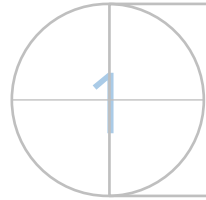# Application Modernization Services 2023 RadarView

Revitalizing businesses through application modernization solutions

August 2023

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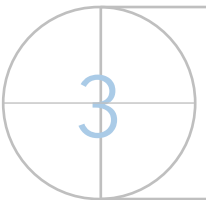
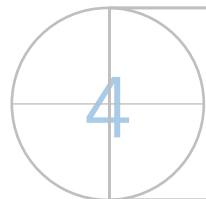# About the Application Modernization Services 2023 RadarView

1 The growing enterprise demand for application modernization services is driven by the need to stay competitive, embrace digital transformation, and maximize the potential of modern technologies. Service providers are offering tailored modernization strategies, leveraging advanced technologies, and building new platforms around them.
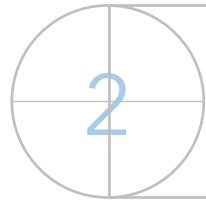
2 Avasant evaluated 34 providers using a rigorous methodology across the key dimensions of practice maturity, partner ecosystem, and investments and innovation. Through its analysis, Avasant recognized 23 providers that brought the most value to the market over the last 12 months.

3 The *Application Modernization Services 2023 RadarView* aims to provide a view into the leading service providers for application modernization services. Based on our methodology, these service providers are categorized into four broad segments: leaders, innovators, disruptors, and challengers.

4 To enable decision-making for enterprises, Avasant has provided an overview of the major application modernization service providers in the industry. This includes a list of their top enterprise clients, customer success stories, key IP assets/solutions and partnerships, and major industry verticals they serve. This is supported by an analyst's perspective on the provider across the three key dimensions defined in the second point above.

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Executive summary

Defining application modernization services

Application modernization services

Application modernization refers to updating or replacing legacy software with modern, cloud-based solutions to help organizations modernize their existing applications. This improves performance, scalability, and agility while reducing costs and minimizing risk. The process includes various activities: application assessment, platform selection, cloud-native development, deployment, and ongoing support and maintenance.

The key dimensions of application modernization services are as follows:

Strategy and planning

- Creating a clear plan for modernizing the application, including selecting the appropriate technology stack, data modeling, security frameworks, tools, and processes.

Assessment and analysis

- Conducting a current state assessment of the existing application to identify areas for improvement and potential risks.

Architecture and design

- Developing modern application architectures, such as microservices, APIs, and cloud-native solutions.

Development and integration

- Developing and integrating capabilities, including modern development frameworks, database integration, and third-party integrations.

Deployment and migration

- Deploying and migrating applications to modern platforms, including cloud-based platforms, containers, and serverless architectures.

Support and maintenance

- Offering ongoing support and maintenance services to ensure the modernized application performs optimally over time.

Avasant recognizes 23 top-tier providers supporting the enterprise adoption of application modernization services
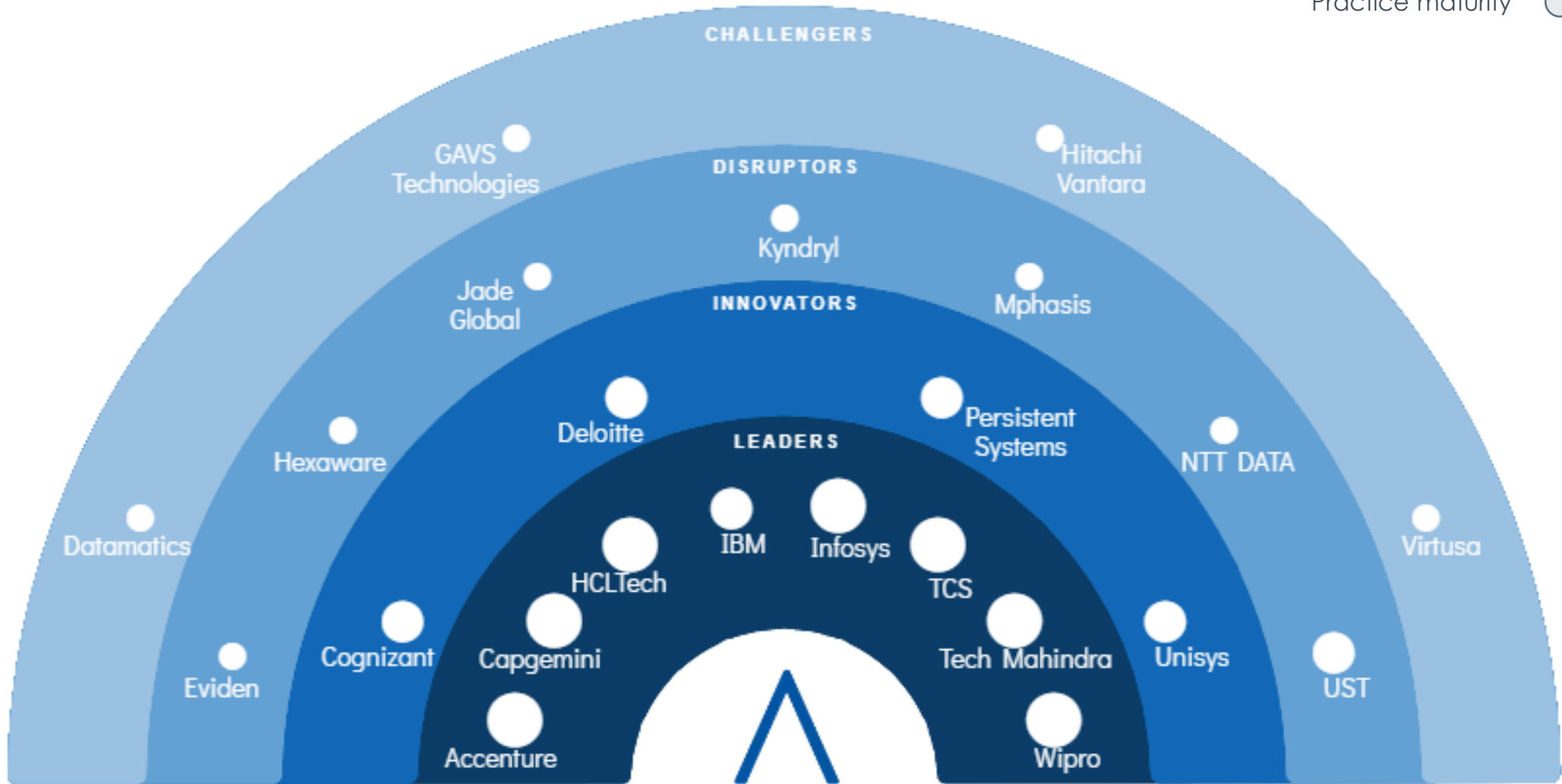
Enterprises are modernizing their legacy landscapes to remain competitive in a fast-paced digital world

Changing customer behaviors and preferences

Enterprises are compelled to modernize their legacy applications amid evolving customer behaviors and preferences and the need for a seamless online shopping experience, with fast page loading times, easy navigation, and personalized recommendations.

Distressed business performance

Legacy systems may lack the necessary capabilities to support modern business requirements. Thus, organizations are upgrading their applications and technology infrastructure to improve operational efficiency and streamline business processes.

Application modernization drivers
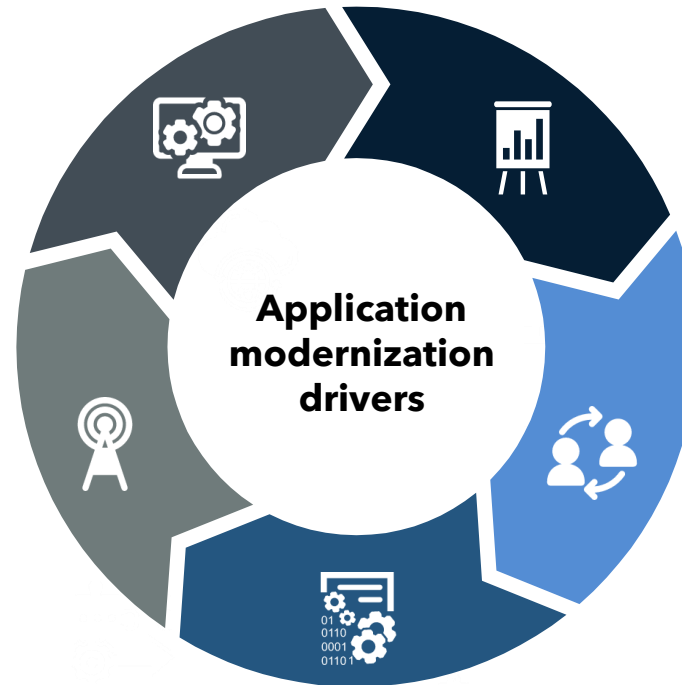
Growing competition

Amid industry transformations and emerging market players, companies are being pushed to strengthen their competitive edge by modernizing applications and aligning their offerings with evolving customer demands.

Resilience and availability

As businesses increasingly depend on technology, ensuring uninterrupted application operation is becoming crucial to avoid downtime because it can severely impact customer satisfaction, revenue, and overall business performance.

Evolving regulations and compliance requirements

Businesses are modernizing applications by moving to secure and robust platforms that comply with updated regulatory guidelines, driven by the need to protect customer information from rising cyber threats and data breaches.

Source: Avasant Application Modernization Services RadarView Survey, May–July 2023

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Legacy applications are limiting enterprise ability to innovate, scale, and adapt to changing business needs

Legacy systems present challenges due to their monolithic design, difficulty in finding skilled talent familiar with outdated technologies, complex integration processes, and the high costs of maintaining them.

01

- Legacy systems with a monolithic architecture have tightly integrated components in a single codebase.
- Modifications or updates to specific features without affecting the entire application are challenging.
- Keeping up with modern requirements and evolving technologies is becoming difficult.

04

- Organizations with legacy systems are facing difficulty in finding skilled professionals who are proficient in maintaining and supporting them.
- The expertise required to work with legacy systems is scarce and in high demand.
- Lack of new talent willing to work with outdated systems is resulting in knowledge gaps and challenges in troubleshooting issues.
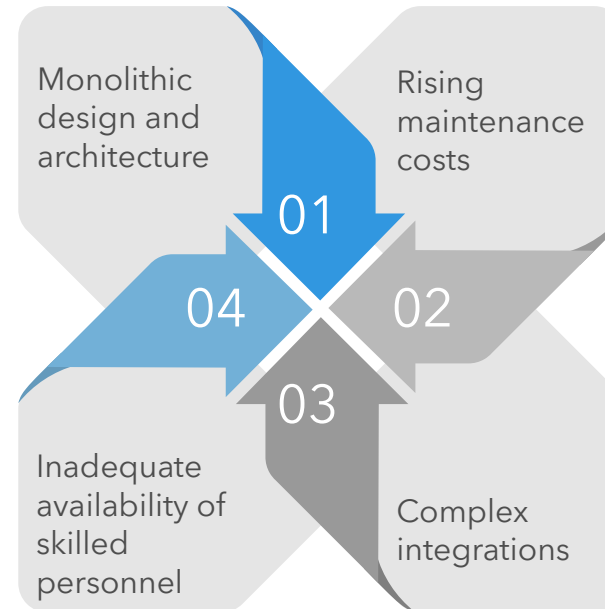
02

- Legacy systems often require specialized knowledge and expertise for maintenance, which can be scarce and expensive to find.
- Outdated technologies require expensive licensing and support fees.
- Enterprises accumulate technical debt over time, leading to higher maintenance costs to fix and maintain the systems' stability and security.

03

- Legacy systems often have various interconnected components leading to complex integration challenges.
- Integrating applications with these systems is time-consuming and prone to compatibility issues.
- Complex integration may result in reduced system performance, hindering the overall efficiency and productivity of the organization.

Monolithic design and architecture — 01
Rising maintenance costs — 02
Complex integrations — 03
Inadequate availability of skilled personnel — 04

Source: Avasant Application Modernization Services RadarView Survey, May–July 2023

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Around 25% of traction of application modernization services is primarily seen among the banking and financial services industries

Given the intricate supply chains and regulatory challenges in the BFSI sector, these industries heavily pursue modernization to bolster risk management and operational resilience.

Percentage of revenue from different verticals for application modernization services

Financial services, 13%

Banking, 12%

High-tech, 11%

Retail & CPG, 9%

Telecom, media & entertainment, 12%

Healthcare & life sciences, 12%

Manufacturing, 9%

Insurance, 8%

Utilities & resources, 5%

T&T, 3%

Others, 2%

N.P., 2%

Gov., 1%

A&D, 1%
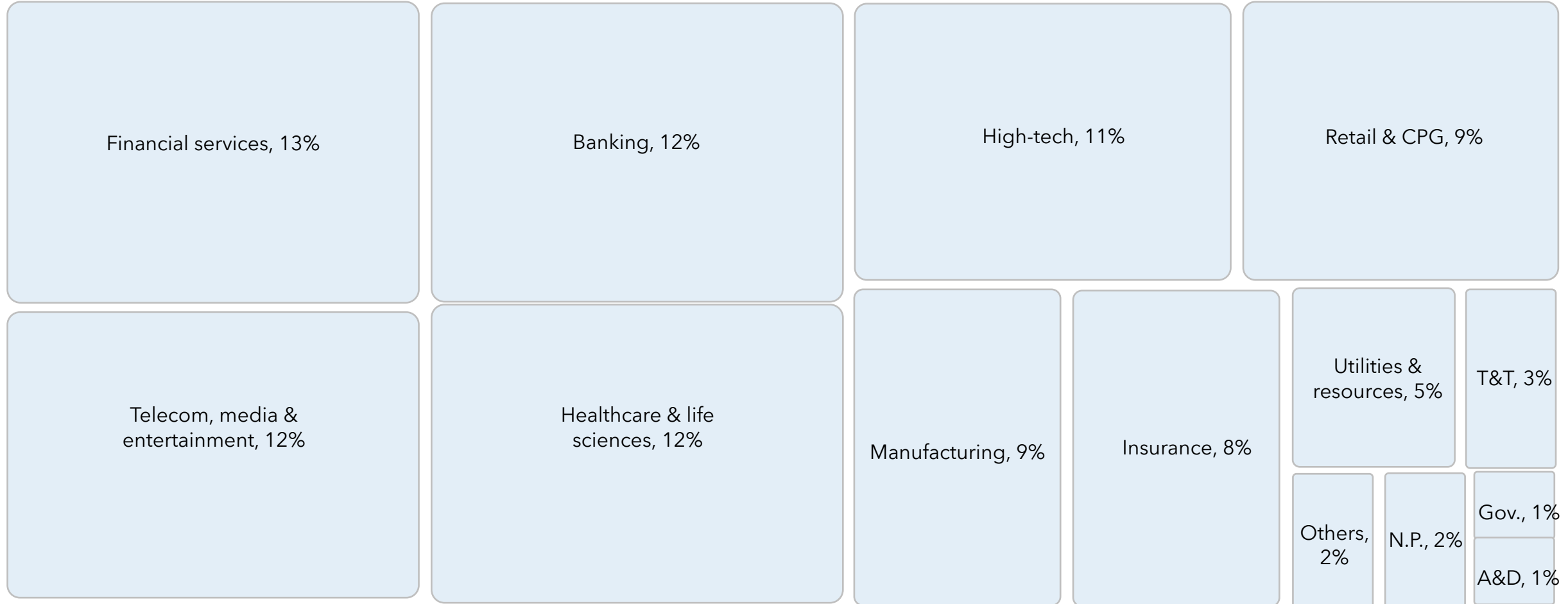
Note: A&D refers to aerospace and defense, T&T refers to travel and transportation, N.P. refers to nonprofits, and Gov. refers to government.

Source: Avasant Application Modernization Services RadarView Survey, May–July 2023

Application modernization is at the forefront of investment pursuit for enterprises across industries

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Industries	Key use cases	Benefits achieved
BFSI	• Risk management and compliance • Fraud prevention and detection • Legacy application integration • Digitization of processes	• Improved data security • Streamlined operations • Enhanced customer experience • Reduced compliance risks
Healthcare & life sciences	• Modernizing clinical trial management systems • Modernizing EHR and telemedicine • Adopting remote patient monitoring systems • Implementing digital health platforms	• Enhanced patient care • Improved data accessibility and interoperability • Accurate diagnosis • Faster drug development
Manufacturing	• Real-time tracking and monitoring of logistics • Safety and security through modern features • Predictive maintenance capabilities • Upgrading ERP systems	• Reduced downtime • Enhanced efficiency • Streamlined operations • Improved logistics planning

Industries	Key use cases	Benefits achieved
Telecom, media & entertainment	• Upgrading billing and customer services systems • Personalized recommendations • Streaming platform modernization • Digital asset management	• Improved billing accuracy • Enhanced customer support • Improved streaming quality and content organization
Retail & CPG	• Personalized customer experiences • Modernizing point-of-sale systems • Upgrading loyalty and CRM systems • Mobile applications for online shopping	• Enhanced customer experience • Faster and smoother transactions • Reduced operational costs • Faster order fulfillment
Government	• Digitizing administrative processes and services • Improving citizen services through digital platforms • Implementing digital identity management • Modernizing legacy applications	• Enhanced service delivery • Increased efficiency • Reduced paperwork • Enhanced security

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Emerging technologies propel enterprise application modernization beyond cloud computing's pervasiveness

Microservices architecture

- Modularity
- Scalability
- Continuous delivery
- Flexibility
- Resilience
- Easy maintenance
- Scalable development teams

Big data and analytics

- Data-driven decision making
- Personalization
- Predictive analytics
- Process optimization
- Real-time monitoring
- Operational efficiency
- Risk management
- Product and service innovation

API interfaces

- Data sharing and synchronization
- Streamlined workflows
- Cross-platform compatibility
- Enhanced functionality
- Security and control
- Rapid development
- Scalability
- Ecosystem connectivity

AI and ML

- Automating processes
- Enhancing data analysis
- Predictive analytics
- Personalized experiences
- Real-time monitoring
- Recommendation systems
- Image and speech recognition
- Fraud detection

Low-code/no-code platforms

- Faster development
- Cross-platform development
- Rapid prototyping
- Increasing agility
- Integration capabilities
- User-friendly interfaces
- Reduced development costs

Emerging technologies driving modernization

Internet of Things

- Real-time data collection
- Device connectivity
- Predictive maintenance
- Efficiency and automation
- Remote monitoring and control
- Enhanced customer experience

Mobile technologies

- Mobile application development
- Enhanced user engagement
- Mobile analytics
- Location-based services
- Mobile customer support

DevOps

- Accelerating development cycles
- Improved collaboration
- Automating build and testing
- Enhanced software delivery
- Rapid feedback loop
- Continuous monitoring
- Scalability and flexibility

Source: Avasant Application Modernization Services RadarView Survey, May–July 2023

Enterprises and service providers are scouting ways to leverage generative AI in application modernization

Generative AI significantly speeds up application modernization, improves code quality, enhances user experience, and enables enterprises with data analysis and continuous improvement capabilities.

Potential use cases

ADOPTION LEVEL — HIGH / LOW

AI PROCESS COMPLEXITY — LOW / HIGH

- Automated code generation
- Data analysis and insights
- Generating UI designs
- Testing and debugging
- Natural language interface
- Predictive maintenance
- Automated refactoring
- Continuous improvement
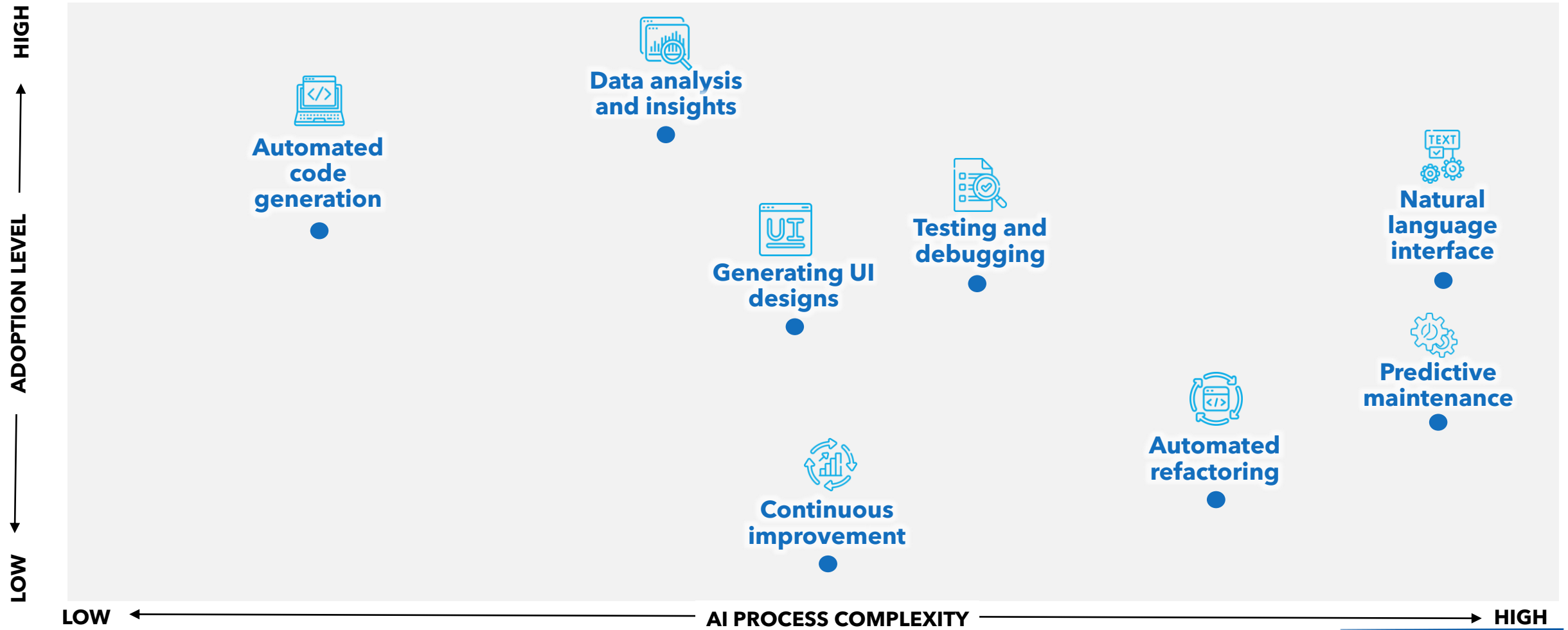
Sustainability is at the top of mind for enterprises while modernizing outdated systems

Reduce carbon footprint

Organizations are reducing their carbon footprint and minimizing environmental impact by adopting modern, energy-efficient technologies such as cloud computing and server virtualization.

Meet regulatory compliance

Increasingly, governments and regulatory bodies are enforcing environmental regulations. Businesses are modernizing systems to comply with these regulations and avoid potential legal and financial penalties.

Strengthen brand loyalty

Committing to sustainability through responsible modernization efforts enhances enterprise reputation, attracts eco-conscious customers, and strengthens brand loyalty.

Enable cost savings

By streamlining processes and eliminating unnecessary overhead expenses, companies reduce waste and use resources more efficiently, resulting in cost savings and sustainability gains.

- Service providers are offering tools for assessing the carbon footprint of each application. This assessment aims to quantify the amount of greenhouse gas emissions, primarily carbon dioxide (CO_2), produced throughout the application life cycle.
- These carbon footprint assessments identify areas where energy efficiency can be improved, reduce emissions, and implement sustainable practices.

Source: Avasant Application Modernization Services RadarView Survey, May–July 2023

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Unisys: RadarView profile

Practice maturity ★★★★

Partner ecosystem ★★★★★

Investments & innovation ★★★★

Offers a Cloud Maturity Assessment Service, leveraging its CloudForte Navigator™ tool, that helps clients evaluate their existing cloud infrastructure and determine the best solutions.

Practice overview

- Practice size: 2300+
- Practice growth: N/A
- Active clients: N/A
- Delivery highlights: 15 delivery centers worldwide

$500M–$1B	5+
AMS revenue, FY 2022–23	Patents granted

Client case studies

- Offered a mortgage solution and integrated over 90 systems for CAIXA using 280 APIs to retain and expand its 70% mortgage lending market share in Brazil. The solution also resulted in a 35.6% growth in loans granted and helped the client regain market leadership for new loans.
- Deployed Enterprise Content Management Solutions and cybersecurity technology to modernize the Philippine Statistics Authority's Civil Registry System. This reduced the time to fulfill document requirements from 7–10 days to 30 minutes and improved citizen satisfaction.
- Provided managed services, including platform and data center solutions, for a European airline's Passenger Services System (PSS) for its customers. It helped the client increase focus on the airline's core business and enhanced passenger satisfaction.
- Modernized the Common Management System of California State University by deploying hybrid cloud and infrastructure solutions and public cloud migration services to enhance the online campus environment. This resulted in a 60% increase in graduation rates over three years.

Key IP and assets

- CloudForte Accelerators: Digital solution assets to accelerate modernization and cloud migration for clients using a preconfigured environment with secure cloud infrastructure/IaC, templates, policies, automated ops, and best practices
- AIOps: A preconfigured, modularized automation platform
- DevSecOps Framework: A tool to provide cloud migration and cloud-native services

Key partnerships

Platform partners

aws Microsoft

Solution providers

Clariti LeanIX

ABACUS.AI

Sample clients

- CAIXA
- California State University
- Globe Life
- National Instruments
- Nevada Department of Public Safety
- Philippine Statistics Authority
- Waka Kotahi New Zealand Transport Agency
- A European airline
- A statutory corporation in Victoria

Industry coverage

- Aerospace & defense
- Banking
- Financial services
- Government
- Healthcare & life sciences
- High-tech
- Insurance
- Manufacturing
- Nonprofits
- Retail & CPG
- Telecom, media & entertainment
- Travel & transportation
- Utilities & resources

Darker color indicates higher industry coverage through digital services ●●●●

Unisys: RadarView profile

Analyst insights

Practice maturity ★★★★

- Unisys has integrated application modernization and development practices in its cloud services. It also focuses on strengthening its capability for cloud-native platforms for AWS and Azure. Its application modernization services include assessment and strategy, migration and transformation, application decomposition, and modernization using DevSecOps-equipped methodology to provide enterprise customers with enhanced user experience.
- Its CloudForte platform, with a modular set of capabilities, is deployed as part of its AI/ML-enabled cloud and infrastructure solutions. The platform modules address client needs at each stage of the cloud journey, from planning and implementation to management and ongoing evolution. It offers value by design, security by default, and compliance at every level. Unisys also provides a Cloud Maturity Assessment Service through CloudForte Navigator, which helps clients evaluate their existing cloud infrastructure and determine the best solutions for their business needs.
- It uses automated tools such as LeanIX for application discovery. It also leverages industry-standard tools and frameworks, such as CAST Highlight and CAST AIP, to assess and redevelop applications for enhanced cloud performance, scalability, and flexibility, modern design and disciplined deployment.

Partner ecosystem ★★★★★

- Unisys plans to list multiple codeveloped solutions in AWS and Azure marketplaces for joint marketing and pipeline expansion with partners. These solutions leverage AWS DevSecOps, Azure Sentinel and security solutions, and Azure Kubernetes services.
- Unisys partnered with Abacus.AI to leverage its expertise in AI and combine it with Unisys' experience in delivering IT services, aiming to provide AI-powered solutions to improve business processes, enhance customer experiences, and optimize operations.
- It has also partnered with Clariti.AI to combine Unisys' expertise in digital transformation services with Clariti's intelligent automation platform. The collaboration aims to offer services including process automation, AI, ML, and RPA to improve operational efficiency and achieve better business outcomes.

Investments and innovation ★★★★

- In December 2021, Unisys acquired CompuGain™ to enhance application modernization and cloud-native agile application development capabilities.
- Unisys invests in the organic development of its cloud-native application development services and architectures. In addition, it develops Azure and AWS data lake modernization and database refactoring for cloud-based data and analytics solutions. It has also invested in developing specialized blueprints for high-intensity workloads with embedded encryption and high availability as part of its cloud management solutions.
- It augments its hybrid cloud capabilities with Unisys Automation Hub, which works across different business units. The hub delivers automation for solutions and platforms by leveraging hyper-automation, scalable processes, transformation capability, data analytics, and process mining.

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Appendix:
About RadarView

The Application Modernization Services RadarView assesses service providers across three critical dimensions

Practice maturity

- This dimension considers the current state of a provider's AMS practice in terms of its strategic importance for the provider, the maturity of its offerings and capabilities, and client engagement.
- The crucial aspects in this dimension are the width and depth of the client base, usage of proprietary/outsourced tools and platforms, and quality of talent and execution capabilities.

Partner ecosystem

- This dimension assesses the nature of the ecosystem partnerships of the provider, the objectives of the partnerships (codevelopment and co-innovation), and its engagement with solutions providers, startup communities, and industry associations.
- Vital aspects in this dimension are the evaluation of joint development programs around offerings, go-to-market approaches, and the overall depth of partnerships.

Investments and innovation

- This dimension measures the strategic direction of investments and resultant innovations in the offerings and commercial model and how it aligns with the future direction of the industry.
- The critical aspects of this dimension include both organic and inorganic investments toward capability and offering growth, technology development, and human capital development, along with innovative solutions developed with strategic partners.

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RADARVIEW™

Avasant based its analysis on several sources:

Public disclosures	Publicly available information such as Securities and Exchange Commission (SEC) filings, annual reports, quarterly earnings calls, and executive interviews and statements
Market interactions	Discussions with enterprise executives leading digital initiatives and influencing service provider selection and engagement
Provider inputs	Inputs collected in December 2022 through an online questionnaire and structured briefings in January–March 2023

Of the 34 service providers assessed, the final 23 featured in the Application Modernization Services RadarView for 2023 are:

accenture   Capgemini   cognizant   DATAMATICS

Deloitte.   EVIDEN an atos business   GAVS   HCL.Tech

HEXAWARE   HITACHI Inspire the Next   IBM   Infosys

JADE   kyndryl   Mphasis The Next Applied   NTT DATA

Persistent   tcs TATA CONSULTANCY SERVICES   Tech Mahindra   unisys

UST   virtusa   wipro

Note: Assessments for Accenture, Capgemini, Deloitte, IBM, Hexaware, IBM, TCS, and Virtusa were conducted based on public disclosures and market interactions only.

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Reading the RadarView

Avasant has recognized service providers in four classifications:

LEADER — Application Modernization Services 2023

Leaders show consistent excellence across all key dimensions of the RadarView assessment (practice maturity, partner ecosystem, and investments and innovation) and have had a superior impact on the marketplace. These providers have shown true creativity and innovation and have established trends and best practices for the industry. They have proven their commitment to the industry and are recognized as thought leaders in their space, setting the standard for the rest of the industry to follow. Leaders display a superior quality of execution and a reliable depth and breadth across verticals.

INNOVATOR — Application Modernization Services 2023

Innovators show a penchant for reinventing concepts and avenues, changing the very nature of how things are done from the ground up. Unlike leaders, innovators have chosen to dominate a few select areas or industries and distinguish themselves through superior innovation. These radicals are always hungry to create pioneering advancements in the industry and are actively sought after as trailblazers, redefining the rules of the game.

DISRUPTOR — Application Modernization Services 2023

Disruptors enjoy inverting established norms and developing novel approaches that invigorate the industry. These providers choose to have a razor-sharp focus on a few specific areas and address those at a high level of granularity and commitment, which results in tectonic shifts. While disruptors might not have the consistent depth and breadth across many verticals like leaders or the innovation capabilities of innovators, they exhibit superior capabilities in their areas of focus.

CHALLENGER — Application Modernization Services 2023

Challengers strive to break the mold and develop groundbreaking techniques, technologies, and methodologies on their way to establishing a unique position. While they may not have the scale of the providers in other categories, challengers are eager and nimble and use their high speed of execution to great effect as they scale heights in the industry. Challengers have a track record of delivering quality projects for their most demanding Global 2000 clients. In select areas and industries, challengers might have capabilities that match or exceed those of the providers in other categories.

Key contacts

A. Tarun
Senior Analyst
a.tarun@avasant.com

Bertrand Leroux
Former CIO, Activision Blizzard, and
Distinguished Fellow at Avasant
bertrand.leroux@avasant.com

Henry Guapo
Managing Partner
henry.guapo@avasant.com

Robert Devers
Prinicpal, Avasant
rob.devers@avasant.com

Gaurav Dewan
Research Director
gaurav.dewan@avasant.com

Swapnil Bhatnagar
Senior Research Director
swapnil.bhatnagar@avasant.com

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