TVSnext Ai Digital Platforms

The Only **Enterprise Modernization Guide** You'll Ever Need

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Modernization Challenges for Leaders

Over the last two years, the events of the world have reiterated the importance of having business continuity plans with added emphasis on agile, resilient, and user-friendly systems. Companies that do not plan to adapt to the digital world fail to see the light of the day after a crisis. **More than 80% of the Fortune 500 companies from 20 years ago are no longer on the list.** One can safely say that their failure to change with the changing times was a big reason they were replaced by digital enterprises born in the internet era. **And yet, US companies are still spending $50.8M a year on mainframe maintenance for their core operations.** Why are enterprises still reluctant to transform digitally?

What are we missing that might explain the disconnect between what enterprises should do and what they actually do?

Well, there are several factors.

Rocketing costs: Legacy systems often come with a high cost of maintenance. This high cost itself prevents further budget allocation towards innovative technology.

Double-edged sword: The inflexible nature of the legacy systems, which warrants the change, is also the main barrier to change because of how complex these systems tend to be.

Broke not, fix not: Leaders don't want to risk business disruptions today in hopes of installing systems that will prevent future disruptions. Or they think their business is not ready for a change at this moment.

The Cloud Dilemma: Not all legacy applications can be moved to the cloud, and even if they can, leaders don't want to rely on cloud storage entirely. Vendor lock-in, security concerns, and the cost of cloud storage are some of the reasons behind the cloud dilemma.

Cultures set in stone: From employees trained to use the legacy systems not wanting to learn new technology to difficulty getting stakeholder buy-in, cultural resistance is also an essential factor that puts leaders off technology initiatives.

> *Compulsive modernization is the insatiable desire to change and grow*

The Problem: Output Vs. Outcome

There's a difference between step-by-by modernization and a **siloed approach** to modernization. A siloed approach does not take the big picture into account and introduces new technologies and frameworks wherever and whenever possible. This can lead to cluttered processes with multiple, incompatible tech stacks. Imagine training employees in such a scenario. You must train people whenever a new implementation is done and figure out how the new technology aligns with the existing systems. Doing this, again and again, will only result in a hostile work culture that is resistant to change.

Moreover, such an approach is **output-focused,** which shows the results in the short term, but no fundamental changes, or very little, if any, in the long run. It ends up causing more trouble than ever because such an approach is very aggressive, with very little consideration for the big picture. While ROI on the investment is critical, immediate ROI does not necessarily guarantee the same forever. A new system that gives good returns now could later fail to integrate with updates to other applications in the enterprise, causing net loss.

So, what's the right approach?

Complete Business Modernization with a well-defined plan that considers the overall business state and goals is the right way. Such an approach will benefit your enterprise technologically by tying up all the loose ends and distributing the benefit of your technology investment across departments, teams, and roles, creating an equilibrium of sorts. This undertaking will also make it easier for change management and create a more welcoming culture. A complete modernization initiative must also be **outcome-oriented,** ensuring that the entire effort is aligned towards the organization's goals, not just a few individuals or business functions. When every part of the enterprise is built with flexible systems, it will guarantee greater ROI for years to come.

Where do I Begin?

There's no universally right path to modernization. The answer depends on your enterprise, and you, the decision-maker. You don't want to tackle it all at once? You don't have to. But you must be informed on how this decision will affect your growth in the long run. The solution, simply put in two words, is called **business transformation or enterprise modernization.**

INSIGHTS

The Enterprise AI Market is valued at USD 25.10 billion in the current year and is expected to register a CAGR of 52.17% during the forecast period to reach USD 407 billion by 2027

Over 60% of business owners believe AI will increase productivity

Source: Gartner

When we say enterprise modernization, we don't mean the kind where you move just your data or your legacy applications from on-prem to cloud. Modernizing your data storage is data modernization, and updating your legacy applications is application modernization. There are various other kinds of modernization too, but what a business on the fast track to growth deserves is a holistic approach to enterprise modernization. Such modernization will pave a digital path toward change for the organization's leaders, employees, and customers.

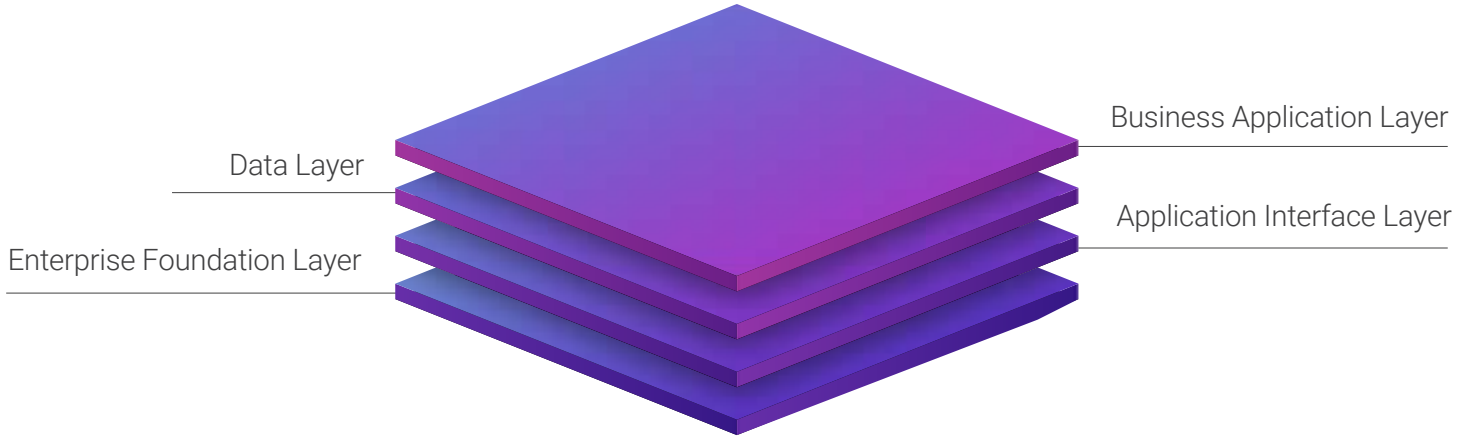
What is Enterprise Modernization?

Enterprise Modernization or Business Transformation is not something new. In the 1890s, when business penmen were replaced by typewriting machines and typewriters, the offices that did so underwent a business transformation. Similarly, when NASA started working with computers in the 1950s to perform calculations, they too modernized. Considering how rapidly technology is evolving in current times, no business has been left untouched by technology. Every organization has undergone modernization or business transformation in some capacity.

Regarding current technology, today's customers are also up to date on how their lives can be made easier with the help of the same technology. Customers want better products and services, and they want them now. If you cannot provide it, they will simply pack up and find an agile and modern organization that meets their expectations.

Simply put, Business transformation, aka Enterprise modernization, is about revisiting and modernizing your entire enterprise. Regardless of your enterprise size, you can have modernization coverage everywhere by modernizing at these four levels.

BUILDING BLOCKS TO ENTERPRISE MODERNIZATION



Level 1 is the Enterprise Foundation Layer . This is where your framework, security, audit, roles, and permissions come in.

Level 2 is the Application Interface Layer. This includes platform and integrations. Here you'll build your infrastructure and design the API integrations for the front and back ends.

Level 3 is the Data Layer. This layer focuses on your enterprise data and its storage. The tools, processes, and policies used to extract, store, manage and analyze the data are included in this layer.

Level 4 is the Business Application Layer. This layer determines the user experience and encompasses the front-end screens and the backend codes.

For an organization to experience successful enterprise modernization, it must completely modernize on all four levels.

Benefits of Enterprise Modernization

Organizations have just heard enough about the "current new normal" that exposed their lack of preparedness. But our question is this. Are you prepared for the "next new normal," regardless of whether it'll be economical, climactic, or another pandemic?

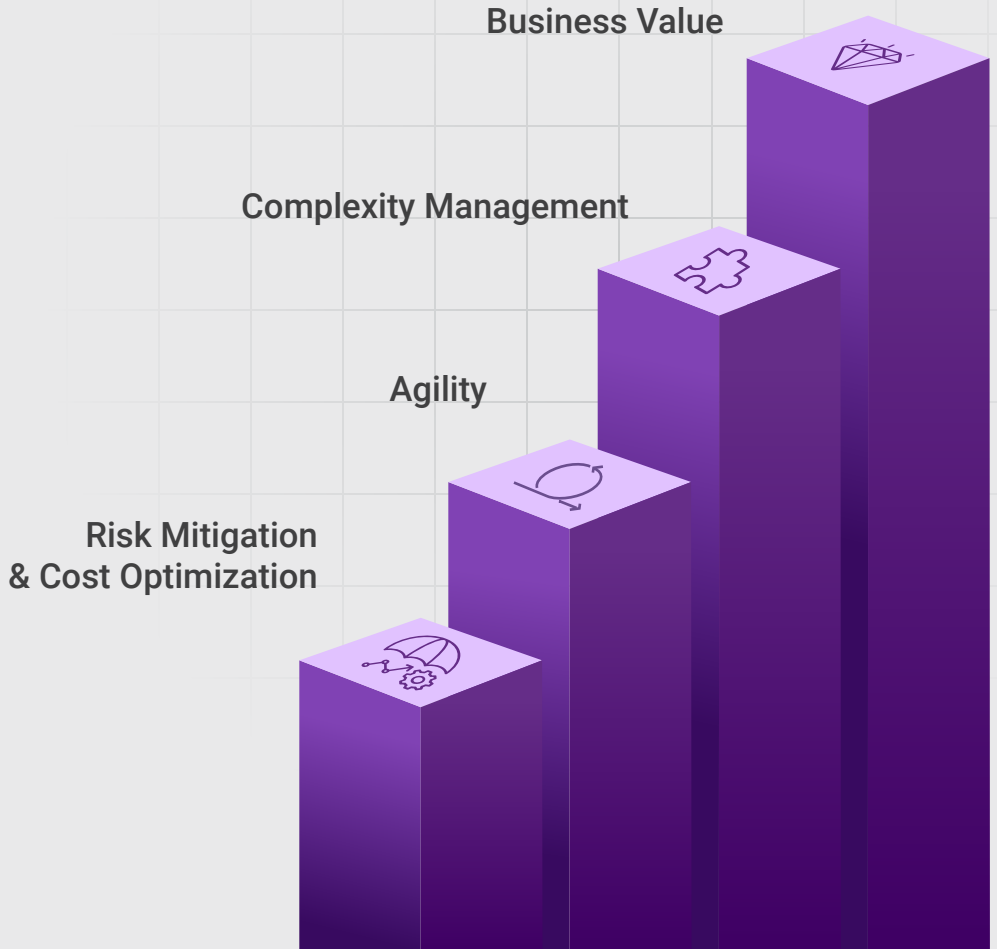
Taking a holistic approach to modernization that ensures coverage from all ends is the perfect opportunity to truly connect all your systems, processes, and people to ensure that no one works in silos anymore. It'll be like a beautifully synchronized ballet that looks good and has a solid foundation of time and effort.

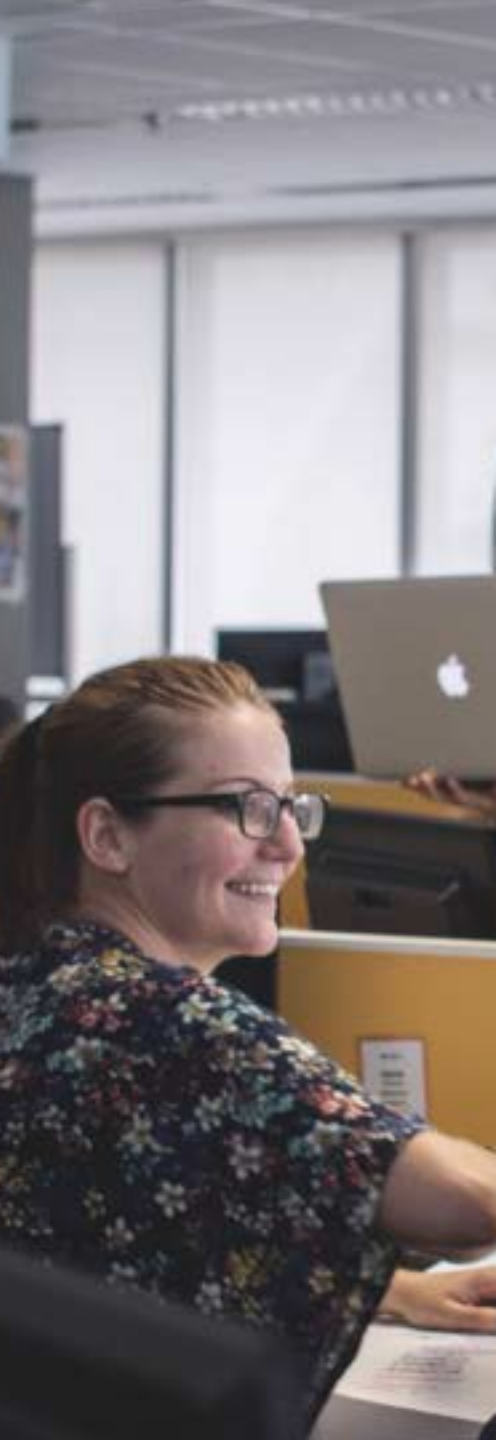
Key Drivers for Enterprise Modernization

When you modernize your enterprise, you can:

- Get rid of performance issues and say hello to stable, scalable, and agile systems.
- Free up employees from cluttered and slow systems, save their time, boost morale and increase productivity.
- Integrate with third-party systems on the go. Now your business can benefit from all the latest technology.
- Grow and transform as your customers' needs evolve. Get the flexibility that your company needs to deal with a diverse customer group.
- Now you don't just have the guarantee of security and compliance; You also have full transparency into everything.
- Stand out among your competition and retain more customers through technology-enabled exceptional experiences.
- Reinvent business models, increase revenue streams, and expand your enterprise globally.

BENEFITS OF ENTERPRISE MODERNIZATION





What Entails Enterprise Modernization?

Every organization has its own set of challenges regarding its IT infrastructure, and a pre-defined solution will not work. Depending on your organization's size, needs, and current infrastructure, the modernization effort can take anywhere between a few months to several years. The different categories of enterprise transformation are listed below. Note that some of these categories may not apply to your industry or organization. For a personalized modernization strategy, **talk to TVS Next's modernization experts.**

- Engineering transformation
- Intelligence transformation
- Experiences transformation

> *It is not the strongest or the most intelligent who will survive but those who can best manage change.*
>
> Charles Darwin

ENGINEERING	INTELLIGENCE	EXPERIENCES
Application Modernization	Data Modernization	Experience Modernization
Infrastructure Modernization	Hyper Automation	Hyper Personalization
Security & Process Modernization	AI & ML	Autonomous Experience

Engineering Transformation

APPLICATION MODERNIZATION

With the application modernization services market set to hit $24.8 Billion by 2030, it is the favorite path to modernization for enterprises. When we talk about modernizing applications, it typically means that your company should take advantage of one or more of these technologies:

Cloud

Replatforming legacy applications on the cloud is a typical component of the attempt to modernize or automate a workflow. The cloud offers a variety of options, including public, hybrid, and private, while boosting scalability, lower cost, and overall agility.

Containers

Containers are a packaging method for deploying and operating software units within the cloud, leading to data portability and scalability. Organizations will sometimes utilize Kubernetes, a container system that automates the processes within a container system.

Microservices

Most legacy platforms exist on a single-tier, self-contained, monolithic platform. A significant factor in the modernization game is reaching company agility goals to work with the ever-evolving customer and employee needs. Many organizations employ microservices to emphasize linked services by API, allowing them to choose the best solutions to meet those changing expectations that they can scale as needed.

You can implement app modernization in one of the five ways:

Retain and Encapsulate	Retaining is a relatively low-risk technique that reuses components of current legacy systems but places them within a new architecture.	You'll encapsulate your legacy software and access it as a service via API. You can extend this approach with microservices over time.
Rehost or Lift and Shift	Rehosting, also known as the "lift and shift," means moving legacy application components to new infrastructure and changing them very little.	This approach may work for some companies, but many will find it causes more problems in the long run.
Re-platform or Refactor	Refactoring takes it further than re-platforming, optimizing the code, & changing the code structure.	This approach can remove outdated libraries, code, and frameworks and eliminate features that no longer work.
Rearchitect and Rebuild	Rearchitecting a legacy application significantly alters the code and shifts it to a new architecture with improved performance.	On the other hand, rebuilding means rewriting the application from scratch, negating to change the scope or specifications.
Replace	When your legacy system stops working for you, regardless of the reason, it's time to try to understand why so you can level up.	Replacing a legacy system means retiring it thoroughly to find a new product solution.

INFRASTRUCTURE MODERNIZATION

Infrastructure is the backbone of your entire organization. Your infrastructure determines what applications you have, how efficient your systems are, how reliable your network is, and how available your machines and data are.

To modernize your infrastructure, begin by assessing your existing IT infrastructure. Once you identify how each system is performing, map it against your business requirements to arrive at the ideal state. Now you can determine whether your existing infrastructure can be optimized and used as is or whether it needs total replacement to support your growth needs.

Infrastructure modernization replaces legacy hardware systems and rationalizes and merges infrastructure by maximizing automation and cloud technology to improve productivity, redundancy, and availability.

Organizations can achieve infrastructure modernization in two modes. Mode 1 focuses on existing assets and systems, while mode 2 concentrates on modernized infrastructure.

IT infrastructure modernization is based on mode 2, which entails the latest technology, skills, and processes. IT personnel should optimize the existing infrastructure in mode 1 and address its complexity before upgrading to mode 2. Doing so ensures that cost reduction and operational efficiency are achieved in the modernization process.

> *Even if you are on the right track, you'll get run over if you just sit there.*
>
> Will Rogers

Steps for Infrastructure Modernization

Create and consolidate the entire inventory

Consolidating the IT infrastructure enables you to optimize physical server locations and ACs, and reduce maintenance costs.

1

Create a focal point to assess the effectiveness of the process

It is essential to create a hub with strategies & tools to interconnect modernization infrastructure & monitor its performance. The statistics will indicate the investment return in the infrastructure modernization process.

2

Choose containerization

Virtualization increases efficiency per server, but containerization does more. It allows you to manage dynamic requests & obtain more value and ROI from your infrastructure modernization process.

3

Optimize the IT Applications

Resources & systems distributed randomly based on business requirements are frequently underutilized. Thorough optimization is required to make the modernization process efficient & seamless.

4

Advantages of Infrastructure Modernization

- Reduce operational cost
- Ensure business continuity
- Increase security
- Enhance visibility and transparency
- Save time
- Attain flexibility

SECURITY AND PROCESS MODERNIZATION

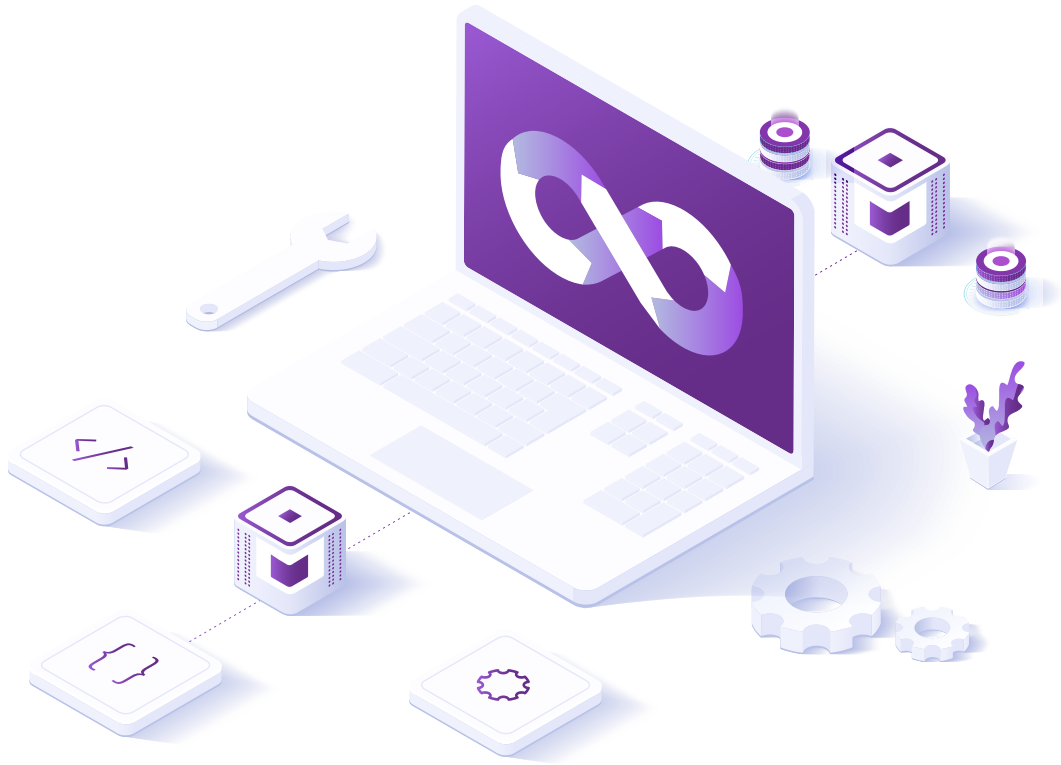
There's no use modernizing just your systems if your processes are going to be as complex as they have been. While the new system may speed things up, you'll not notice any significant improvements in operational agility or security unless you also give some attention to your processes.

The main problem with enterprise operations is how vulnerable the processes are. Even a tiny deviation from the regular procedure can trigger multiple compliance issues, and the systems and processes are simply not equipped to handle these exceptions.

If one change can become a huge bottleneck in the operations, imagine making multiple changes to evolve according to the market changes. It might quickly become an infinitely looping nightmare with no stakeholder taking ownership of the change.

The need for process modernization is evident if your systems and data are not integrated and all your applications work in silos. By modernizing and implementing a single development and security framework for the entire organization, you can remove the bottlenecks and the resultant gaps in security coverage.

This is where implementing methodologies like **DevOps and DevSecOps** come in handy. Along with modernizing operations and security, you can also bring about an organizational culture change of making security the responsibility of everyone in the organization, not just the IT teams.



If you're having trouble deciding whether you need development and security process modernization, these questions will help you decide:

- Do your processes align with the company culture you aim to have? I.e., if you desire a flat structure with minimal hierarchy, do your processes reflect the same?
- How well are processes documented? How long will it take for a new employee to get familiarized with the procedure?
- Can your processes be quickly adapted according to competitors and customer needs?
- Are your processes completely secure and adhere to regulations?
- Are the processes lean and agile?
- What dependencies are on other processes, departments, and stakeholders?
- How do you plan to minimize dependencies and increase process transparency?
- To what extent are your processes automated?

DevOps

DevOps is a methodology that accelerates software development by streamlining communication between different teams. It does so by continuously testing, integrating, and delivering code. Many organizations adopt DevOps to eliminate the silos between software development, deployment, management, and maintenance at scale.

Primary Objectives of the DevOps Process

- Speeding up the deployment time for a product or service
- Apply improvements in an ever-changing environment
- Streamline a development process
- Remove bottlenecks and facilitate communication between teams

The fastest way to achieve an agile transformation to a DevOps environment in your organization is to combine your operations and development teams, encouraging them to communicate and collaborate more. This partnership should allow for the design, implementation, and management of continuous integration and continuous delivery (CI/CD) frameworks.

DevSecOps

While security seems like an upper-level IT responsibility, every person within an organization needs to understand its security measures. **DevSecOps,** which stands for **Development, Security, Operations,** is an approach to business culture that insists on integrating security as a shared responsibility on all levels.

From board members to interns, employees must consider safety in every piece of work and decision-making, which requires a security mindset. Such a mindset can be cultivated only by instilling the belief that security reigns from the onboarding of every employee. This way, the entire organization's processes will have a security focus.

To develop an outstanding DevSecOps strategy revolving around data and app security, your team has to start with determining the risk tolerance in every stage of development and carry out a risk/benefit analysis.

When you implement DevSecOps, you will:

Start catching security vulnerabilities during development and prevent problems during release time.

Make your infrastructure more powerful in all ways.

Reduce mistakes and eliminate silos by introducing automation wherever possible.

Get timely alerts on security vulnerabilities and fix the issues ahead of time.

Free up the team from spending time **monitoring**, and help them **focus on more productive tasks.**

Increase collaboration and **improve organizational culture.**

Create high standards of security and adhere to them.

Intelligence Transformation

DATA MODERNIZATION

As companies target legacy technology modernization across the globe, unmodernized data poses a considerable threat. Data quality is a massive hindrance to the mechanical aspects of modernization—data issues, such as inconsistency and incompleteness, impact company migration to the cloud. Most of them stem from the inability to keep high-quality data during and after the transition.

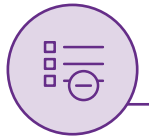
It can be incredibly challenging to integrate cloud data and on-premise data. The amount of various digital information created, collected, shared, stored, and analyzed by businesses make up their data sprawl.

With the consistent modernization and movement of primarily sensitive data, many regulations and data protection mandates are rising to the surface.

Many companies worry about the inability to meet ever-changing compliance regulations and potentially facing fines.

Harnessing the power of your current (and ever-growing) database is essential to achieving growth and excellence in your business operations. Successfully modernizing legacy systems means complying with mandates, enabling priceless analytics for your company, and providing a fantastic consumer experience. One of the main barriers to data modernization are misaligned skills, where the current skill set of your employees does not align with the technology needs. Other hurdles include maintaining and troubleshooting solutions, analytics not meeting business needs, and unsatisfactory implementation due to lack of planning.

The following elements help overcome the data modernization challenges:

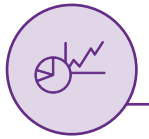


Open-Source Frameworks

These templates for software development, typically designed by a social network of software developers, are extremely common among businesses shifting how they manage their data. Open-source frameworks are free to use, allowing all companies to access the big data infrastructures necessary to implement modernization.

Cloud-Computing

Overall, cloud computing is relatively simple regarding user-friendliness and data storage. Many providers boast cloud storage and other cloud-related perks for relatively low prices. The availability of cloud-hosting companies is encouraging businesses to invest by integrating or moving their legacy systems to the cloud. Migrating data to the cloud is vital in data modernization initiatives.



Analytics Tools

The evolution of analytics tools is playing its part in many companies' desire to modernize their data. Overall, analytics and end-user reporting are better (and more sophisticated) than ever before.

If you've done these, then you can consider your data modernization complete:

1. Create accelerated data pipelines
2. Perform dynamic processing and storage
3. Set up user-centric visualization

THE KEY COMPONENTS OF DATA MODERNIZATION

Strategy	Data	Engineering	Intelligence
Understand your problems, define your goals and identify the right solution	Establish data governance and security, and modernize your data landscape	Implement your strategy through data lakes and data pipelines	Get visibility into business data through advanced data analytics

HYPER AUTOMATION

As time passes and new generations move into new workforce positions, and most employees consistently express the desire to work remotely, the need for automation is apparent. Automation is already so prevalent that three years from now, **more than 20% of all products** will be first touched by a human only at the time of purchase. The same report also predicts that more than 70% of all the big companies worldwide will have over 70 concurrent hyper automation initiatives.

Companies new to automation typically get started with **RPA (Robotic Process Automation)**, which is excellent for simple calculations, basic task automation, and making if/then decisions.

Hyper automation or intelligent automation, backed by machine learning and artificial intelligence, handles more complex organizational processes and achieves the best possible outcome in every scenario.

From a modernization standpoint, implementing hyper automation will help your business processes to flow seamlessly and enable the entire organization to achieve your business objectives sooner. Like upgrading your applications increases your technological flexibility, intelligent automation keeps updating itself as your systems do. By incorporating hyper automation from the beginning of modernization, you'll cut costs in the long run while setting yourself up to succeed without stalling due to your automation choice.

Why Hyper Automation over traditional automation?

Identified as one of Gartner's top 12 strategic trends in 2022, hyper automation is the pinnacle of automation and has been disrupting every industry. Gartner says hyper automation is an unavoidable market state in which organizations must rapidly identify and automate all possible business processes.

Traditional Automation	Hyperautomation
Provides visibility only on process flow	Provides visibility into interactions between different entities in the process and shows value creation
Simply follows the rules	It is intelligent and uses Machine Learning (ML) to identify patterns in data
Only reads texts	Uses Optical Character Recognition (OCR) to convert images into texts
Saves time	It is more than a time-saver; It is agile through the use of Artificial Intelligence (AI)
Processes only structured data	Leverages Natural Language Processing (NLP) to process unstructured data
Cannot handle exceptions	Works like a human on encountering exceptions

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

Artificial Intelligence is one of the leading technology trends, growing in leaps and bounds and gaining the attention of businesses across the globe. Recent research reports from Accenture suggest that even though 60% of the companies have experimented with AI, only 12% of them are using AI to outpace their competitors.

Artificial Intelligence is a computer behaving intelligently to perform a task like a human. Machine learning is a subset of AI that uses mathematical models to train and improve itself based on the available data. For an artificial intelligence (AI) system to work well, a computer needs to develop intelligence using machine learning (ML).

Benefits of AI and ML

- Uncover value from more data sources
- Discover valuable insights about user behavior
- Develop a better understanding of customers and provide better customer service
- Predict what the users want and deliver it ahead of time to increase retention
- Reduce computational time and free up employees to engage more in human-centric tasks
- Prevent security or compliance issues and keep enterprise data safe
- Identify all possibilities to streamline and automate processes
- Make data-based recommendations to take business decisions and explain them in simple terms

Every industry and business function stand to gain by combining the introduction of AI and ML along with their modernization initiative. Doing so not only helps transform the processes of the organizations but also optimizes the modernization process itself, saving precious time and money.

MLOps

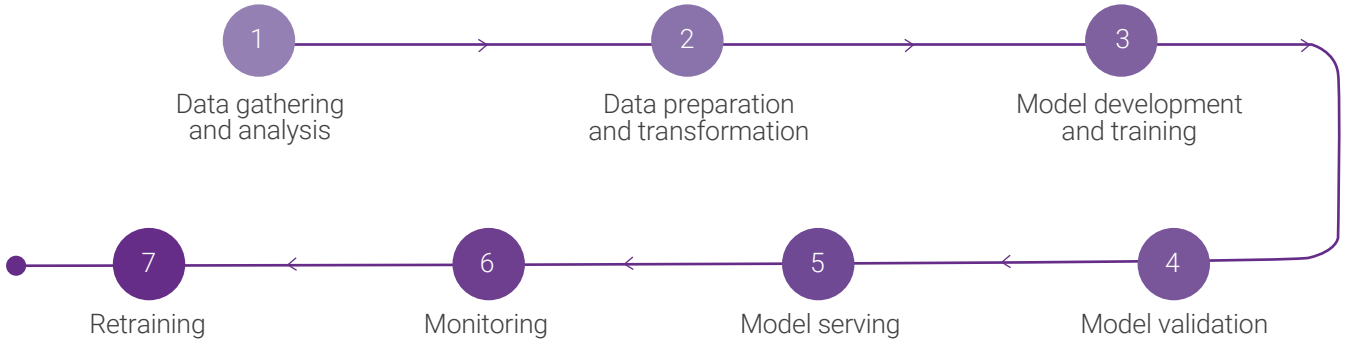
MLOps is the combination of "machine learning" and "DevOps" or development operations.

Every business is acquiring large amounts of data by the second. All this data needs to be broken down to help fuel the way companies operate. Both obtaining and using the data are incredibly complex and time-consuming processes that require scaling machine learning systems and operations. MLOps facilitates this scaling.

MLOps encourages communication and collaboration between data scientists, automating the deployment of machine learning in more extensive operations.

MLOps aligns models with the needs of the business and is becoming an independent way to manage machine learning systems that applies to the complete ML life cycle.

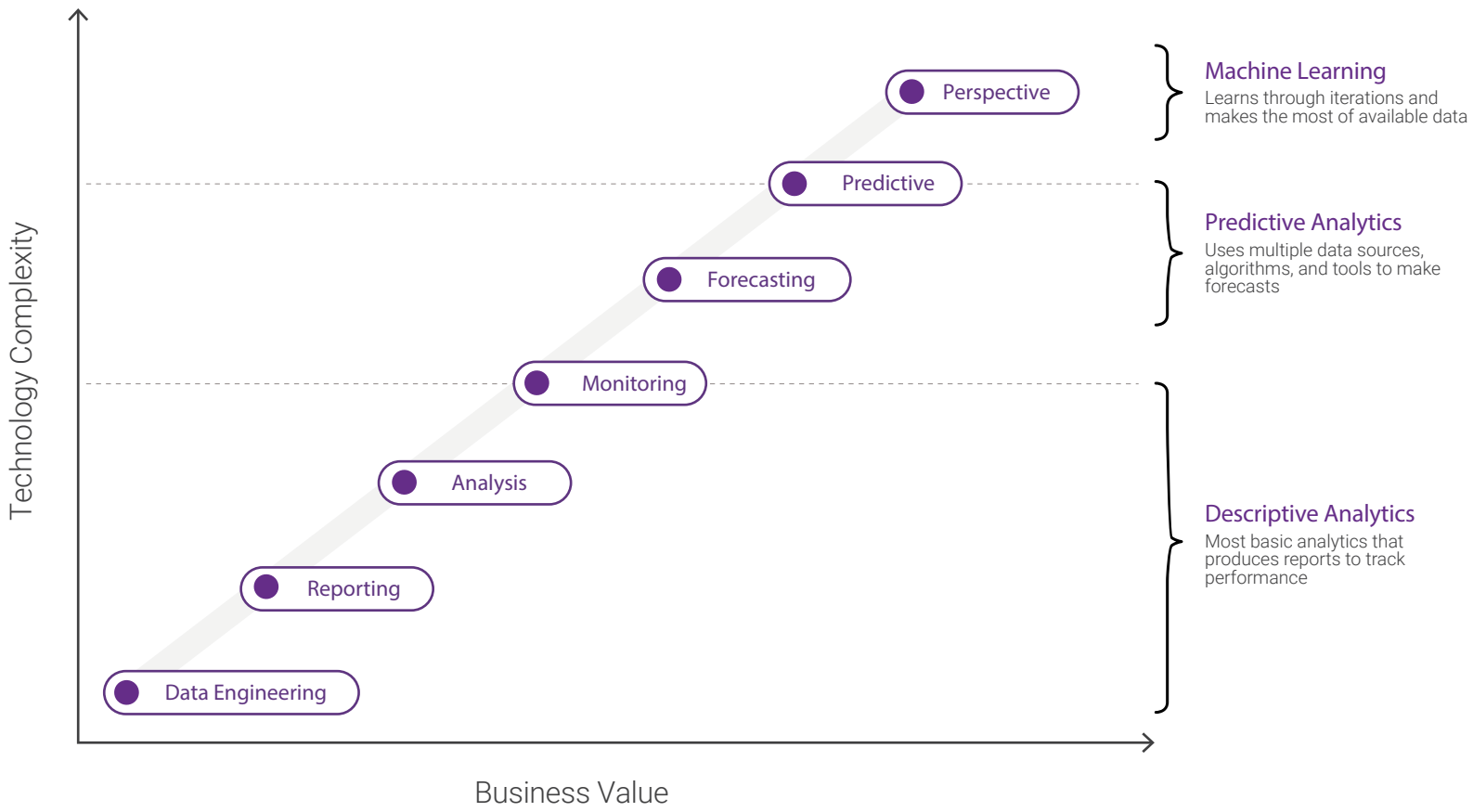
MLOps covers the following phases:



When the MLOps cycle finishes, it restarts again in a constant reassessing and retraining of data. Without insight, MLOps seems completely aligned with DevOps, but the two approaches are quite different in reality.

> *Some people call this artificial intelligence, but the reality is this technology will enhance us. So instead of artificial intelligence, I think we'll augment our intelligence.*
>
> Ginni Rometty

HOW INTELLIGENCE MODERNIZATION DRIVES BUSINESS TRANSFORMATION



Experience Transformation

EXPERIENCE MODERNIZATION

No matter what changes you make in your application infrastructure or data pipeline, your modernization is essentially a failure if all the changes do not translate into a better experience for all the users. Even if you can get stakeholder buy-in and avoid cultural resistance internally, internal users expect their lives to get easier due to the change.

> *If we really want to be effective with communication, we have to humanize our brands.*
>
> Amy Jo Martin

You might wonder why we're talking about user experience in general rather than customer experience. User experience is an umbrella term that includes business leaders, employees, and customers. Isn't customer experience the one that matters to drive growth? Well, actually, no. The internal experiences of your employees and decision-makers determine your customer interactions and drive the much-needed results for the organization.

What are the considerations while designing transformative experiences?

- Human-centered thinking to anticipate user's requirements
- Aligning business goals with user's experiences
- Using the latest technology to deliver effective & efficient experiences
- Connecting all the offline and online channels that people engage in
- Flexibility to design, build and change according to evolving needs
- Ability to identify gaps, test variations, monitor performance, and gather insights

Experience transformation re-imagines systems and streamlines processes to improve people's lives and deliver exceptional experiences. It draws on the user's persona, needs, and feelings to drive the design of applications, services, processes, and market strategies. Experience design can include internal-facing application screens, business analytics dashboards, and customer-facing screens in apps, websites, and displays.

Evolution of Experience Design:

Digitized

Building a digital experience that brings the product to the customer

Connected

Connecting a wide user base to a large market through multi-channel and multi-platform approach

Cognitive

Crafting a long-term, cognitive digital strategy that trascends physical and technological barriers and is accessible across the globe

Why Experience Modernization?

- To meet the **ever-evolving human needs**
- **Bridge gap in customer touchpoints** through offline online synergies
- Ensure that your **user journeys produce business & user outcomes**
- Build **intuitive design on a modern interface**
- **Connect disparate systems** through experience-led data
- **Deploy great software** that is simple to use
- **Accelerate productivity** and reach goals faster
- **Create a visual appeal** for users

HYPER PERSONALIZATION

Gone are the days of mass emails and generic campaigns. Take the case of running an email campaign. People are sending and receiving **306.4** billion emails a day. What are the chances that your campaign gets through the spam filter, is good enough to warrant an open, and is attractive enough to convert into a lead? The same applies to any other customer touchpoint. In a highly competitive market with virtually everyone competing for customers' attention, it is pretty impossible to grab eyeballs, let alone turn them into buyers. The solution is not just limited to creating better copies or providing better offers. What is the purpose of giving a 50% discount or writing an excellent copy that elicits an emotional response if it is not what the customer is looking for?

The answer to this question is the next step in experience transformation: hyper personalization.

Hyper personalization uses several data points about users to personalize their experiences in real-time. Let's take the case of a music player.

The first music player shows random songs based on no preference. The second player goes a little ahead and shows songs based on your listening history, geographical location, and age group. The third player goes much beyond your music preferences and demographic data. It recommends songs listened to by users who have similar music tastes as you and gives you discount on concerts when your favorite band is in town.

Now, which one would you prefer? The answer is obvious, right?

When an application or platform goes beyond the basic functionalities & provides exceptional customer experiences, it is much preferred by the users.

Different touchpoints for Hyper Personalization

- Personalize recommendations on the website and mobile application with information relevant to the user's location, age, gender, and history.
- Personalize discount coupons or offers through emails based on the user's search history, wish list, and cart items.
- Personalize push notifications encouraging customers to act immediately and convert them.
- Contextual intelligent chat support offers solutions and suggestions based on the customer's history.

Business benefits to Hyper Personalization

Since hyper personalization reimagines traditional marketing, it can deliver elevated customer experiences. Brands that provide personalized experiences stand out and get the chance to build better brand affinity among consumers. Hyper personalized experiences enable personalized feedback from every individual user's journey. Such feedbacks help set the course for hyper personalization in new products and services.

The main goal of hyper personalization is to build connected and wholesome brand experiences that make the user go "Aha!". It also sets a certain expectation level among users, and brands that do not provide such experiences stand a slim chance of beating the competition. Therefore, leveraging this technology gives a head start against the other players in the market. Providing hyper personalized experiences also paves the path to being one of the industry's most innovative products or services.

Hyper personalization delivers thoroughly curated experiences, reducing the work users must do to make a purchase. You can increase the chances of making a sale by providing precisely what the customers need. You're not losing the customers to multiple pages of scrolling or clicking when you immediately show them what they want.

Hyper personalization capitalizes on data from multiple sources to make decisions in real-time. Clean, high-quality data and advanced AI, ML, and data-analytics tools are paramount to delivering the hyper personalized experiences that are on-point. In a way, getting your technology stack ready for hyper personalization also requires engineering and intelligence modernization.

AUTONOMOUS EXPERIENCE

Now that we've modernized and personalized user experiences, what's next is incorporating all these experiences into intelligent systems that can think and act on their own. **Autonomous experience,** unsurprisingly, is another feature on **Gartner's Top Strategic Technology Trends for 2022.** It is based on building a technology stack with the tools and systems required to self-sustain, manage and transform user experiences across every touchpoint.

Why autonomy? Users don't want to feel like the system is determining their actions. So, we make the systems intelligent enough to give control of itself to the users. Note that we're not abandoning the user. We simply give them all the information they need and empower them to make their own route to navigate through the application. This way, the user is the owner of their experience.

Autonomous experience does not only apply to the end-user. The engine driving these experiences should also be independent.

> *An ideal autonomous system tracks users' journeys through the application, gathers insights from analytical dashboards, modifies the recommended paths based on the data, resolves user's issues, protects from attacks, and automatically notifies all the stakeholders in real-time.*

Setting up autonomous experiences not only requires skilled UI and UX teams; it also requires modern applications and data, well-designed security systems, advanced analytics tools, hyper-automated processes, and digitized user touchpoints. In short, enterprise-wide modernization is the precursor to achieving the pinnacle of user experience.

Transform the future through Autonomous Experiences

If there is something data analytics has taught us from user behavior, it is that users do not like waiting or having to do much work to get something. Long journeys within applications frustrate users, causing them to give up midway, negatively impacting the company's revenue.

Autonomous experiences ensure that the journeys are centered around the user's problems and needs and offer the best solution. It could be rewarding a loyal customer by providing the best possible discount on their favorite product range or giving the option to choose the quickest route to delivery.

An upside to implementing an autonomous system is that you can iteratively test and implement new product ideas directly with your users, get feedback and improve your application. The system can automatically learn and improve user journeys with more feedback and usage data.

You can also develop and implement new features based on the input.

Such innovation will help companies rapidly bring products to the market and save the cost of producing and marketing unviable products. This technology also gives you a direct way to engage with your users, gain their trust, enhance user experience, increase sales, and improve brand image.

How To Measure The Success Of Your Solutions?

As we've already discussed, you can measure your modernization initiatives' success in immediate financial returns and other ways. Here are some ways to measure the effectiveness of any technology initiative.

Employee KPIs	Customer KPIs	Technology KPIs:	Business KPIs:
Is everyone trained on the new systems?	How much have we improved customer satisfaction?	Scalability	Increase in customers
Has it improved the lives of employees?	Are we able to acquire more customers?	Extensibility	Increase in cross-selling
Has it increased job satisfaction?	How has it helped with customer retention rates?	Availability	Expand to new regions
How has it positively/negatively impacted the lives of the employees?	Is it user-friendly?	Innovation capability	Rapidly release new products/services/ features/offers
What can be done to make the solution better?	How quickly are we able to solve customers' issues and queries?	Agility	Increase in revenue
Does it help in attracting and retaining top talents in the industry?	Have we enabled self-service for customers?		Decrease in spending compared to previous systems
			% Increase in productivity
			Lesser number of bottlenecks/issues/escalations
			Goals specific to your industry/company

How Can TVS Next Support Your Business Modernization Goals?

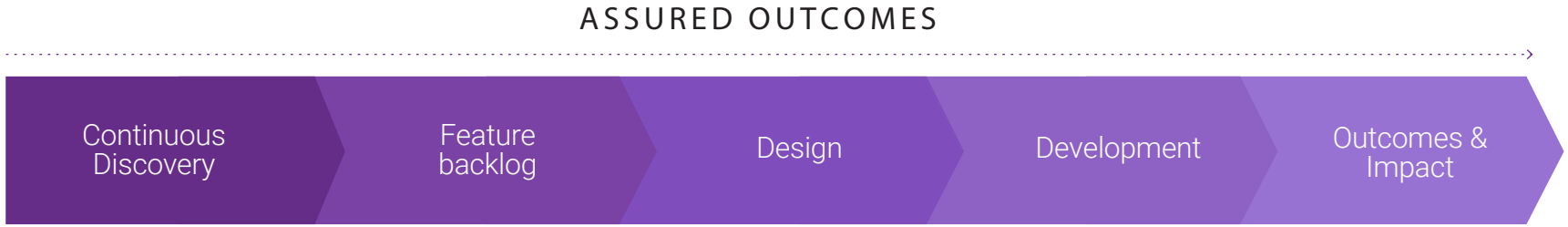
Are you wondering how to make your business vision translate into technological transformation? Are you evaluating different methods, models, and tools and feeling stuck with decision paralysis?

Typically, companies do this in one of three ways:

1. Start with Data/Automation
2. Start with User experience
3. Start with App modernization/assurance

The disconnect happens because you cannot complete modernizing one component without modernizing the other two, or at least without accommodating future modernization in the other components.

TVS Next's **connected brilliance** of excellence - in engineering, intelligence, and experience - combines seamlessly to transform business capabilities and **achieve assured outcomes**. Our visionary leaders and technology experts will help you prioritize what you need to do based on the importance and relevance to your business needs and map the right course for your business transformation.



TVS Next believes that you need these 3Cs to get the job done:

Clear Business Vision

How can you decide what to do if you don't know what you want? You must have a vision for your business, a clear set of goals you need to achieve through modernization, and the mindset to do what it takes to transform your enterprise for everyone's benefit.

Communication & Community

Stakeholder communication is as essential as good work culture and relationships between leaders, employees, and customers.

Carefully Crafted Strategy

An off-the-shelf, generic process/method with minor alterations simply will not do. What you need is unique to your industry, your position in the market, your budget, your vision, your current infrastructure, and your people.

TRANSFORMATION STORY

Enterprise Modernization Drives Business Outcomes for a Leading Lender

The client is a New York-based business financing lender that provides merchant cash advances and short-term small business loans across different industries. They are known for their extensive funding solutions and for giving loans anywhere between $5,000 to $500,000 in just 72 hours.

Challenges

The client's legacy monolith application generated revenue but lacked the agility to implement any new initiative to increase business growth. It was a huge challenge when the client wanted to add external funding and loan sources to the lending system. This exercise required several months of planning, and the legacy platform had to undergo significant upgrades for this one addition.

The client's data landscape was on-premise and had siloed environment with a lack of good data governance and management. There was no data pipeline/ETL to onboard new systems. Their business application had no data analytics and OLAP capabilities, effectively preventing the client from capitalizing on revenue opportunities through cross-selling. The legacy application also led to slow operations and reduced productivity among employees.

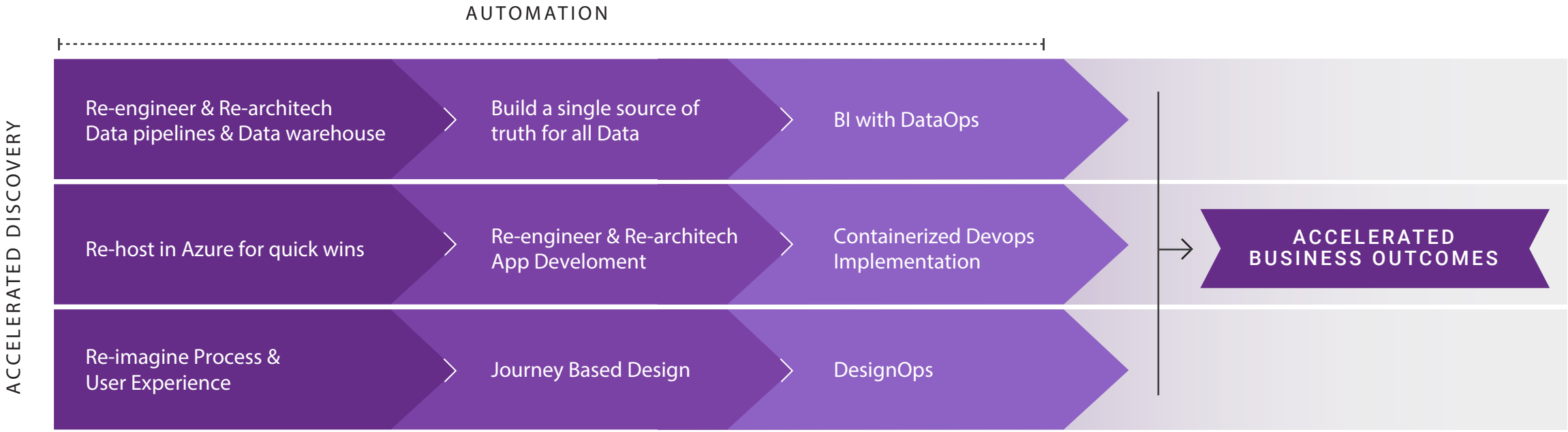
Multiple business units require batch and real-time data analysis on different systems and formats. But their existing data warehouse was unable to support these requests.

The client invited TVS Next to discover, assess & recommend an enterprise modernization strategy addressing the abovementioned issues.

Solution

The team interviewed multiple stakeholders, including C-Executives, to determine the objectives, business and technology drivers, and enterprise modernization scope. They collected as-is state system performance and cost and identified critical success factors for modernization such as portability, optimization, operational efficiency, minimal disruption, better performance, reliability, security, and 30+ attributes.

After carefully analyzing the client's existing infrastructure, the TVS Next team created a comprehensive modernization strategy spanning different domains to solve the client's problems.



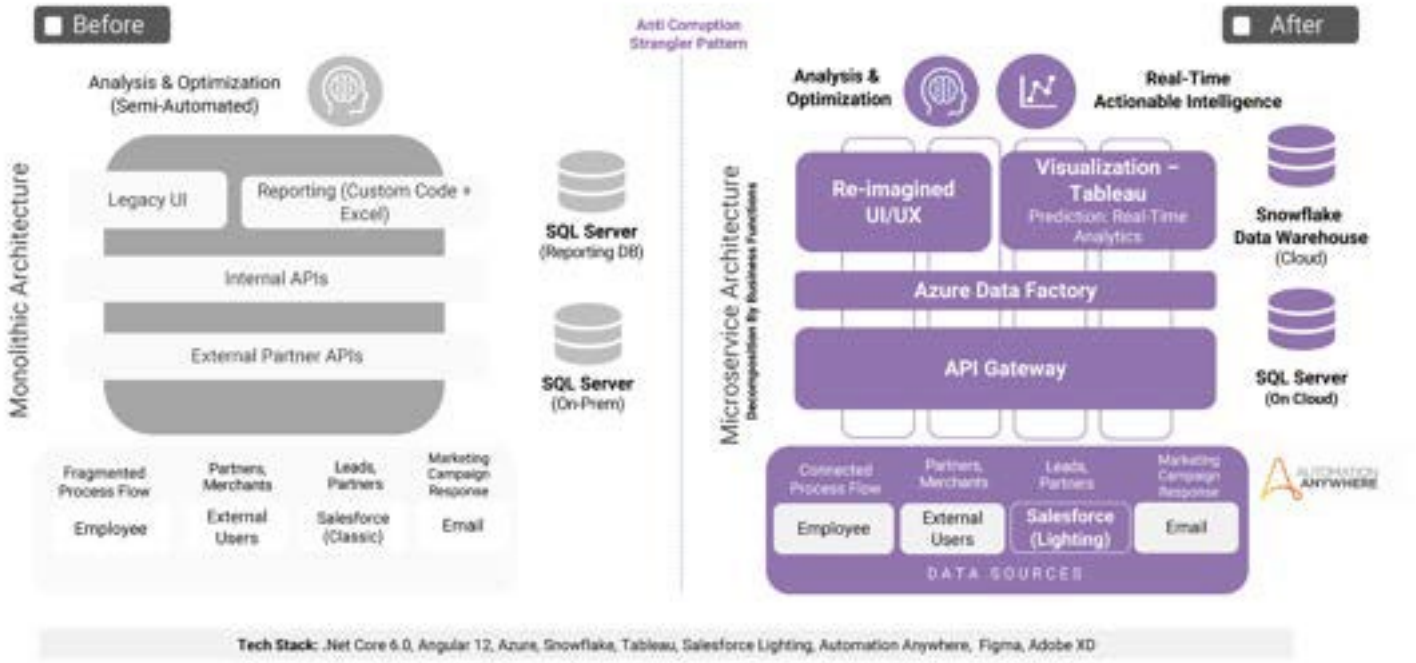
Through the accelerated discovery investigations, TVS Next came up with a list of significant challenges in the legacy application and data warehouse and prepared a transformation track for each challenge. At the end of discovery, we provided a roadmap for complete enterprise modernization with separate tracks focusing on **Data, Application, Design, and Automation.** Every process within the organization and its applications were accounted for and mapped into user journeys. We gave the client a list of architecture that can continue to be maintained as-is and the proposed infrastructure upgrades. TVS Next executed a proof of concept on the recommended target state architecture in the Azure platform before the implementation to demonstrate and validate that the target platform addressed the technical and business drivers for the client.

TVS Next then put together a team of business analysts, technical architects, cloud architects, data architects, scrum masters, UI/UX designers, full-stack engineers, automation architects, and technical project managers to work on the transformation project.

Transformation Journey

TVS Next transformed the client's monolithic application architecture into a microservices-based architecture. We made the handling of the microservices easier by implementing containerization in DevOps. We changed the legacy UI into a modern UI/UX to increase ease of use, productivity, & collaboration.

MODERNIZATION ARCHITECTURE



We migrated and modernized over 500GB of data from 10 different departments and multiple different sources. We changed the reporting module from an excel-based custom-coded one to a Tableau-based real-time visualization. The new application contains auto-scale capabilities to support the client's business expansion. We also implemented hyper-automation throughout every process using Automation Anywhere.

By leveraging the API Management Service of Azure, TVS Next has made partner integrations at scale into a seamless and quick process. After the implementation, we ensured the end-to-end functionality of all tools and processes through automated testing. TVS Next also ensured security and regulatory compliance through audits and provided continued technical support and management of services.

Business Outcome

The enterprise modernization and implementation brought in many benefits to the customer, such as:

- Modernized and easy-to-use systems **increased employee productivity by 5 times.**
- Automation capabilities **accelerated lead processing numbers by 5x-7x.**
- The agility of the applications **removed silos and reduced partner onboarding time** from 4 weeks to 4 days.
- **Data is readily available for analytics without any wait times**, and business users make near real-time decisions through self-serving reports.
- **Deal approvals increased by 35%,** bringing in more revenue for the company.

TRANSFORMATION STORY

Complete Enterprise Modernization for a Healthcare Provider

The client is a healthcare provider who serves a large community of people in the North American region.

Challenges

The client's old system was a slow-performing legacy system. Due to its complexity, adding enhancements or training new employees to use the system was difficult. It did not provide full-screen access, and the staff had to navigate multiple screens, even for something as simple as adding information to a patient's record.

Despite all the system usage, the staff had to do much paperwork and call people to verify the information. Since they used a lot of third-party vendor applications to get multiple functionalities, they couldn't customize these applications to suit their needs.

Patients spent a considerable amount of time pre-visit to verify or submit their information and an equal amount of time post-visit to get the test results. This frustrated the patients and ate up into the performance of the front desk staff.

The system was so inflexible that it struggled to perform a critical job like registering vaccination appointments.

Once the client decided to phase out the existing system, they faced the challenge of replacing the legacy application with a massive volume of confidential patient data. The client wanted a fast, flexible, user-friendly, and centralized new system that could be used across their entire patient care ecosystem.

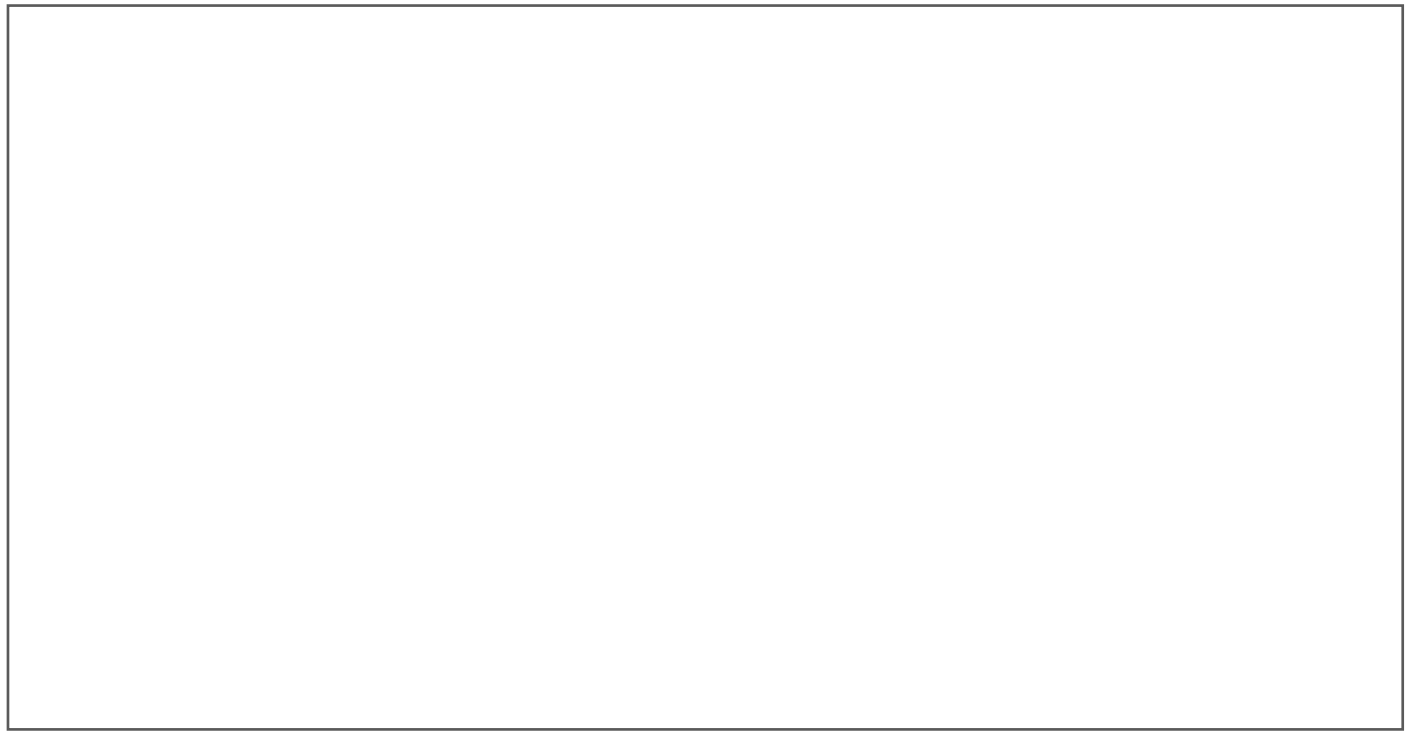
Solution

The TVS Next team conducted extensive workshops and discussed with multiple stakeholders to understand the client's vision and business goals. Then we did an in-depth analysis of the current state of the system. The client desired to build a completely new system entirely from scratch. They wanted this proprietary system to be flexible to keep up with market changes and user-friendly so that their employees could use it with minimal training.

TVS Next built a multi-tenant SaaS platform with plug-and-play capabilities. The new system stores patient details in a centralized database that can be shared with other hospitals, labs, or service providers. The system displays all the details of the patients on the central patient screen. It has also automated data transfer and facilitated patients' quick and easy interdepartmental transfer.

One of the main goals TVS Next worked towards was to make the new system as self-sufficient as possible by limiting the third-party dependencies. Since TVS Next understood the workflows of different departments, we built the product around the workflow requirements. Building so has reduced data discrepancies, increased system flexibility to introduce new features, and improved the overall service quality.

Understanding the struggles of the staff and the healthcare professionals enabled us to build separate modules that automated and streamlined multiple processes and departmental tasks. Some modules we built on request include HR application, mobile application to bridge senior citizens with doctors, specialist referral program, outpatient management program, vaccine appointment booking, housekeeping alert, and health census.



As the first milestone of the recommendations and solutions we had arrived at, we addressed the patient journey in one of the critical and high-impact departments – the emergency department.

Business Outcome

Healthcare Staff Impact

They have cut down 90% of the paper processes

Predictive senses report helps the staff stay prepared for incoming patient flow

It has improved productivity and reduced manual and repetitive tasks for all the employees

The impact of the initial release in the emergency department led to staff requesting an extension of the system for other departments.

Patient Impact

Setting expectations right in terms of out-of-pocket payments has increased patient satisfaction levels

Patients do not have to wait long to fulfil pre and post-appointment formalities.

Patients get automated reminders on the day of their appointment

Self-service capabilities enable patients to book appointments, fill in their details and receive reports, all from their phone

Community Impact

The new system created a ground-breaking impact on mass vaccination drives

The hospital served the entire community without any hassles

The media and public appreciated the hospital for immediately scaling operations at the time of need

Business Impact

We have completely streamlined and automated flow of tasks and documentation between departments

The hospital achieved a 2000% increase in appointment booking capabilities

They were able to bring down their computing costs by 80%

They witnessed a 35% reduction in the time required to run analytics and produce reports

TRANSFORMATION STORY

Leveraging Modernization To Expedite Business Growth for An Ecommerce Company

The client is a leading eCommerce company selling consumer goods in the North American market.

Challenges

The main business objective of any ecommerce company is to increase sales and, effectively, its revenue. When this client didn't meet their goals, they looked into the underlying reasons.

They identified that the outdated site architecture created severe performance issues such as slow page load and frequent application crashes. Such poor customer experience led to high cart abandonment rates and low conversions. Such poor customer experience led to high cart abandonment rates and low conversions. The client's physical and digital touchpoints were not integrated, resulting in many missed opportunities. They lacked the capabilities to assess customer satisfaction levels, therefore, missed the feedback loop to improve their services. Due to limited data analytics, the business heads could not leverage customer insights to increase customer retention.

The client invited TVS Next to discover, assess and recommend a solution roadmap to eliminate the roadblocks and accelerate their growth.

Solution

TVS Next thoroughly assessed the different technology components and interviewed various stakeholders to understand their needs and pain points in using their current tech stack.

After assessment and consulting, TVS Next developed a strategy concentrating on strengthening the application and infrastructure core through engineering, introducing advanced automation, data analytics, and AI capabilities through intelligence, and connecting all the channels and journeys through hyper-personalized experiences.

First, we rearchitected and rebuilt the client's website to eliminate the performance issues. We did new development through DevOps to accelerate release cycles. We modernized the data and added near real-time reporting dashboards to review the analytics and performance. We hosted the website and its database onto a secure cloud server and installed multiple firewalls and authentications to prevent cyber security attacks.

TVS Next set up an eCommerce security solution to validate orders and prevent identity theft. We then identified the critical user screens responsible for customer engagement & acquisition and created different user personas and desired user journeys within the applications. We ensured superior user experience and seamless flow across different touchpoints for stakeholders, employees, and customers.

Business Outcome

- Enablement of customer feedback and insights to continually improve customer support
- Protection of brand name by preventing cyber security threats
- Ability to leverage analytics to target a specific audience
- Delivery of hyper-personalization through multiple touchpoints
- Reduced marketing budgets by creating a unified omnichannel experience for consumers
- Automation for repetitive tasks reduced employee workload and paved the way for a happier workforce
- Technological flexibility and agility helped in faster time to market
- Seamless user journeys increased conversions, customer loyalty, and company revenue.

AZURE SERVICES

TVS Next, in partnership with Microsoft, enables digital transformation on the cloud for organizations of all sizes and industries. As a Microsoft Gold Certified Partner, our clients benefit from our Azure expertise. Within Azure, we provide all services to help you become a cloud-native enterprise.

With expertise in all clouds, we are uniquely positioned to provide more advantages in building solutions and platforms, especially on the Azure cloud. We have created unique and transformative solutions in healthcare, financial services, ecommerce, retail, manufacturing, and more.

Our cloud services include:

Application Modernization:

Azure Cloud Computing

Provide customers with the ability to move their existing applications to Azure, taking advantage of the scalability, security, and global reach of Azure's cloud infrastructure.

Azure Virtual Machines

Offer customers the flexibility to deploy a wide range of operating systems, including Windows and Linux, on Azure Virtual Machines. This allows for modernizing apps without having to rewrite them.

Azure Container Services

Help customers modernize their applications and adopt a container-based approach to development and deployment using Azure Container Services, which includes support for Docker, Kubernetes, and Azure Container Instances.

Azure DevOps

Assist customers in automating their software development pipeline with Azure DevOps, which includes tools for source control, continuous integration, and continuous delivery.

Azure API Management:

This service can manage and secure API gateways. An API gateway can provide additional features such as caching, rate limiting, and request/response transformation.

Data Modernization

Azure Machine Learning

Enable customers to build, deploy, and operate machine learning models with Azure Machine Learning, which includes a range of pre-built models and the ability to build custom models using Python and R.

Azure IoT

Empower customers to capture and analyze data from connected devices and sensors with Azure IoT, which includes IoT Hub, IoT Edge, and IoT Central.

Azure Databases

Provide customers with a range of Azure Database services, including Azure SQL Database, Azure Cosmos DB, Azure Database for PostgreSQL, Azure Database for MySQL, and Azure Database for MariaDB.

Azure Backup & Disaster Recovery

Ensure customers' data is safe and recoverable with Azure Backup and disaster recovery services like Azure Site Recovery and Azure Backup.

Business Transformation

Azure Artificial Intelligence

Enhance customers' applications with Azure Artificial Intelligence, which includes computer vision, natural language processing, and speech recognition.

Azure Security

Help customers protect their data and applications with Azure Security, which includes Azure Security Center, Azure Information Protection, Azure AD, and Azure Advanced Threat Protection.

Talk to the Experts

We are a digital technology and consulting company accelerating growth for our clients. We help organizations innovate, launch or scale businesses that propel them into the future. We take a holistic approach to drive transformational outcomes by leveraging engineering, intelligence, and experiences.

The Next Modernization Initiative is a series of curated presentations, blogs, eBooks, case studies, and demos on modernization specifically chosen to meet each company's circumstances and growth vision. **Get in touch with us** and find out the different ways in which TVS Next can help accelerate your modernization journey.

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