Everest Group® RESEARCH

Applications Transformation for the Digital Age

From Delivery Excellence to Business Value

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Executive summary

In the digital age, application services organizations are under immense pressure to respond rapidly to market changes to help transform business models and deliver business value, while remaining cost competitive. The need to address market pressures has made application services central to any forward-looking enterprise's strategy.

Despite enterprises' growing aspirations from application services, most struggle to effectively deliver business value. Traditional application services models are not equipped to meet business expectations of the digital age, as they have limited adaptability to change, poor delivery speed, inefficient processes, and limited ability to drive innovation.

Applications services priorities and objectives need to be closely aligned with business goals to serve customers faster, enhance customer experience, and scale products and services.

Application services for the digital age requires a fundamental shift across key principles that form the building blocks for evolution. This change requires application services organizations to be agile to enable business outcomes, continuously evolve and innovate to adapt to changing business dynamics, enable orchestration of services that are business focused, and drive efficiencies to reduce costs and improve operational efficiency.

Successful transformation requires changes across multiple aspects spanning organizational design, culture, processes, and technology. It involves fostering a product-oriented mindset for innovation, embracing and implementing DevOps across the organization, infusing intelligent automation across the application life cycle, and modernizing the application portfolio to maximize business value.

This report analyzes the challenges inhibiting existing application services models, describes enterprises' evolving expectations, and suggests how enterprises can transform application services. The key areas of focus are:

- Key challenges of traditional application services models
- Evolving enterprise expectations from application services
- Key principles for building and evolving application services
- Measures enterprises can adopt to transform their application services

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The current enterprise applications landscape fails to achieve desired business outcomes

Everest Group perspective

Enterprise success in the digital age depends on **enhanced customer experience**, new revenue streams, continuous product and service innovation, and faster time-to-market. However, application services organizations are **unable to fully deliver** in line with enterprises' business goals.

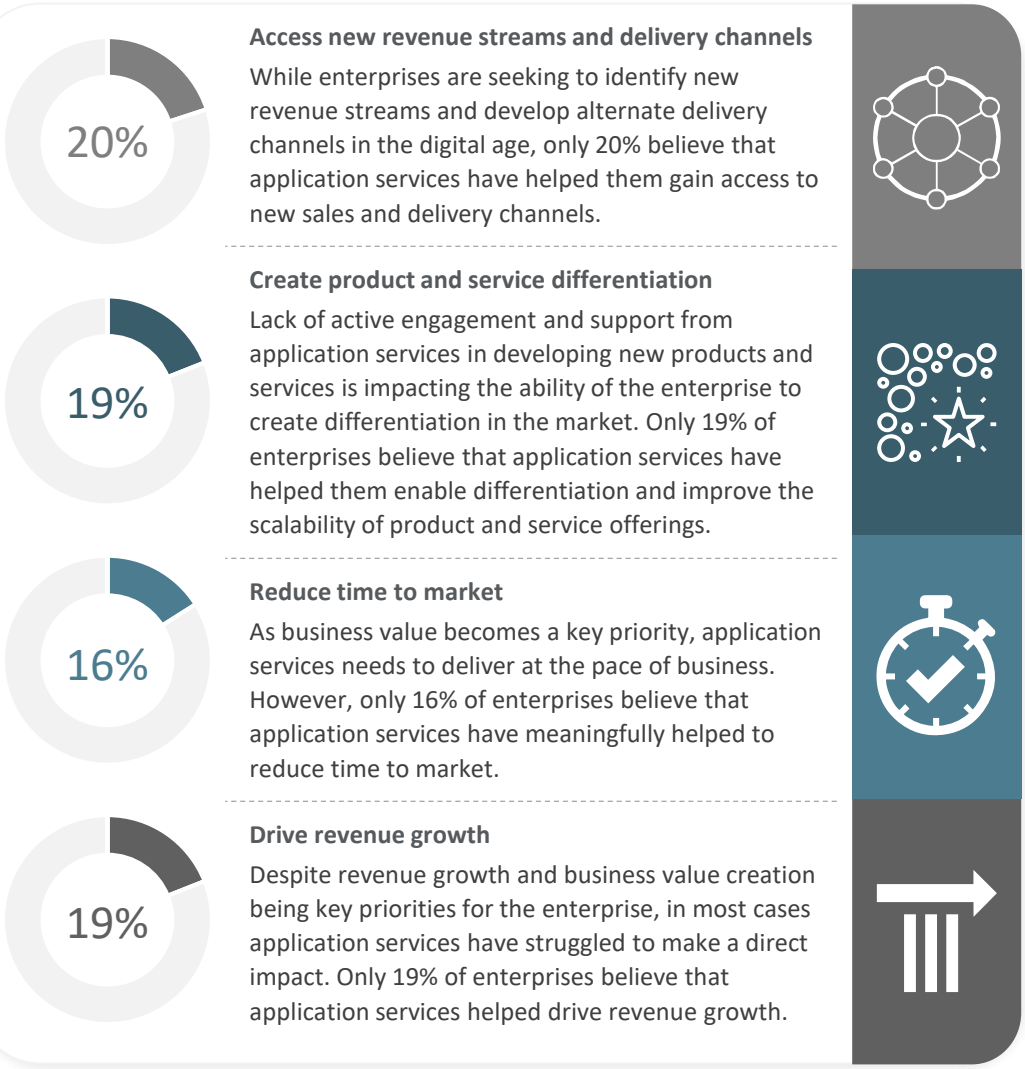
The current applications landscape cannot achieve desired business goals

Although enterprises have demanding aspirations from application services, most enterprises fail to fully meet desired business goals. Application services organizations are unable to optimally support enterprises' digital transformation efforts to drive growth and improve efficiency. Exhibit below describes how current applications landscape are unable to help enterprises achieve desired business outcomes.

EXHIBIT 1

Current applications landscape are unable to deliver desired business outcomes[1]

Source: Everest Group (2019)



1 Everest Group research with 190 global CXOs and applications leaders from large enterprises (revenue >US$1 billion)

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Traditional application services models are unable to drive business value

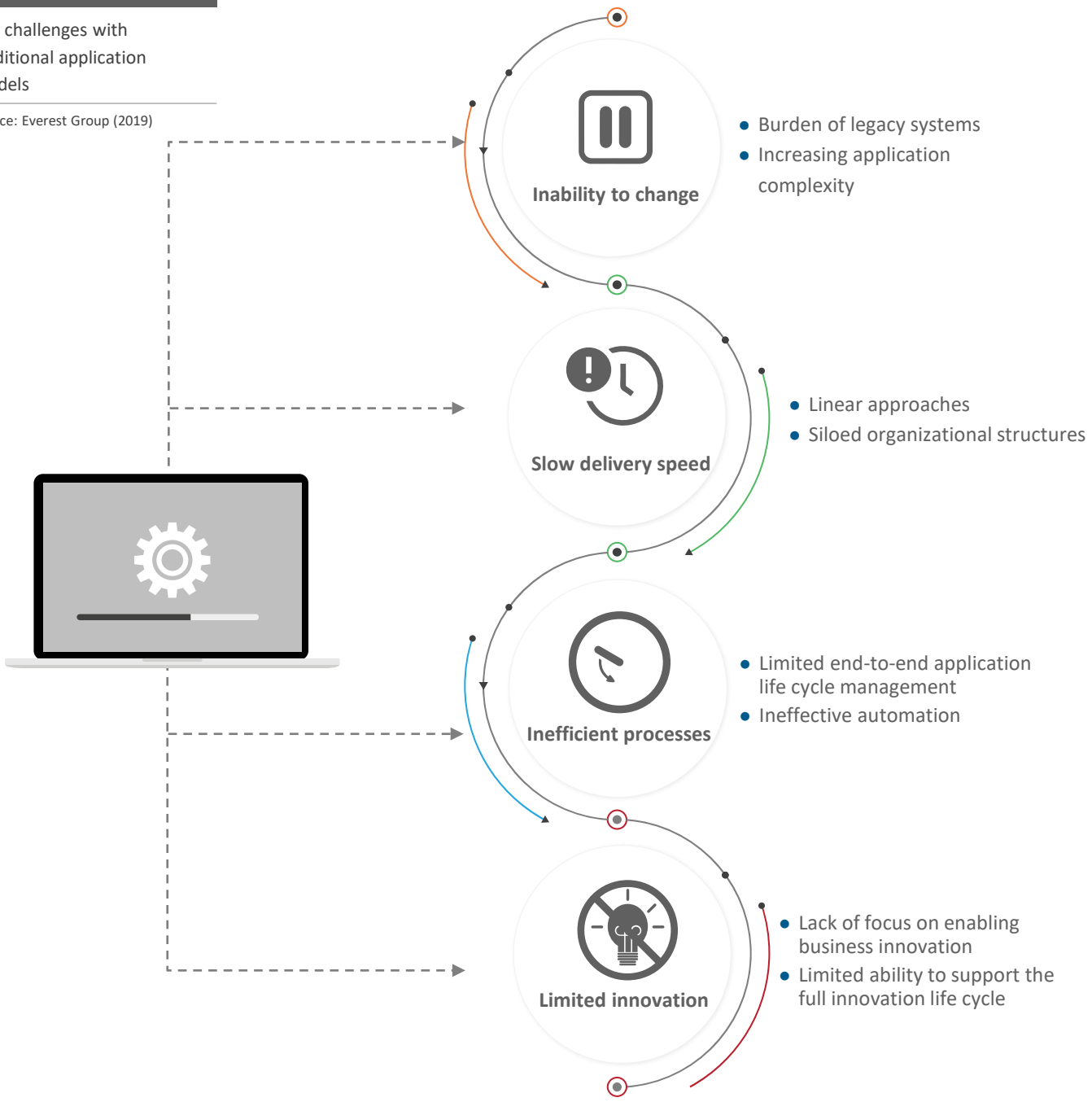
Everest Group perspective

The burden of legacy systems, a linear development approach, siloed organizational structures, and sub-optimal automation of traditional models **do not allow enterprises to meet evolving business needs**. There is an urgent need to shift from these traditional value levers to maximize value. Exhibit below illustrates the key challenges traditional application models face.

EXHIBIT 2

Key challenges with traditional application models

Source: Everest Group (2019)



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Enterprise applications leaders are so focused on technology outcomes that they forget their business value. For example, only **28%** of these leaders mentioned that speed of execution is considered a key metric for building a business case for application projects.[1]

Inability to change

Enterprises embracing digital transformation are inhibited by the limitations of legacy systems and rising complexity of applications. Legacy systems were designed as monoliths, with tight coupling between modules and components, making them inflexible to dynamic changes. Traditional application development methodologies offer limited scope of modification and reversibility impacting outcome velocity. Digital businesses require applications that can be adjusted dynamically, managed easily using discrete components, and developed using design principles.

Slow delivery speed

Speed has become the new currency in IT today. The emergence of newer digital business models is shrinking product life cycles and require an iterative approach to application development. Siloed organizational structures, limited collaboration across teams in traditional models, and a linear approach result in lengthened application development cycles and limit the agility to respond to market changes.

Inefficient processes

Traditional application development and management methods are labor intensive and heavily dependent on the skills of the people involved. The lack of standardized automation for repetitive tasks across the application life cycle hampers cost savings and operational efficiency. Enterprises' governance processes to manage their application services landscape, from development to production support, are typically fragmented and most often do not have an end-to-end view of performance across the application life cycle. This approach results in sporadic instances of cost saving rather than cost efficiencies across the application portfolio.

Limited innovation

Application services have traditionally been cost-driven organizations, primarily focused on "keeping the lights on." Business stakeholders who now have an increasing influence on application budgets, view IT as a bottleneck in enabling business innovation. In the current context, technology innovation within application services has limited linkage to generating business value. In most cases, application services organizations lack the capabilities to support businesses through their end-to-end innovation process.

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Enterprises' expectations from application services are evolving

Everest Group perspective

As businesses seek to accelerate their digital transformation efforts, application services are fast expanding beyond IT service delivery, emerging as a strategic pillar to assure business outcomes. Application services are expected to **be agile, continuously evolve to meet digital business needs**, and generate tangible business value, while managing costs effectively.

Strategic priorities of enterprises' application services strategy

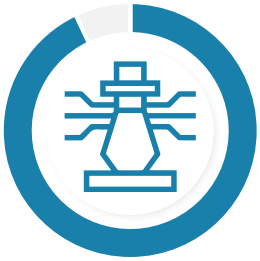
Three priorities have the greatest influence on enterprises' application services strategies.

EXHIBIT 3

Top three priorities driving enterprises' application services strategy

% of enterprises that consider the following objectives as their key application services strategic priorities [1]

Source: Everest Group (2019)



Align with enterprise digital strategy

93%

Drive business value and customer experience

89%

Reduce Total Cost of Ownership (TCO)

85%

Align with enterprise digital strategy

As enterprises undergo rapid digitalization, new business models are emerging and applications are required to play a central role in enabling business model transformation. Dynamic market shifts and changing customer needs mean that IT function is expected to manage and transform business in the new digital landscape. Enterprises' expectations from application services have shifted from supporting a steady-state operations environment to playing a key role in enabling business model shifts. Application services are expected to be agile, and continuously evolve to meet digital business needs.

Drive business value and customer experience

Application objectives should be closely aligned with business outcomes and KPIs, and not to IT metrics. Application services should impact business value creation with the goal of serving customers more quickly, enhancing customer experience, and enabling the scalability of products and services. Enterprises' expectations from application services have evolved from ensuring IT delivery excellence to generating measurable business value.

1 Everest Group research with 190 global CXOs and application leaders from large enterprises (revenue >US$1 billion)

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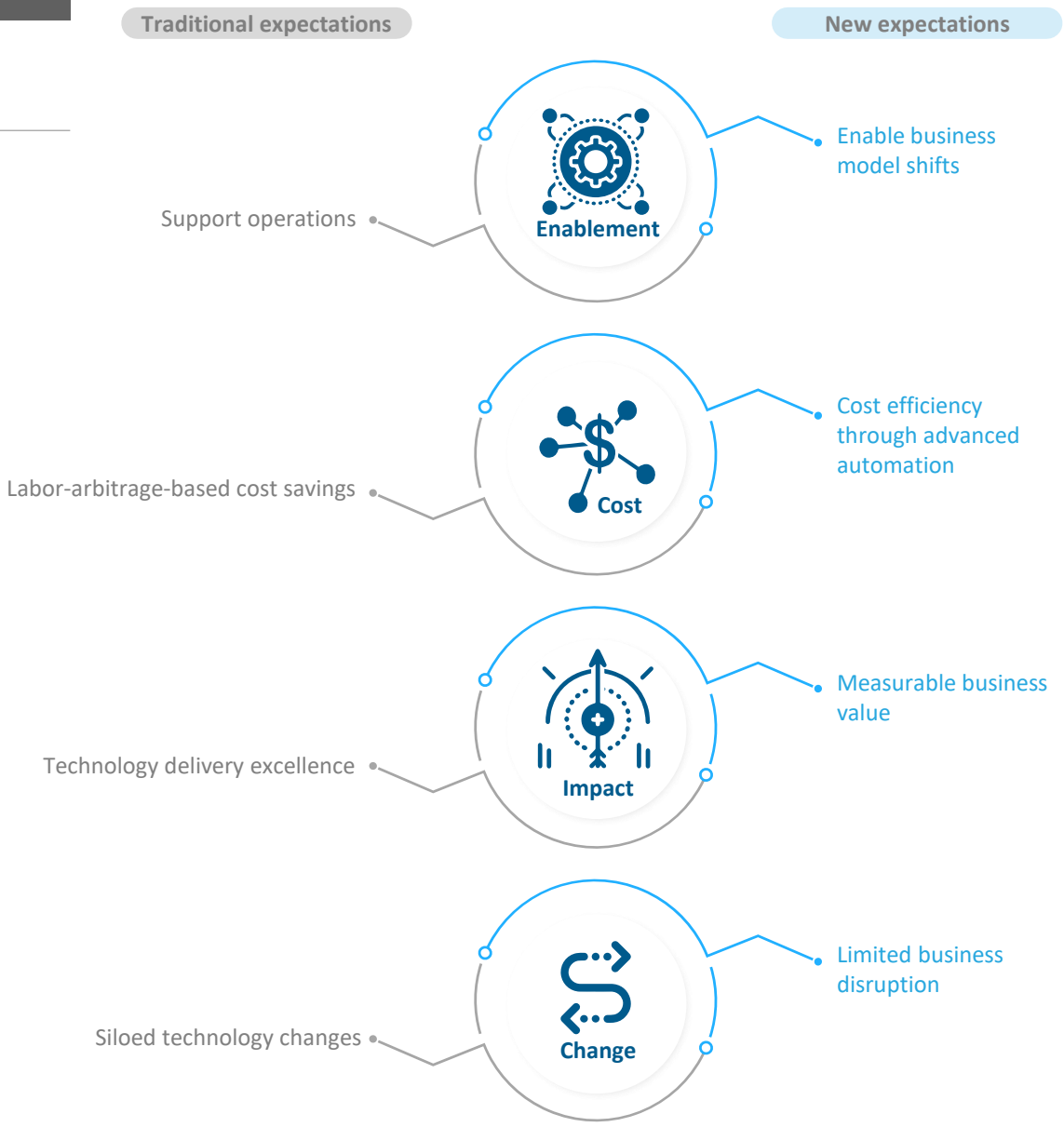
Reduce TCO

While enterprises need to build new capabilities and invest in technologies to enable digitalization, it is equally important for them to focus on cost-effective application services delivery. The changing technology landscape has shifted enterprise expectations from achieving cost savings through arbitrage-based models to driving cost efficiencies via automation and productivity enhancements. The exhibit below highlights changing enterprise expectations from application services.

EXHIBIT 4

Evolving enterprise expectations from applications services

Source: Everest Group (2019)



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Principles of application services in the digital age

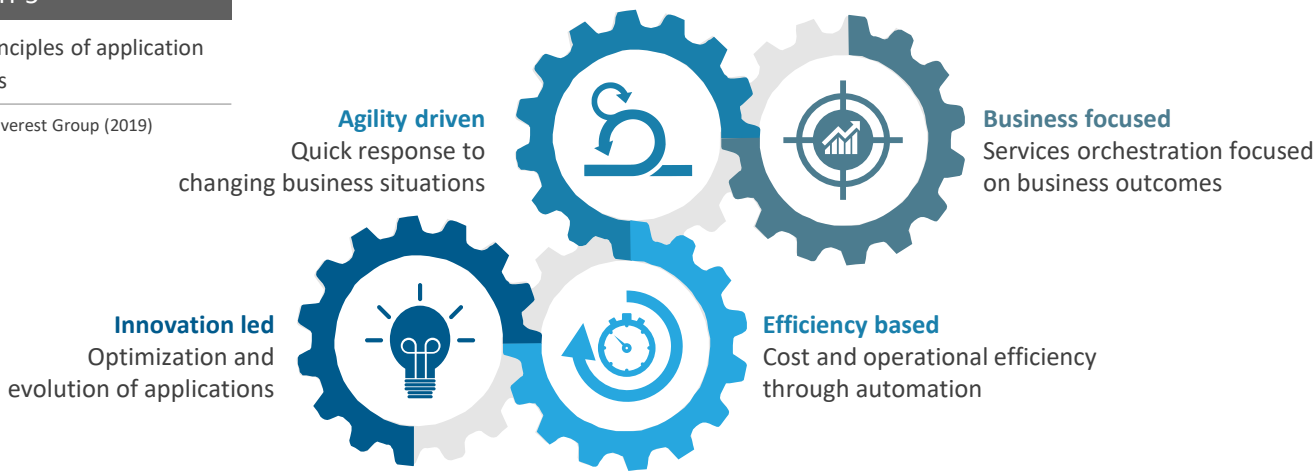
Everest Group perspective

Application services for the digital age need to be built and evolved around four key principles: **agility driven**, to respond to business dynamics; **business focused**, to orchestrate services aligned to outcomes; **efficiency based**, to drive cost and operational efficiency; and **innovation led**, to enhance legacy applications and adopt newer solutions.

EXHIBIT 5

Key principles of application services

Source: Everest Group (2019)



Agility driven

The digital era demands an application services operating model that is more flexible and responsive to business needs, expedites service delivery, and reduces time-to-market. Leveraging the Agile and DevOps models, applications can be designed iteratively, in a reversible manner with quick rollbacks, and with high development velocity. Enterprises also need to embrace cloud platforms to drive flexibility and agility across the technology stack. Adoption of Agile and DevOps practices should not only be restricted to "SDLC-centric" activities but should become a part of a cultural transformation within application services teams.

Business focused

In the digital age, where services are multi-sourced, IT should not only be leveraged to deliver services, but it should also orchestrate the integration of services across the enterprise to drive business outcomes. This change requires strong alignment and integration across portfolio management, operations, quality assurance, and performance governance across both infrastructure and application elements.

Enterprises need to take a holistic view of services integration to reduce costs, lower complexity, and minimize risks, while enabling faster delivery. Data generated through service integration hubs can serve as a prolific source of business insights. These insights can help eliminate business leakage and introduce improvements such as early defect detection, faster technology adoption, and better workflows.

Enterprise application leaders are adopting DevOps to drive agility. Our research suggests **63%** of these leaders believe that DevOps will become the de-facto model of software development and deployment in the future.[1]

1 Everest Group research with 142 senior IT executives and application leaders

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Our research analyzed applications automation adoption and found that **75%** of enterprises leverage automation primarily for QA and maintenance. [1]

Efficiency based

Despite the ever changing needs of digital business, enterprises must run their applications cost effectively. They need to reduce their reliance on human intervention and focus on generating cost and operational efficiencies through extreme automation across the application life cycle. As adoption of Agile and DevOps increases, the need for enterprises to build automated workflows to drive efficiency will also become critical. Currently, automation of application services is largely focused on quality assurance and management phases. However, increasing adoption of automation of development centric activities will help reduce the burden of developer overheads and improve productivity.

Leveraging AI techniques and intelligent automation will impact the way applications are developed, tested, and maintained. For example, in the development phase, machine learning techniques can be leveraged to scan requirement documents and use recommendation engines to suggest global code snippets.

Innovation led

Almost **89%** of enterprise applications leaders mention that evolving existing applications is a core focus area of their applications roadmaps. [2]

Enterprises aspiring to enable digital transformation are often inhibited by the limitations of legacy systems and complex application landscapes. They need to evaluate, optimize, and evolve their applications portfolios to reduce technical debt and improve business agility. This process requires continuous opportunity assessment for applications modernization to ensure alignment with the evolving technology landscape to drive business value.

Legacy applications built as monolithic systems need to be upgraded to modern digital architecture to meet enterprise expectations around dynamic realignment of business priorities. Service-based architecture, such as microservices, can help build loosely coupled modules that are disjointed but allow individual components to be integrated or updated easily.

A key principal of service-based architecture is leveraging design thinking to develop design-centric applications and architecture that can dynamically adapt to refactoring or re-architecture needs. The use of a service-based architecture enables the enterprise to quickly add or modify application features and continuously evolve independent service components. Such continuous evolution requires an innovation and experimentation-driven culture that promotes collaboration and accepts failure, as this kind of culture helps to identify gaps in existing systems and improve acceptability of the new solution. Innovation must be embedded as a core value of application services, and should not just be limited to enabling innovation, but should include owning and driving end-to-end innovation.

1 Everest Group PEAK Matrix™ for Automation in Application Services 2019

2 Everest Group research with 190 global CXOs and application leaders from large enterprises (revenue >US$1 billion)

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How can enterprises transform their application services for the digital age?

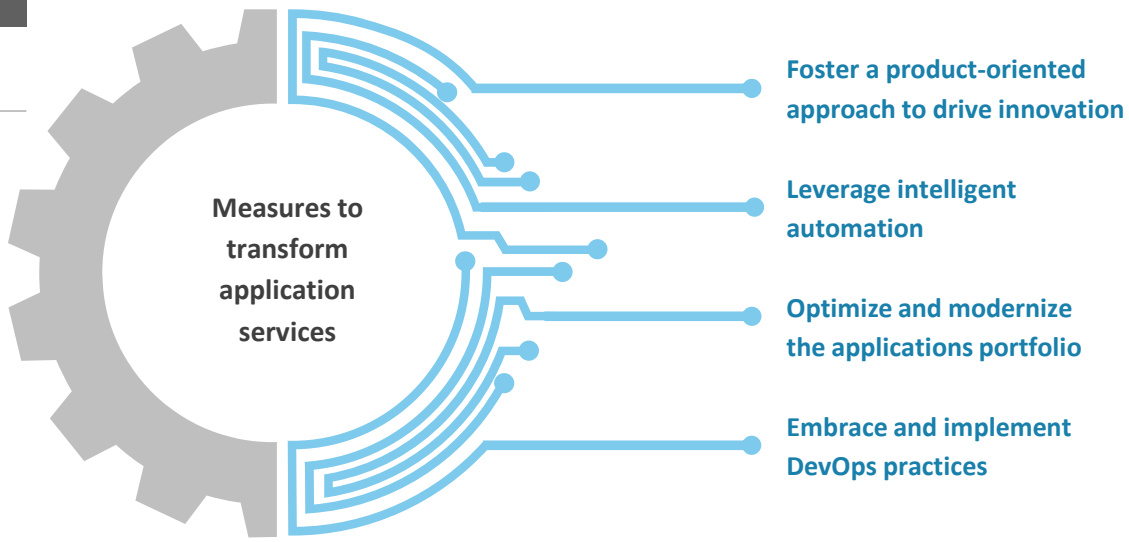
Everest Group perspective

Transforming application services requires changes across multiple dimensions. It involves fostering a **product-oriented mindset to drive innovation**, implementing DevOps across the organization, leveraging intelligent automation to improve efficiency, and, most importantly, **optimize and modernize the applications portfolio** to reduce the burden of legacy systems.

EXHIBIT 6

Measures to transform application services

Source: Everest Group (2019)



Below are several examples of large enterprises that have successfully transformed their applications to deliver business value in the digital age.

Enterprise	What was the challenge?	How did they transform?	Outcome
ING	Changing customer expectations and rapidly evolving digital distribution models required ING to transform its operating model.	ING embarked on a product-oriented agile transformation journey, creating 350 nine-person squads in "tribes" to encourage close integration between product development and IT operations.	Significant benefits through improved time-to-market and enhanced customer engagement.
Walmart	Walmart Canada's legacy applications were unable to scale to serve customer needs during Black Friday sales.	Walmart re-platformed its legacy system to a microservices architecture to achieve 100% application availability at a reasonable cost.	Increased customer conversion and cost savings, and achieved zero downtime.
NIKE	Nike's technology platform was monolithic, lacked the scale and speed to drive innovation, and was hindering the growth of digital channels.	Nike implemented DevOps practices for continuous delivery and modernized legacy monolithic applications leveraging service-oriented architecture.	Shorter development cycle and increased agility for digital transformation.
Rabobank	Changing regulatory requirements required Rabobank to speed up testing without exposing sensitive data and personal information.	Rabobank embarked on a multi-year radical automation initiative that involved automating the delivery of test data and deployments.	Shorter end-to-end testing time (from weeks to days) and enhanced regulatory compliance.

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Our automation research suggests that only **29%** of enterprise automation use cases today can be called "intelligent/advanced."[1]

Foster a product-oriented approach to drive innovation

Enterprises should treat customer-facing applications as products instead of projects. Product-oriented principles can help enterprises accelerate innovation and minimize risk via design thinking, crowdsourcing, and rapid prototyping.

Leverage intelligent automation

Enterprises need to evolve through their automation journey to move toward AI-infused intelligent automation. Intelligent automation will encompass traditional automation such as RPA, as well as advanced cognitive automation capabilities, such as natural language processing, machine learning, and deep learning. With increasing adoption of AI-infused automation, successful integration with legacy systems becomes critical. Enterprises need to prioritize the right use cases, develop customized solutions for the existing technology landscape, assess the downstream impact of implementing automation, redefine policies, and ensure change management.

This is not about jettisoning the legacy applications but enhancing them to ensure business value.

Optimize and modernize the applications portfolio

Enterprises should evaluate their portfolios to identify legacy applications built as monolithic systems and optimize or modernize them to meet dynamic business expectations. This means that the legacy applications are not jettisoned but enhanced to ensure business value. Enterprises need to develop a business-led roadmap for application modernization to maximize the value. They should identify applications with limited business value, reevaluate legacy architecture, rebuild components of existing applications, and move existing monolithic architecture to a modular and loosely coupled architecture.

Embrace and implement DevOps practices

Implementing DevOps requires enterprises to make changes across governance, tools, technology, people, and change management. DevOps requires a fundamental shift in organizational culture, with strong executive buy-in and commitment. DevOps should be implemented in a phased manner, and the process often begins by starting small, executing it successfully, and then scaling the transformation. For successful implementation, enterprises should develop a DevOps roadmap aligned to enterprise strategy, closely align DevOps implementation efforts to other technology transformation efforts, implement continuous delivery, and adopt advanced deployment techniques. As automation is a key pillar of DevOps, it is critical to identify where and how automation should be introduced.

1 Everest Group PEAK Matrix™ for Automation in Application Services 2019

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Conclusion

Cost savings and operational excellence should be deeply ingrained into the goals of applications organizations.

Application services transformation is a journey that fundamentally changes the way in which applications are consumed and delivered. As enterprises embark on this journey, Everest Group recommends that all changes and initiatives undertaken, irrespective of scale, should be aligned with four "pillars of evolution".

Continuous improvements in cost and operational efficiencies

Enterprises should have a laser sharp focus on continuously evaluating their application portfolios to ensure cost and operational efficiency gains. Enterprises' transformation efforts must include the adoption of modern development and delivery principles, and the use of extreme automation to simplify, standardize, and automate processes.

Delivery of application services for business value

Applications play a critical role in digital businesses. It is imperative for enterprises to ensure application services' development and delivery centered on business needs. This would require making changes to systems with a clear understanding of the business impact they would create and their influence on business value. Enterprises need to identify and redefine their performance metrics to measure value delivered based on operational and strategic business priorities.

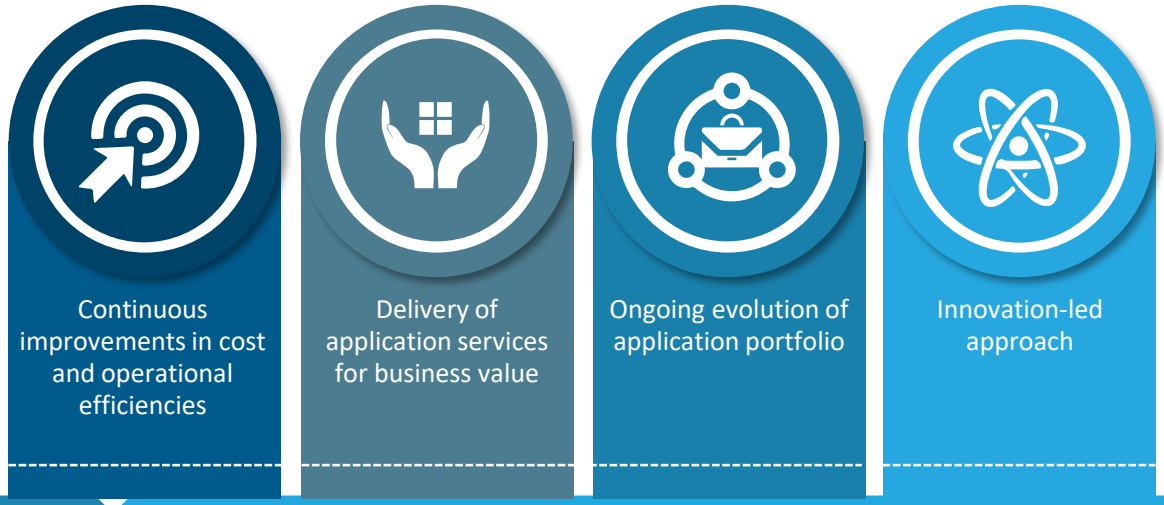
Almost **80%** of application modernization initiatives are lift and shift, and forgotten quickly. Such models do not create long-term business value.

Ongoing evolution of application portfolio

As enterprises optimize and modernize their application portfolios and technology landscapes, they should also simultaneously foster a culture of continuous evolution within application services organization. To minimize risks and maximize business value, enterprises can adopt an incremental approach to modernization initiatives to move towards a digital-ready application services landscape.

Innovation-led approach

Enterprises should regard their innovation agendas as the core consideration for driving change across both technologies and businesses. Application services organizations should not only take an innovation-led approach across the application life cycle, but also leverage applications innovation as a catalyst for accelerating business initiatives.



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As enterprises move forward in their digital journeys, it becomes imperative for them to ensure their application services evolve to generate tangible business value. Everest Group believes that enterprises undergo three broad phases in transforming their applications landscape.

EXHIBIT 7

Application evolution continuum

Source: Everest Group (2019)

	Initiate	Enhance	Transform
Vision	Support business	Enable business	Partner with business to generate business value
Technology	• Get the basics right around efficiency and optimization • Rationalize the tools landscape	• Reduce technical debt and move to service-based design • Establish a tools orchestration platform	• Modernize technology stack and digital-native architecture • Implement orchestrated, self-service-based delivery of tools
Organization design	• Introduce Agile and DevOps practices in small pockets • Initiate collaboration between IT and business	• Expand Agile and DevOps across the portfolio • Drive collaboration and shared accountability between IT and business	• Embed Agile and DevOps into organizational culture • Ensure strong collaboration and well defined accountability between IT and business
Processes	Manually manage and standardize processes	Standardize processes, with selective automation in siloes	Implement scaled, measured, and automated processes across the organization
Metrics	Align metrics to the portfolio level	Align metrics to IT outcomes	Align metrics aligned to business outcomes

Not all application journeys will be the same, nor will all enterprises move in a linear manner from one stage to the next. However, all enterprises should consider making long-term changes across the above-mentioned set of interconnected dimensions. Transforming the applications landscape to drive business value in the digital age will need to be a combination of doing the basics right, the simple things, and advanced initiatives.

About Everest Group

Everest Group is a consulting and research firm focused on strategic IT, business services, and sourcing. We are trusted advisors to senior executives of leading enterprises, providers, and investors. Our firm helps clients improve operational and financial performance through a hands-on process that supports them in making well-informed decisions that deliver high-impact results and achieve sustained value. Our insight and guidance empower clients to improve organizational efficiency, effectiveness, agility, and responsiveness. What sets Everest Group apart is the integration of deep sourcing knowledge, problem-solving skills and original research. Details and in-depth content are available at www.everestgrp.com.

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