CLIENT SUCCESS STORY

A banking and financial organization launching brand new mobile app

The challenge

- **Native mobile app for iOS and Android platforms from a single codebase** to elevate customer experience
- Integrating with over **10+ critical upstream on-premise legacy monoliths, 5+ partner proprietary SaaS, and PaaS hosted over a public CSP** platforms with a strong web bias with a feature parity in mobile, thus offering a unified, omni-channel solution.
- Enable **biometric authentication for multiple cards in single mobile application.**
- **Continuous work-streams of auth and API migrations** to align to the cloud-centric future vision of the organization.

The solution

- A strong cross-skilling of **iOS and Android native app as well as cross-platform Dart language and Flutter framework.**
- Regression suite on a large-scale device farm to reduce testing time frames and performance testing of mobile app rendering & network speed, **device content caching to augment Adobe AEM**, and achieving nearly 90% UI code coverage (15% above initial target)
- **API-first integration strategy** of a robust architecture **of continuously evolving backend** in a seamless migration from legacy mainframe & private cloud hosted proprietary auth & API platform to a cloud-native target landscape.

The benefit

- Improved customer loyalty driven by the app's user-friendly **frictionless experience & focus on efficient self-service.**
- A reusable framework that enhances **reduction of time-to-market to onboard new client brands** as well as add new Credit Card products
- **Uniform content, campaigns, analytics and insights across front-end channels using Adobe AEM as cross-platform solution**
- **Quicker response/resolution times through dynamic remote monitoring**
- **Early feedback from clients** like Amex provided confidence to client, allowing them to adopt a mobile-first strategy

150+
Bread partner brands integration with mobile application

>2.5M
Daily customer usage

100%
DevOps integration to deploy code, unit testing and automation testing

Brand partners
Reduced time to market for new brand partner integration by maximizing reusable components

Improve CX
Enhanced customer experience through simple UI and smooth animations

Engineering led Transformation of legacy Core Banking System for a US based “Big Four” bank

virtusa

Challenges

- Client’s core platform operated as a very complex ledger system
- Platform evolution required extensive coordination
- Inefficiencies and risk in manual testing for a core banking product
- Delayed time-to-market

Solution

- New GBP core provides modern, cloud-native platform ecosystem that supports fast and innovative product development
- Built framework to replace legacy ETL jobs to modern/custom platform (**Data Pipeline**).
- Built **scalable** GBP Core Capability layer - APGs Implementation for fees & rewards, settlement etc.
- Utilized Karate/Springboot for integrated component testing and developed an acceptance test framework for **Built-in Quality**
- **Reusable APIs** for POS users to make product payments in 4 installments

The benefit

- Enabled fast and innovative product delivery
- Reduced risk on a modern, secure, API-driven cloud-based platform.
- Speed to Market - New offerings with minimal configuration and code + Built-in Quality
- Helps consolidate client LOBs into a single core ledger, TM-Vault, and refine delineations between platform, product, and cross impact components,
- Enabled seamless integration and enhanced operational efficiency

56%
Reduction in Costs

90%
Reduction in Manual Testing Effort

750 Services | 80 Batches

Processing Millions of records

~ 7000
Live pages rolled out with multi-tenant & Multilingual

Outcome Driven Digital Transformation through POD model execution for a US based global Investment Banking firm

virtusa

Business Challenge

- Legacy development model across multiple cross platform teams
- Compliance / Regulatory projects missing timelines impacting Lead Time to Market
- Inconsistent Agile adoption and standardization across LOBs
- Non-standard ways to measure ROI, business value generation, and cost optimization
- Incumbent vendors failed to take ownership , scale faster and quantify outcomes delivered

Solution

- Outcome driven engagement model, driven by governance of standardized metrics
- Non-Value time reduction through increased DevOps adoption and automation across SDLC
- Strategic investments in academy model for upskill in engineering/ domain
- Agile POD-based delivery with optimized feature teams, operating at L3 maturity in just 2 quarters
- Specialized Frameworks & Common Interfaces to host multiple systems, security & sessions management

Solution Benefits

- Outcome Driven Model with measurable outputs for > 55+ PODS
- Zero Delivery code red
- Deployment of Pods globally with 2-3 weeks of lead time
- 90% enhanced Employee NPS through academy model
- E2E automation across engineering lifecycle

25 - 30% Faster to Market
Improved productivity from **45 to 65 SPs per sprint** over 2 -3 quarters

20-25% Increase in Deployment Frequency

Increased Quality < 0.1%
defect leakage to higher and prod environments

65% Reduction in Manual Effort
~ 85% test automation coverage

SUCCESS STORIES

Rationalization/Transformation of Legacy Applications into Strategic suite

The challenge

- **Legacy Applications (10+)** rationalization required due to **EoSL**.
- Target to achieve **fibre rollout to 25 million homes by 2025.**
- Delays caused by **manual updates due to planners accessing duplicate capabilities** in different systems.
- Challenges with parallel **operation of Legacy and strategic systems**
- **Implementing DevOps** with legacy technologies.

The solution

- Legacy application rationalization into a strategic application with **multi-experience designs with digital touchpoints like web, mobile, chat.**
- Workflow automation for **faster rollouts and reduced operational costs**
- Improved user experience with technologies like **Angular, Java Springboot microservices-based architecture with KAFKA and Golden Gate** integration deployed on **MuleSoft middleware.**
- Implementation of **CI/CD pipelines, Test Automation and Agile** methodology for accelerated rollouts.

The benefit

- Pre-defined **order processing templates and Automated service provisioning**.
- **Automated interaction** between systems for **faster rollouts with enhanced security**
- Deployment of new **strategic system within 18 months with faster and accurate order processing.**
- **Role-based migration of over 15K users** to a single strategic system.
- Migration of over **10 years of legacy data** to a centralized single strategic system.
- Accurate reporting leading to **faster decision making**

80%
Reduction time in order processing and rollout

>$250M
Savings from TIBCO license and platform maintenance cost.
.

95%
Increase in stability of environments

Improved SDLC
Rollout due Agile way of working with integrated business development, test and operations teams

Interactive UI
Enhanced and Interactive User Interface.

CLIENT SUCCESS STORY

Reimagining field service experience for Global communication services provider

The challenge

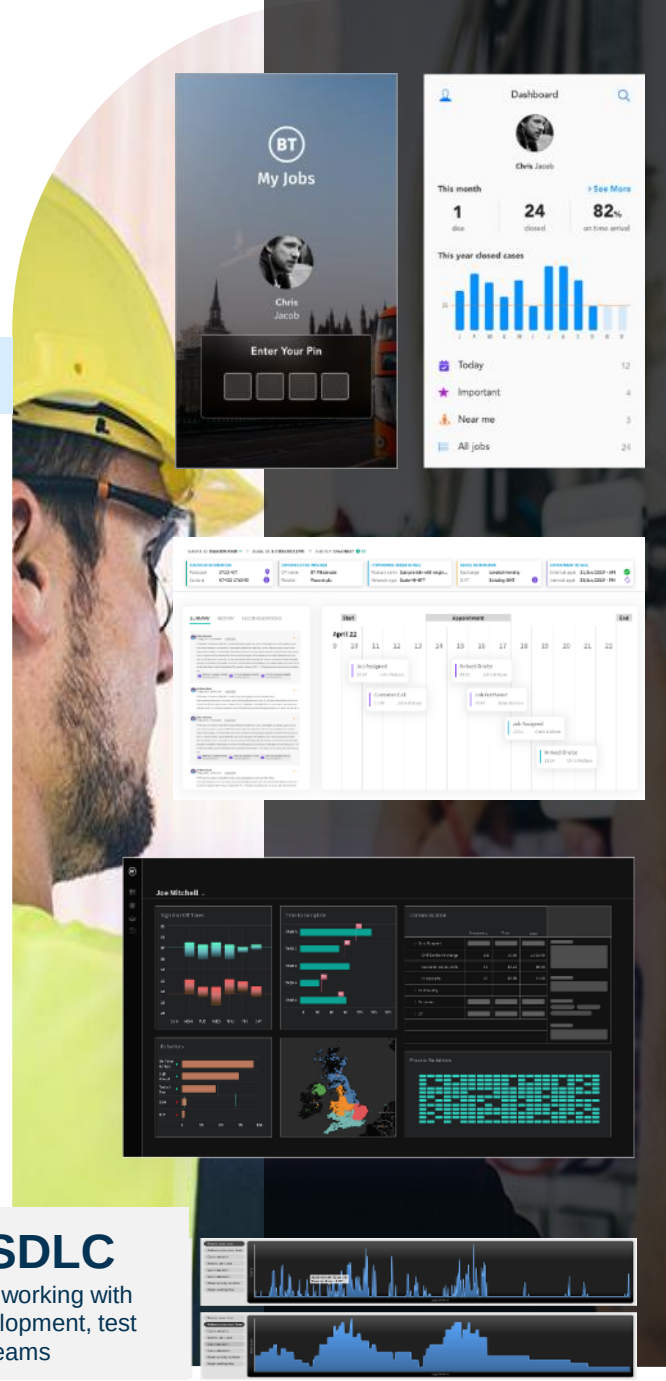
- **Low productivity of field engineers**, averaging 4 visits per day, resulting in high OPEX.
- **Significant operational costs** associated with approximately 470 DCoE back-team members handling backend work.
- **Engineers spending approximately 15 minutes per job on calls** with the DCoE team to carry out tasks.

The solution

- **Virtusa improved engineer efficacy and optimized operational costs** through process analysis and reimagining of engineer, support, and monitoring experiences.
- Implemented self-service, Intelligence and Insights Hub capabilities for engineers
  - **Enhanced engineer** experience
  - **Improved support** experience
  - **Enhanced monitoring** experience
- Implementation of **CI/CD pipelines, Test Automation and Agile** methodology for accelerated rollouts.

The benefit

- Reduction in average job handling time from **1.56 h / job** to **18-22 m / job**
- Field engineers' **productivity was improved drastically**
- **Reduction in OPEX** cost per annum
- **Reduction in calls** through social acceleration



~ $1.2 M
Reduction in OPEX per annum (first year)

~70-80%
Reduction in calls through social acceleration

~$300K
Reduction per annum through optimization of leads to the desk team

Improved SDLC
Rollout due Agile way of working with integrated business development, test and operations teams

CLIENT SUCCESS STORY

A Middle Eastern bank is using Virtusa's OIP for building an Innovation ecosystem

virtusa

The challenge

Identify and evaluate FinTechs faster and collaboratively develop POCs with them

Prior to OIP, it took the client a few months to identify, evaluate and develop the right POCs with FinTechs

The client wanted to introduce Open Banking Compliance in the Middle East region

The solution

OIP hosted on AWS Cloud, is an online marketplace in which external FinTechs can self-onboard and the platform admin can then evaluate these FinTechs and provide them access to the platform

Open Banking APIs, Smart Bank APIs and a curated list of 3rd party FinTech APIs are available on the platform for plug and play functionalities

Ability to custom create APIs and endpoints manipulating the SmartBank database

The benefit

Reduced time to evaluation of FinTechs from months to days

Faster POC creation and validation of use cases utilizing the Virtusa SmartBank dataset

First in the industry to introduce Open Banking compliance in the Middle Eastern region.

Access to Open Banking APIs for all the FinTechs

saudigazette.com.s

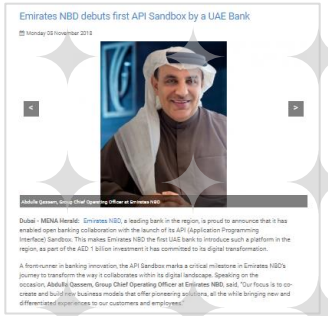

Emirates NBD unveils its first API Sandbox

DUBAI —

Emirates NBD, a leading bank in the region, has enabled open banking collaboration with the launch of its API (Application Programming Interface) Sandbox. This makes Emirates NBD the first UAE bank to introduce such a platform in the region, as part of the AED 1 billion investment it has committed to its digital transformation.

A front-runner in banking innovation, the API Sandbox marks a critical milestone in Emirates NBD's journey to transform the way it collaborates within its digital landscape. Speaking on the occasion, Abdulla Qassem, Group Chief Operating Officer at Emirates NBD, said, "Our focus is to co-create and build new business models that offer pioneering solutions, all the while bringing new and differentiated experiences to our customers and employees."

www.menaherald.com


Emirates NBD debuts first API Sandbox by a UAE Bank

Monday 05 November 2018

Abdulla Qassem, Group Chief Operating Officer at Emirates NBD

Dubai - MENA Herald: Emirates NBD, a leading bank in the region, is proud to announce that it has enabled open banking collaboration with the launch of its API (Application Programming Interface) Sandbox. This makes Emirates NBD the first UAE bank to introduce such a platform in the region, as part of the AED 1 billion investment it has committed to its digital transformation.

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"Emirates NBD has been happy to partner with Virtusa to debut the first API Sandbox by a UAE Bank. This collaboration has enabled us to offer the right tools for enterprising FinTechs and developers who can now turn…"

Evans Munyuki, Chief Digital Officer, Emirates NBD

Transformed Service Operation for a Global US Bank using Conversational AI

virtusa

Global Footprint

20,000 + Agents

Spend

~ $500 MM

160 MM calls per year

NLP Chatbots & IVR

Challenge

- To increase customer self-service, Improve customer experience, reduce cycle time, reduce service cost, optimize efficiency and increase conversation containment rate across channels.
- Develop technology, engineering and capacity model for scaling across 22000 IVR numbers and 50+ self and brand partners.

Solution

- **Virtusa built a conversational and IVR solution powered by Voice Bots**. This includes features like:

1. **IVR + intelligent conversational bots**
2. **AI powered product engine** for personalized solutions to customers.
3. **Self-Learning Bots** to learn newer intents and ability to hold longer context switching conversations.
4. **Augmented analytics** for context sensitive conversation
5. **Inbuilt API's** to navigate through process life cycle to reduce manual intervention

Results & Benefits

- **Reusable Assets**: Common Bot flows across accounts, Domain Ontology, NLP Data Assets Creation: Ex: ML model re-train, test and deployment and hyper param tuning
- Customer Query Inferencing Engine & feedback Assessment – NLP tool Dashboard
- **20MM consumers and 43 retail partners live usage. Avg savings $3MM/Annum**
- **Highest containment rate – Ability to sustain human BOT interactions to as high as 7 Mins**

90%
Confidence Score / True intent match

Zero Wait Time
Call wait time reduced to Zero through BOTS

6 MM Savings
Cumulative savings of 6 MM over two years

$13 to S0.6
Cost per conversation reduced from $13 to $0.6

Reusable Assets
Effort reduction through creation of reusable assets

CLIENT SUCCESS STORY

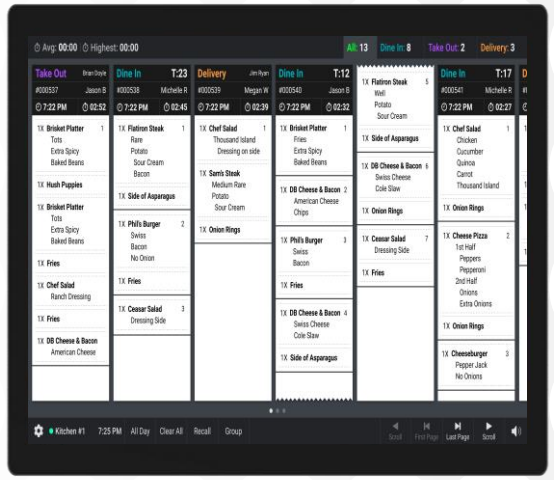
Modern, Intelligent, Easy-to-use Kitchen Display System (KDS) for in-store kitchen operations

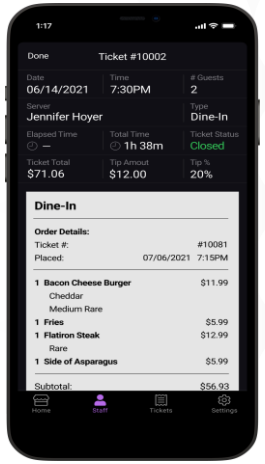
The challenge

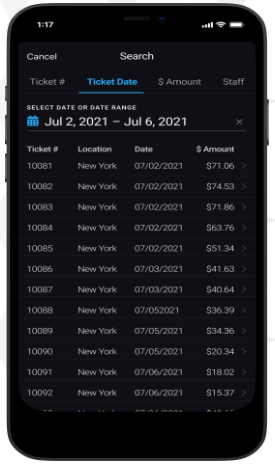
- Manual Paper tickets served as the primary order management system in restaurants.
- Absence of a proper system for sequentially **viewing orders, order types and accessing accurate cooking details.**
- Absence of **integration between Point of Sale (POS) and Kitchen Display Systems (KDS)**, resulting in a lack of seamless communication and coordination between these systems.

The solution

- **User-friendly Kitchen Display System (KDS)** specifically designed for
  - in-store kitchen operations and
  - seamless **integration with the Point-of-Sale system**
- Virtusa conducted a **market analysis and examined the practices of competitors to ensure that the Kitchen Display System (KDS)** adheres to modern design standards while meeting the specific needs of different order types.
- Develop a native **Android application for a custom 22'' tablet using Kotlin, Android Studio** to enhance the app's functionality and user experience.
- **KDS would leverage analytics to enhance efficiency and streamline kitchen operations** by focusing on important and critical information.







> 30 folds
Increase in client base
(8 to 250 in 10 months)

100%
Reduction in manual work and replaced paper-based work

Device Compatibility
Possibility to use in any Android device

Improved SDLC
Rollout due to Agile way of working with integrated business development, test and operations teams

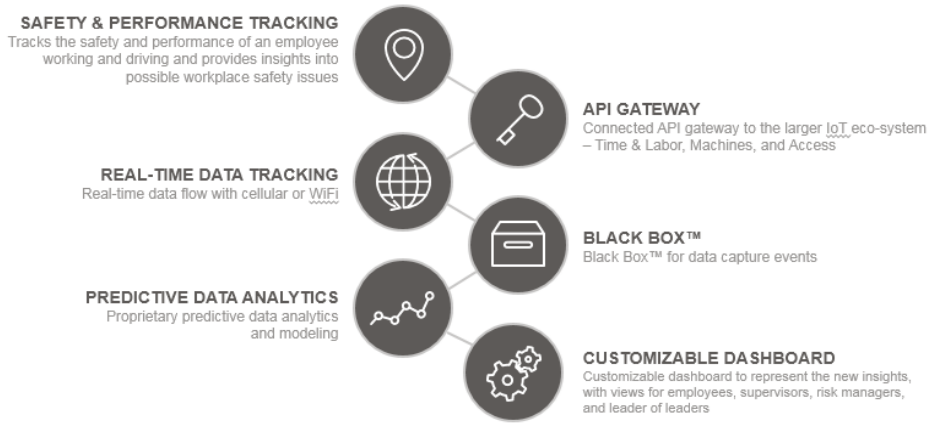
Interactive UI
Enhanced and Interactive User Interface.

Virtusa improves workers' safety and lowers claims with Modjoul. A 4IR based solution IOT, AI/ML & AR/VR

virtusa

modjoul

Wearable device enabled healthcare and workers safety solution with remote monitoring and management facility

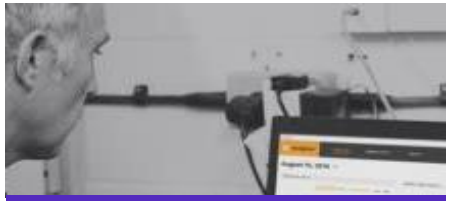


Data gathered

The modjoul belt becomes a part of the employee's uniform. Employee works as they normally do, and the sensor data is transmitted either through Wi-Fi or cellular to the cloud.

Metrics presented

The encrypted data is received and then used in proprietary formulas and models to present metrics in unique dashboards for the employee, supervisor and risk manager.



Reports analyzed

The dashboard reports are viewed online via mobile device or web browser, where the data can be analyzed and actioned.

The challenge

- A disconnected work environment.
- Injuries in workplace are occurring without any clear or practical resolutions.
- Work is not being tracked, analyzed, or used in a meaningful manner.
- Collecting and analyzing work metrics is a time consuming, error-prone task

Features

- Provides insights into actual work being performed, increasing workplace performance and safety.
- Customizable sensors track work, injury occurrence, and provide the data needed to prevent similar occurrences in the future.
- Easy to use and seamlessly integrated into normal working atmosphere and conditions.

The benefits

- Productivity savings of 5% -10% from reduction of idle time and work-rate improvements
- Better or more accurate workplace data metrics
- Employee injuries and accidents are reduced. Helped to reduce the Worker compensation claim by 20%

A Digital Health Platform for pre and post operative orthopedic care

CHALLENGE

A leading global orthopaedic company was struggling to:

- Provide a **consolidated care platform for orthopaedic replacement surgery** catering to the needs of both the Provider staff (HCPs) and the patients.
- **Reduce overall surgery costs** and deliver **better patient outcomes**
- **Patient centric personalized care plans**
- Enhance **overall patient journey** from onboarding to post-surgery.

SOLUTION

- Human centric **UX design, rapid prototypes using standards-based UI accelerator**.
- Leveraged **AI/ML** platform for **risk stratification** to highlight potential post-surgery risks related to re-admissions and others.
- **HIPAA & GDPR** compliant, HLS standard **HL7/FHIR** messaging, **microservices** hosted on **service mesh** integrating with **EHR** system**.**
- Establish **digital communication and coordination channel** with patients via **telemedicine** right from onboarding to post surgery care.
- **Azure IoT** to manage robotic assisted surgery devices.
- About **4-6 agile squads** delivered about **25-40 velocity** points across sprints.

BENEFITS

Patient Outcomes:

- **Better insights into post-surgery risks** related to re-admissions and other complications.
- **Accelerated decision making** via a single consolidated care platform
- Post **surgery patient-care** and therapy and personal follow-ups

Provider Outcomes:

- HCP-patient post-surgery follow ups and monitoring.
- Patient **historical data extracted from EHR** used for decision making.
- Platform **extensible to onboard other orthopaedic replacement** surgeries

Used in 8-10 hospitals across USA

>1000 patients
Are using this app shortly after go-live

Improved Patient Outcomes
Pre-surgery insights into post-surgery risks of re-admissions.

Enhanced Quality Healthcare
HCPs can monitor rehab process post surgery.

- Success Story

virtusa

Peritoneal Home Dialysis via a Connected Health Platform

CHALLENGE

A top renal care provider in the US was looking for a platform that:

- Enables coordinated care by clinical staff, providers and physicians.
- **Enhances peritoneal home-dialysis patient experience** through the Connected Health Platform.

SOLUTION

Comprises of 2 core components:

1. An **IoT solution built on ThingWorx and hosted on Azure cloud** that provides connectivity to the dialysis device that facilitates treatment programming and collection of pre- and post-dialysis vital signs.

2. A platform built on .Net Core and React JS frameworks, enables **remote monitoring of treatment and clinical data** by the clinical staff and technical support team.

Design Principles and Methodologies:

- **Human centered approach** to patient experience.
- **API-led, microservices based platform** with **event driven architecture, DevSecOps** baked into the design.
- Adopted industry standard **agile best practices** delivered by 3 core agile squads across the program.

BENEFITS

Patient Outcomes:

- Reduced patient round-trips to the hospital.
- Remote continuous refinement of treatment parameters resulting in improved therapy outcome.
- Addresses mobility related challenges for patients with disabilities.

Provider Outcomes:

- Remote therapy monitoring and management.
- Reduced operational cost due to reduced patient foot-fall within the hospital premises.
- HCPs have near real-time access to patient's response to dialysis therapy.

2.6M Treatments
67 clinics across USA

>50000 patients
Are benefiting from this Connected Health Platform

Improved Patient Outcomes
Reduced trips to hospitals for dialysis therapies

Enhanced Quality Healthcare
HCPs can monitor rehab process post surgery.

- Success Story

virtusa

Enhancing a clinical trials platform aiding plasma donation during Covid19

CHALLENGE

A leading clinical trials platform provider in the US was targeting to **enable plasma donation, collection, storage and testing capabilities to support plasma donation drives** across 275 donor sites across USA, Germany and Hungary, **during the peak Covid19 surge period**.

SOLUTION

Virtusa introduced a **new service line to handle plasma donation on their clinical trail platform** that enabled the following capabilities:

- Plasma donor onboarding at the donor sites, vitals check, physician review and approval.
- Blood sample collection, transfer to operations, plasma extraction, assessment, storage, lab tests and final results
- Hand off to logistics to transport plasma to a centralized warehouse for further downstream delivery to the needy.
- Archive donor status for historical tracking.

Human centered approach to donor and HCP, Technician and Phlebotomist persona experiences.

Microservices based solution using **Docker, EC2 and EKS on AWS, Springboot, Spring Security and React JS, Postgres and MongoDB.**

Adopted industry standard **agile best practices** delivered by 4 core agile squads across USA and India locations.

BENEFITS

Platform Provider Outcomes:

- Expedited plasma collection and verification process enabling faster transportation of plasma to the needy.
- Help humanity, save lives during the peak Covid19 pandemic..

Donor Outcomes:

- Expedited donor registration, appointment and onboarding.
- Physician’s assessment about donor’s healthy vitals and fitment for plasma donation.

Recipient Outcomes:

- Potential life saver.

275 Donor Sites
3 Warehouses

20MM donations/year
And growing.

600K new donors/year
Reduced trips to hospitals for dialysis therapies

Expedited Plasma Collection
25000 concurrent users

Innovating the e2e Business Model powered by Microservices and Digitization

virtusa

Business Challenge

- Optimize the massive inventory of services
- Monitor the functionality efficiently and effectively.
- **Reduce** future running and maintenance **costs**
- Incorporate AI**/ML** to its technology portfolio

Solution

- Migrating Client monolithic systems into small Microservices
- Enabled **predictive modeling** use cases using Domino
- Leverage MuleSoft capabilities as an external gateway for new LOB
- Operational efficiency and higher availability of resources by migrating to AWS MSK
- RTM enables NYL to manage mule service on NYL-AWS account on a run-time framework

Solution Benefits

- **Modernized systems** with cloud Infrastructure and pipeline for new LOBs
- Mule RTF delivers **secure, reliable and highly maintainable** communications with 3rd party vendors.
- **AI/ML accelerated** underwriting with minimal information using historic data, digital information and pricing analytics
- **Reusable test assets** (regression test suite) provided to business
- cost benefit on MuleSoft licensing when API migrating to self-managed run-time framework, provides massive

Effective utilization in MuleSoft to reduce cost

800+ API Migrated to self-managed run-time framework

Approx 100+ API migrated to AKS

Engineering Partner for Payroll and HR Platform to help gain competitive advantage

The challenge

Due to Monolith Legacy platform

- Speed to market is a challenge
- loss in customer base
- customer experience is deteriorating

The solution

- **Modernized** PowerBuilder monolith to Microservices and API platform with intuitive micro front ends and built a Modern HCM portal application using .Net Stack
- **Develop new products/modules/reports** and services as part of Paycor platform that is scalable and cost effective to maintain with ease of integration and partner acquisition through APIs
- **Mobile Application –** Build mobile application 50% faster due to our Microservices architecture & design to support Expense Management module/feature of PayCor
- **Data Migration**: Migrated transactional data from Monolith database to **Snowflake** Reporting database to improve performance

The benefit

- Increased **onboarding** (PEPM - Per employee Per Month) by **8%** for year 2022
- **Improved PayCor's client / Customer experience** through intuitive UI and self service

50%
Reduced time taken to integrate partners by

10 times
Faster report generation

5 times
Increase in customer base

Scalable
Cloud native, microservices architecture for performant, scalable, reliable, maintainable and recoverability

Intuitive UX
Simple and intuitive user experience for easy adoption and stickiness.