process







The Infosys Assessment Platform helped the company grow by ensuring talent fulfillment in a cost-effective way. The anytime, anywhere platform provided business continuity even as the pandemic brought new hurdles.

Ajeesh G P | Senior Principal Consultant – Infosys Education, Training & Assessment, Infosys Limited





Appendix

LIST OF CASE STUDIES BY VERTICAL





Appendix



GOVERNMENT

- Brihanmumbai Municipal Corporation (BMC)
- Energy Efficiency Services Ltd.
- IIT Ropar Technology and Innovation Foundation
- Kerala State IT Mission
- Microland Ltd.
- TCS
- Zoho



• Virtusa Corporation



- Dr. Reddy's Laboratories
- Manorama Infosolutions Pvt. Ltd.
- Philips Innovation Campus
 Bengaluru



• Wipro Ltd.



• Bharat Petroleum Corporation Ltd.



TECHNOLOGY

- Areteans Technology Solutions Pvt. Ltd.
- Aujas Cybersecurity Ltd.
- CustomFit.ai
- Datamatics Global Services Ltd.
- EXL SERVICE
- Hippo Stores Technology
 Ltd.
- Infosys Ltd.
- Magnasoft Consulting
 India Pvt. Ltd.
- NatWest Group



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General Manager -Learning & Development (Technical), Amrita Vishwa Vidyapeetham



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CTO & Director -Product Engineering, Ethnus Consultancy Services Pvt Ltd



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Executive VP & Head of Cloud Business, Jio Platforms Ltd



Namrita Mahindro

Chief Digital Officer, Aditya Birla Chemicals



Pradeep Balachandran

Program Director – IBM Cloud, IBM India Software Labs



Ravi Saraogi Co-founder & President APAC, Uniphore



Rohit Chandra

VP - Connectivity, Security & Cloud, Enterprise, Vodafone Idea Ltd

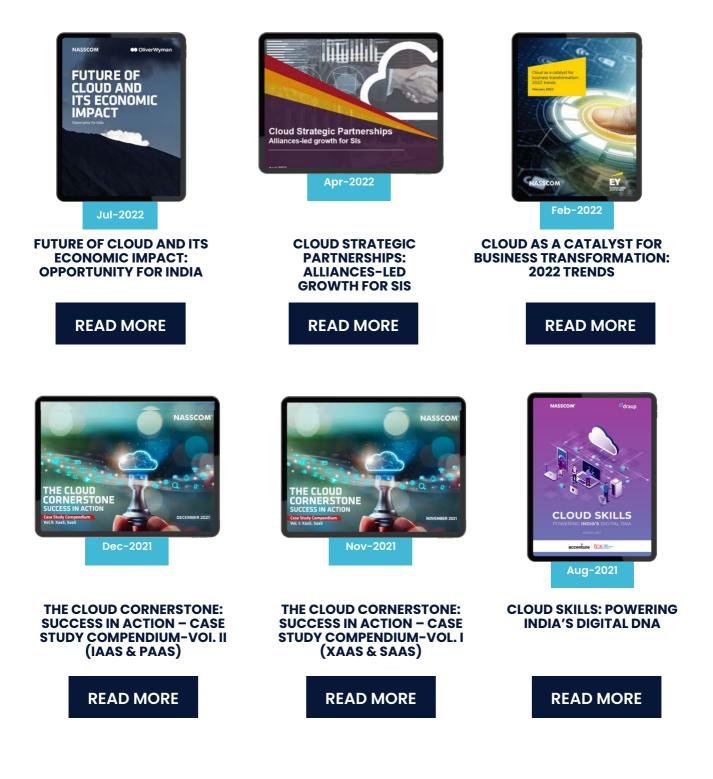








LIST OF CLOUD REPORTS BY NASSCOM







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