BIOMIMICRY AND CX MODERNIZATION

Legacy modernization is a looming challenge and a pressing priority for organizations seeking to become agile and responsive. Just as customers demand seamless service, sales personnel also expect intuitive interfaces that simplify tasks and enhance productivity. However, ill-executed modernization journeys hold risks that can result in significant business disruption, user dissatisfaction and negative business impact. This paper examines how organizations can leverage biomimicry for legacy to CX modernization. It further describes various frameworks and stages that will help organizations de-risk their modernization journeys and rapidly achieve benefits of lower TCO, higher productivity and automation.

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What is biomimicry?

For long, humans have drawn inspiration from nature to solve real-world problems. Consider how the 'Shinkansen' or the Japanese bullet train that revolutionized mass transport is inspired by the shape of a kingfisher's beak that allows the bird to dive smoothly into water with a minimal splash. Or how the deep-sea whistling of dolphins led to the design of tsunami early warning systems. Even the design of the highly sensitive biometric neuro-probe is based on how mosquitoes penetrate the human skin with ease. These are examples of biomimicry. All that is needed is an eye for detail and creativity to find solutions to existing problems.

Strangler Application Pattern

Nearly 15 years ago, Martin Fowler observed how strangler vines gradually seed themselves onto a Fig Tree, the host, forming beautiful patterns but eventually strangling and killing the host. Being an enterprise architect, Martin identified that this process was quite similar to the relationship between legacy and modern systems. He termed this concept the 'Strangler Application Pattern' whereby modern enterprises could 'kill' their outdated, bulky and costly legacy applications (synonymous with the fig tree) by replacing them with modernized systems (the strangler vines). This was a classic case of biomimicry in the field of information technology wherein the transition happens over a period of time with minimal disruption.

Let's understand Legacy…

Over the past few decades, IT systems have transformed from simplistic form-based systems to client-server models followed by niche on-premises enterprise packaged products with advanced integration frameworks, and finally, to a wide bouquet of new-age technologies like blockchain, cloud, Internet-of-Things, machine learning (ML), artificial intelligence (AI), etc. When faced with such rapid evolution, legacy systems are unable to adapt, stay relevant and cater to the needs of the new marketplace. In some cases, the ability to adapt comes at a prohibitively high cost. Despite their disadvantages,

however, legacy systems have a very high degree of technical flexibility and extreme customization capabilities.

By definition, a legacy system has either all or a combination of the following attributes:

- Inability to digitally scale up owing to limited real-time intelligence, mobile and social capabilities

- Long time-to-market due to lengthy change and implementation cycles

- Technologically-heavy with outdated rules, codes and configurations leading to lengthy application upgrade lifecycles

- High costs through steep one-time capex and continuous opex

- Manually intensive due to the need for additional skills to maintain servers, databases and applications

- IT-dependent with limited control among business teams

Let us explore the challenges of legacy systems through an example. A leading South Asia-based insurance company was using a robust mainframe application to run and support all its core insurance business processes. However, the application was over 30 years old with millions of lines of codes for a number of outdated as well as current underwriting rules. As an archaic application, neither could it sync with the digital world nor was there anyone who knew the application in its entirety. Recently, on realizing that the company's market share was declining, the company requested Infosys team to understand the root cause by liaising with key stakeholders. - Upon completing the study, it was discovered that agents and brokers were reluctant to sell products from the company concerned, instead preferred products from competitors that provided them with an omni-channel yet simplified selling experience thereby reducing their selling time.

This is a clear example of operational legacy systems that are unable to address dynamic market demands with far-reaching business implications. More significantly, the challenges of legacy systems are not defects to be fixed rather they represent the inability of such applications to scale, sustain and cater to today's use cases. Over time, the gap between the business and market demand widens, leading to loss of market share and revenue.

And the Modern CX Application too

Modern CX applications put the customer-employee connect at the center. They come with omni-channel capabilities and in-built intelligence for a fully digitized journey that gives employees deep contextual customer insights. Above all, these applications are fully scalable for the business and technological demands of today and tomorrow.

The customer-employee connect can exist across marketing, sales or customer service functions. Channels include in-person, telephone, social, or mobile. Thus, such applications empower employees with a channel-agnostic yet consistent employee experience. CX applications also include several features that boost employee productivity and amplify their ability to better connect with customers.

Modern CX systems help organizations achieve benefits such as:

- Lower TCO through cloud-enabled pay-as-you-go models

- Business-centric processes that speedily deploy new rules including application upgrades with minimal business disruption and faster time-to-market

- Digital scalability with the ability to weave multiple next generation use cases leveraging AI/ML, big data, analytics, and more around existing business processes

- Anytime, anywhere access to data and processes for personas across devices, including offline capabilities

To give an example, an American insurance and financial services company modernized their CX marketing application by implementing Oracle CX Cloud Marketing. They leveraged big data insights to create precise marketing strategies across various social, mobile and email channels. Such insights were unavailable to them on the old legacy marketing platform.

The Twin Conundrums

When it comes to CX modernization, nearly every global enterprise faces two major questions?

- Since existing investments work fine, do we need to replace them with a modern digital CX platform?

- How do we modernize legacy systems and make them relevant in a digital age with minimal risk to business continuity?

A recent study by PwC on customer experience highlights the following trends:

- Good experience is the winning strategy – Close to 54% of customers want a better customer experience

- Cross-channel convenience is a must – Seamless transition from tablet to smartphone to desktop to human agents is a basic customer expectation

- Bad experience causes customer churn – 32% customers will walk away from a brand they love after one bad experience

These trends clearly indicate that CX modernization is vital. Enterprises that are yet to incorporate customer experience in their organizational strategy may find themselves lagging behind the competition. Thus, the key question organizations should ask is not whether they should implement CX but how they should drive CX transformation.

De-risking CX modernization using the Strangler Application Pattern

The journey from legacy to modern CX can be challenging and risky owing to the sheer amount of change management needed, which can result in business disruption, potential brand erosion and, eventually, customer churn. Thus, it is imperative to adopt a CX modernization journey that is smooth, seamless and risk-free.

CX modernization journeys can be de-risked by adopting a staged approach. For instance, the Strangler Application Pattern ensures exactly this type of gradual modernization as shown in Fig 1.
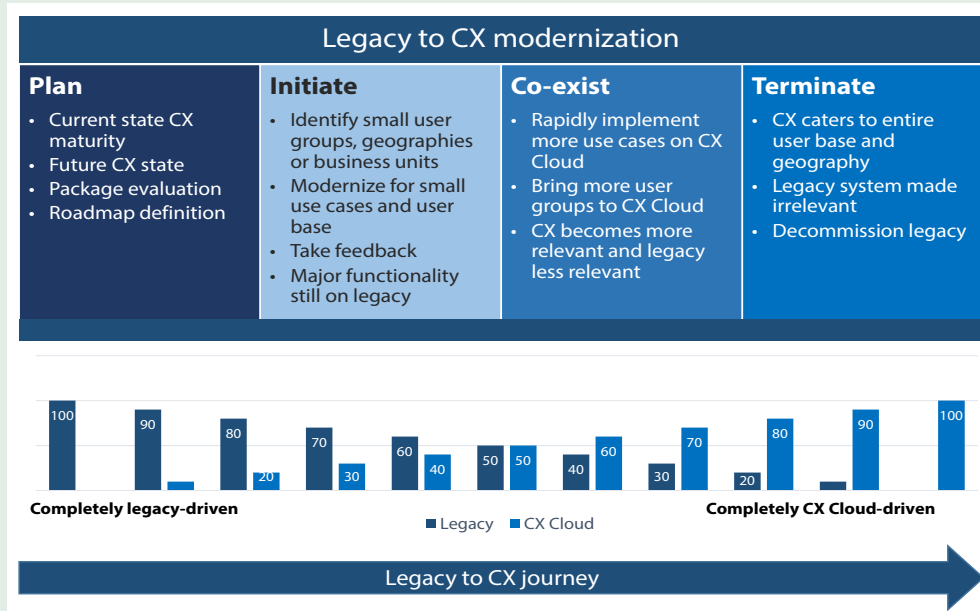
Legacy to CX modernization

Plan	Initiate	Co-exist	Terminate
• Current state CX maturity • Future CX state • Package evaluation • Roadmap definition	• Identify small user groups, geographies or business units • Modernize for small use cases and user base • Take feedback • Major functionality still on legacy	• Rapidly implement more use cases on CX Cloud • Bring more user groups to CX Cloud • CX becomes more relevant and legacy less relevant	• CX caters to entire user base and geography • Legacy system made irrelevant • Decommission legacy

Completely legacy-driven — 100, 90/20, 80/20, 70/30, 60/40, 50/50, 40/60, 30/70, 20/80, 90, 100 — Completely CX Cloud-driven

■ Legacy ■ CX Cloud

Legacy to CX journey

Fig 1: Phased approach to modernize CX from legacy

To begin with, organizations must create a robust plan as the foundation for the entire modernization journey. Then, during the 'initiate' phase, the new CX application gets seeded into the enterprise landscape. The 'co-exist' phase allows rapid scaling up of the capabilities of the new CX application over the legacy system. Finally, the journey concludes at the 'terminate' phase where the legacy system is made irrelevant by the CX application. Let us explore each of these four phases in detail.

Plan

Planning is the most important aspect of a modernization journey and yet the most overlooked. A significant amount of time and investment must be spent to get the right plan in place as this will set the direction for rest of the modernization journey. Organizations must conduct a self-assessment on CX maturity to prepare for cultural and operational challenges. For instance, the young millennial workforce is often quick to embrace such transformation while others may resist change owing to related issues that could manifest after transformation. Thus, it is imperative for organizations to predict and preemptively address these concerns and challenges.

Fig 2 illustrates the Infosys CX Strategy Development Framework for companies to leverage during the planning phase. This framework encompasses four stages, namely, assessing the current state CX maturity, defining the future state CX, choosing the right technology for the future state, and defining the roadmap.
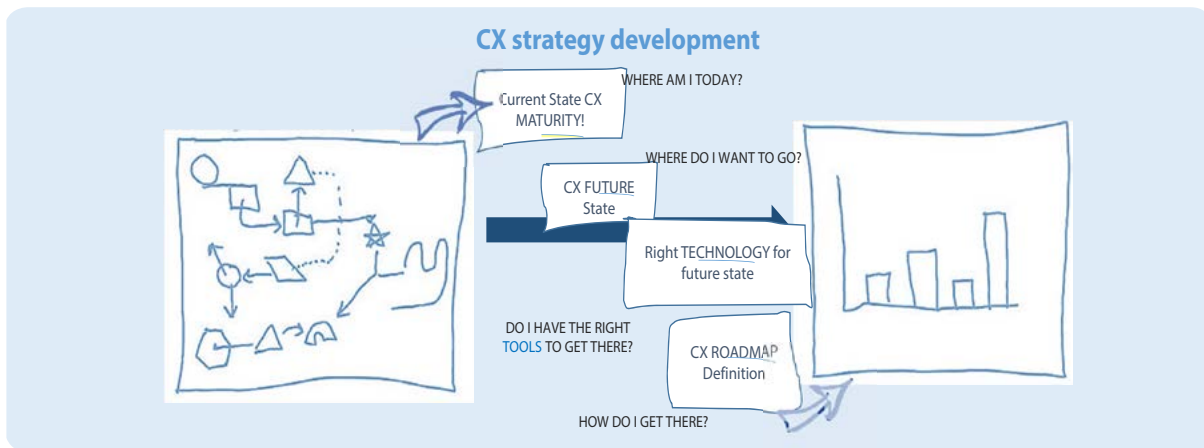
Fig 2: Infosys CX Strategy Development Framework

Infosys CX Strategy Development Framework

- **Assess the current state CX maturity** – Infosys CX Maturity Assessmentᵀᴹ Framework provides an extremely structured and introspective assessment process for enterprises to evaluate their existing CX maturity state. It offers a thorough assessment of a company's existing CX maturity by analyzing four main pillars – vision, customer centricity, governance, and execution. It also benchmarks the company's CX processes against best-in-class industry practices.
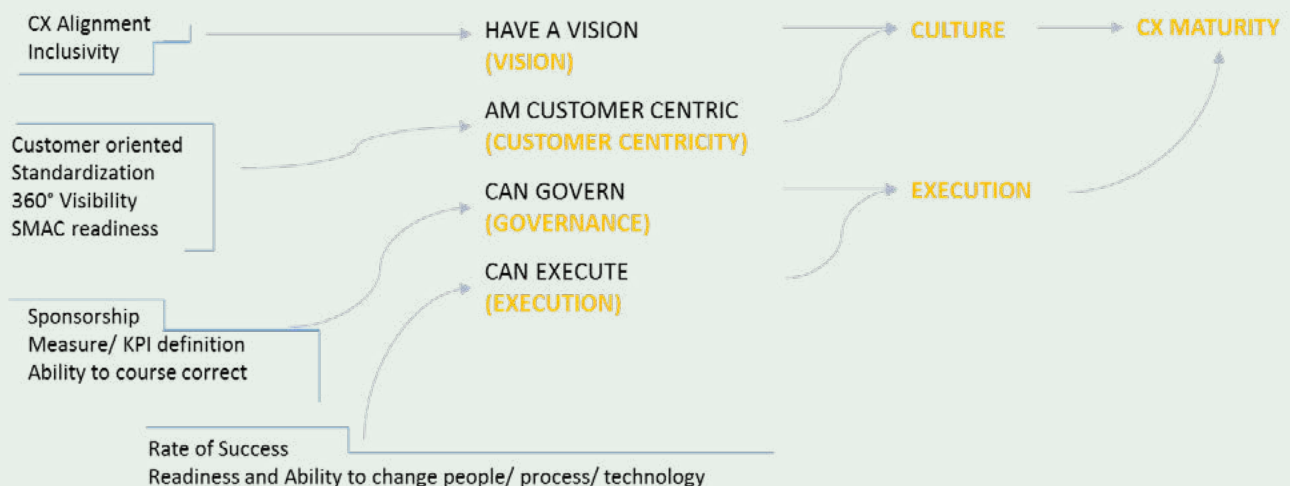

*Fig 3: Infosys CX Maturity Assessment Framework*ᵀᴹ

Define the CX future state – Once the existing CX maturity is assessed, organizations must define the capabilities of the target CX system. New CX systems must be carefully chosen as they should meet present business demands while acting as a launch pad to amplify future customer experience.

Thus, organizations should delineate and evaluate all the necessary features of the future platform. The future CX platform should be fully capable of working with next-generation technologies and supporting use cases that drive automation and high performance. When defining the future state, it is important to also note down the pain-points of the existing legacy landscape as experienced by different stakeholders. These challenges should then be addressed in the future state CX platform. This is also the right time to establish and define the desired Key Performance Indicators (KPIs) across business, operational and technical dimensions of the CX platform. Such KPIs are crucial as they serve as a benchmark to evaluate the value of the modernized application.

Choose the right technology – Here, companies should study and evaluate packaged product options beyond customized home-grown solutions for modernization. There are several modern CX products that offer depth and breadth through industry-specific solutions. However, the core product capabilities should align with that of company's vision. To identify the right product, companies can conduct proofs-of-concept on a predefined set of use cases across each packaged solution to gain a neutral and technologically-agnostic view of the capabilities of each solution. Some key criteria to be considered are product roadmaps, support frameworks by product vendors, specialized skill availability in the market, and licensing models.

Define the roadmap – Once the above information is gathered, companies can easily define the right roadmap by listing out the key recommendations in a comprehensive report that captures all the outcomes of the planning exercise.

Phase	Pointers		Outcomes
Current state CX maturity	Culture • CX alignment • Inclusivity • Customer orientation • Standardization • 360-degree visibility • SMAC readiness	**Execution** • Sponsorship • Measure/KPI definition • Ability to course-correct • Rate of success • Readiness and ability to change people, process and technology	• CX maturity assessment report • CX benchmarking report • Recommendations
Future CX state	• Future capability assessment • KPI identification • Prioritization of must-have features • Recommendations		• Gap analysis • CX capability mapping report • KPI benchmarking
Package evaluation	• Finalize capabilities required on the new CX platform • Identify potential CX packages • Conduct fit-gap • Proofs-of-concept with product vendors • Package evaluation		• CX package evaluation report • High level business requirements
Roadmap definition	• Technology blueprinting • Documentation • Benefits and risks • Return on investment		• Recommendation report • Future roadmap definition

Fig 4: Snapshot of the capabilities of Infosys CX Maturity Assessment Framework

For instance, Infosys recently helped a leading high technology communications company modernize their entire sales performance management (SPM) process using the Infosys CX Maturity Assessment Framework. SPM encompasses quota and territory management and planning as well as sales incentive compensation frameworks and processes supported by real-time reporting insights. After the assessment, the client was categorized as a 'visionary' in the assessment quadrant indicating a fair maturity on the cultural scale but low execution maturity. **The assessment revealed that** the **client's home-grown legacy system** that **had several pain points including an inflexible rules engine ,lacked mobility and real-time business intelligence**. These pain points negatively affected productivity, motivation and time-to-market for new sales strategies. Besides being costly to maintain, the system created shadow accounting and financial leakage leading to revenue loss. Infosys also conducted an analysis of the desired capabilities for their future core SPM processes and evaluated multiple packages from different product vendors. At the end of this planning project, the client Choose Oracle Sales Performance Management Cloud (Oracle SPM Cloud) as the best-fit solution to modernize their SPM processes.

Initiate

As described in the strangler vine-fig tree example, this stage is when the chosen CX application is seeded into the enterprise landscape with nascent use cases and minimal users. Some of the main activities during this stage are:

- Start the modernization program and define roadmaps

- Chose an implementation partner after evaluating their capabilities, service offerings and differentiators. In some cases, the planning partner is retained across the CX modernization journey

- Define a plan to implement the modernization project

- Conduct product demo sessions with key personas for easy user adoption

- Stratify the implementation into multiple phases or releases across smaller business units, geographies, user groups, or use cases

- Conduct multiple conference room pilot (CRP) sessions to ensure that stakeholders are well-aware of the new CX application

- Identify and create solutions to address data and integration challenges

- Launch the application for small user groups

- Reinforce the solution by identifying data and integration bottlenecks

to create a seamless integration framework and ensuring data fidelity

- Create a checklist and plan to decommission the legacy application while considering licensing contracts, re-skilling of IT staff, legal and statutory requirements, data safeguards, etc.

A point to be noted is that the legacy system will continue to cater to the bulk of the use cases even as the CX cloud makes a gradual entry into the enterprise landscape with minimal business disruption.

In the earlier example of the Oracle SPM Cloud modernization program, the client chose to implement the application by stratifying user groups according to business units. There was minimal dependency across the business units as each unit had unique processes, thereby making change management and user adoption smooth and seamless within the chosen business unit. The new application supported an agile graphical user interface (GUI) with real-time intelligence and a modern mobility experience. The client soon realized that the newly implemented Oracle SPM Cloud system improved accuracy in incentive commission calculations compared to the legacy application, thereby arresting financial leakage in the system. Positive feedback from the business unit spread across the organization, thereby simplifying any challenges in change management and user adoption.
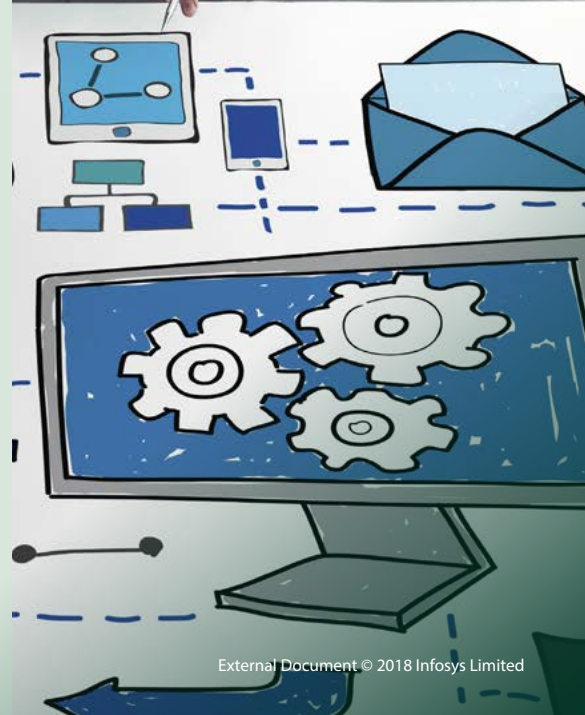
Co-exist

During this phase, the modern CX system rapidly overrides the legacy system similar to how the strangler vines rapidly surround the fig tree. As the CX system gains relevance, it starts catering to a wider user base across business processes. Eventually, the legacy system starts fading as its user base erodes over a period of time. Some of the main activities in this phase are:

- Build additional use cases, user stories and key features on the CX system

- Create a strategy for organization-wide training and rollout

- Simplify implementation through multiple releases across user groups or geographies

- Rapidly migrate user groups on to the new system

- Plan and build solutions with reusable

data migration templates for each user migration

- Ensure the CX system is aligned with the business objectives

- Enrich the integration framework by coupling more systems onto the CX

- Synchronize important add-on solutions around mobility, real-time intelligence and productivity enhancers like gamification for user groups

- Ensure the CX system is complete and covers all user groups and use cases

- Monitor the new CX system until it reaches a steady state

- Measure KPIs on the new system

Continuing the earlier example of Oracle SPM Cloud implementation, the application was implemented in all the selected business units in a phased manner. Users gained access to mobility features for

anytime, anywhere access. This was a key feature that the legacy application lacked. Gamification dashboards were added to the Oracle SPM Cloud system to enhance sales productivity. The client's business became increasingly agile as sales management could now respond quickly to market dynamics by launching the appropriate sales incentive plans to target selling specific products in specific geographies. With real-time intelligence, sales personnel were equipped with a plethora of tools to help them exceed their sales goals. Over a period of time, the legacy compensation system became obsolete as the Oracle SPM Cloud system catered to all the users and use cases while providing several benefits for the sales organization and improving operations.

It is important to note that gamification is a crucial lever to positively influence sales behavior and drive a high-performance work culture.

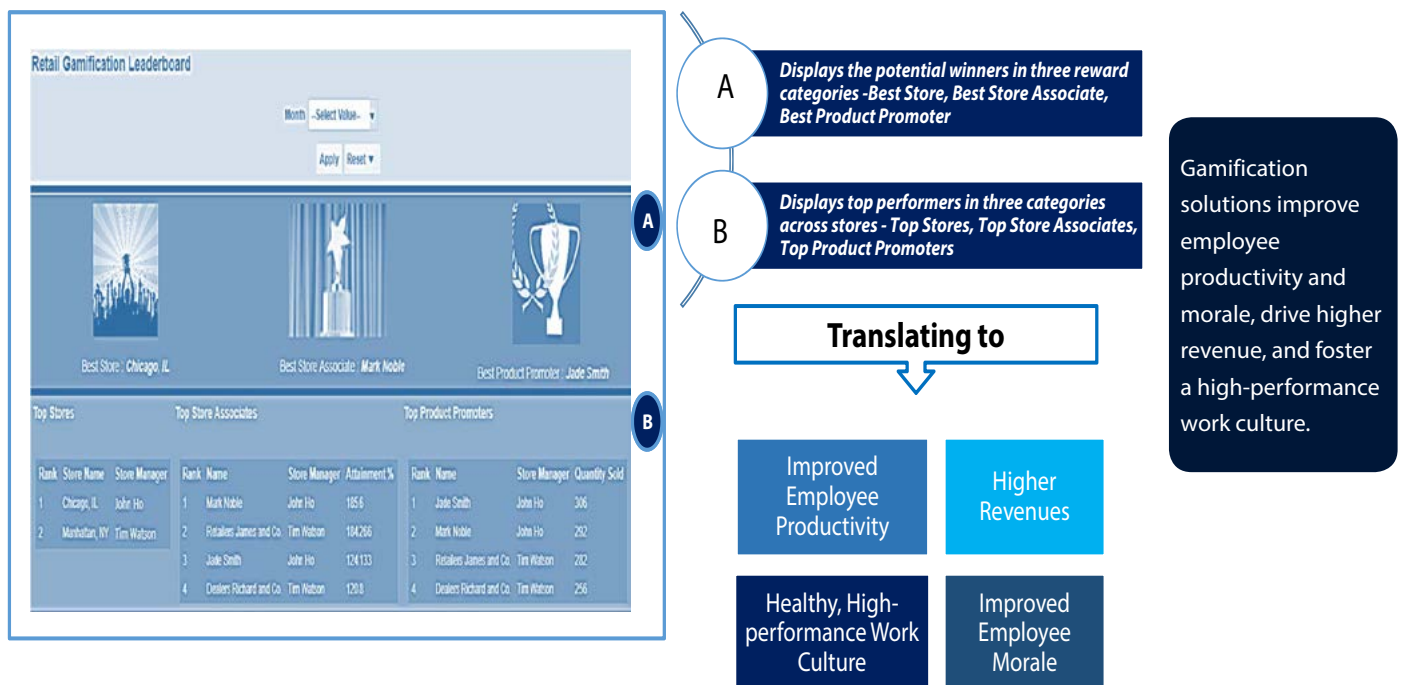## Infosys gamification solution for retail industry

Fig 5: Example of a retail gamification dashboard

Terminate

This phase is similar to the final stage in the fig tree example where the tree is killed by the strangler vines. Here, the modern CX system completely caters to the entire user base and drives the business independently. The irrelevant legacy system is now ready to be decommissioned. The main activities in this phase are:

- Execute the checklist that was created in the 'plan' phase to decommission the legacy system

- Compare the KPIs of the legacy system against the modern application and evangelize its benefits

For the Oracle SPM Cloud implementation, the client wanted to execute a one-month parallel run of the legacy and the new systems in order to compare the results. This gave them sufficient time to accurately measure the benefits of the new system and resolve minor defects. At the end of the one-month parallel run, the customer's legacy system was decommissioned. The year-on-year benefits of the new Oracle SPM Cloud system include 70% reduction in TCO and 15% boost in sales attainment levels. Thus, the client was able to de-risk the entire CX modernization journey, meet key business objectives, eliminate existing pain points, and achieve significant benefits through an agile and a modern CX system that increased sales, performance and revenue.

Amplifying CX

CX systems provide an exciting platform for enterprises to get 'smarter' by leveraging next generation technologies. After establishing a firm CX foundation, many companies are looking to embrace AI/ML to amplify CX capabilities so they can meet the demands of millennial customers and employees. Recently, Infosys helped a global robotic automation firm implement a CX solution for configure-price-quote (CPQ) processes, achieving a 200% increase in quote volumes. Soon after, the client proceeded to implement ML models that accurately predict the 'win-price' for a customer. Infosys also helped a logistics major implement an AI solution, the 'lead and opportunity predictor tool' that sifts through historical data patterns so that the CX application can accurately churn out leads and opportunities. Thus, even as modern CX systems deliver significant benefits, applying next-generation technologies strengthens their capabilities and amplifies value so organizations can achieve digitization faster to work smarter.

Conclusion

A big-bang approach to legacy modernization is fraught with risk, high cost and business disruption. Instead, enterprises should consider using methods like the Strangler Application Pattern that ensures a smooth transition from legacy to modern over multiple iterations. The key success factor is to leverage a phased approach across multiple phases to minimize risk and disruption while improving user adoption. Thus, effective planning and execution of a new CX application will help enterprises stay relevant in today's changing marketplace. Additionally, applying next-gen technologies on modern CX systems amplifies their capabilities, creating delightful customer experience, a high-performing workforce and unique brand differentiation.

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Vikram Mohan is a Principal Consultant with the Oracle Customer Experience (CX) practice. He has close to 15 years of work experience. Developing go-to-market initiatives, defining roadmaps & developing CX strategies, market research and pre-sales are some of Vikram's key focus areas within the practice. Currently, Vikram consults for Sales Performance Management engagements within the CX ecosystem. In the past, Vikram has handled enterprise wide customer relationship management transformation programs across domains including telecom, insurance, hi-tech and public sector.

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