



# HFS Top 10: Application Modernization Services, 2022

FEBRUARY 2022

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Excerpt for Cognizant



Application modernization is critical for the journey to cloud-native business operations. Many firms actively partner with services providers to accelerate the development, delivery, and distribution of data and insights via “cloudified” workloads and processes. From legacy to micro services architectures, the focus is on experience and value creation. The top vendors shine through vision, execution, and customer excellence.

Joel Martin, Research Lead, HFS

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# 1

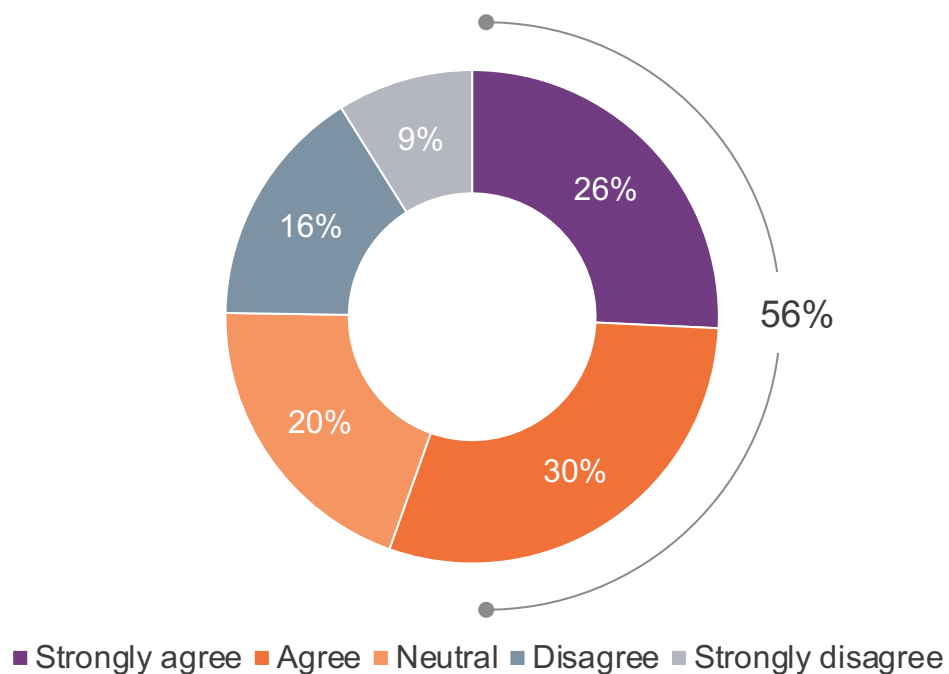
## Executive summary

# Executive overview: Application modernization services

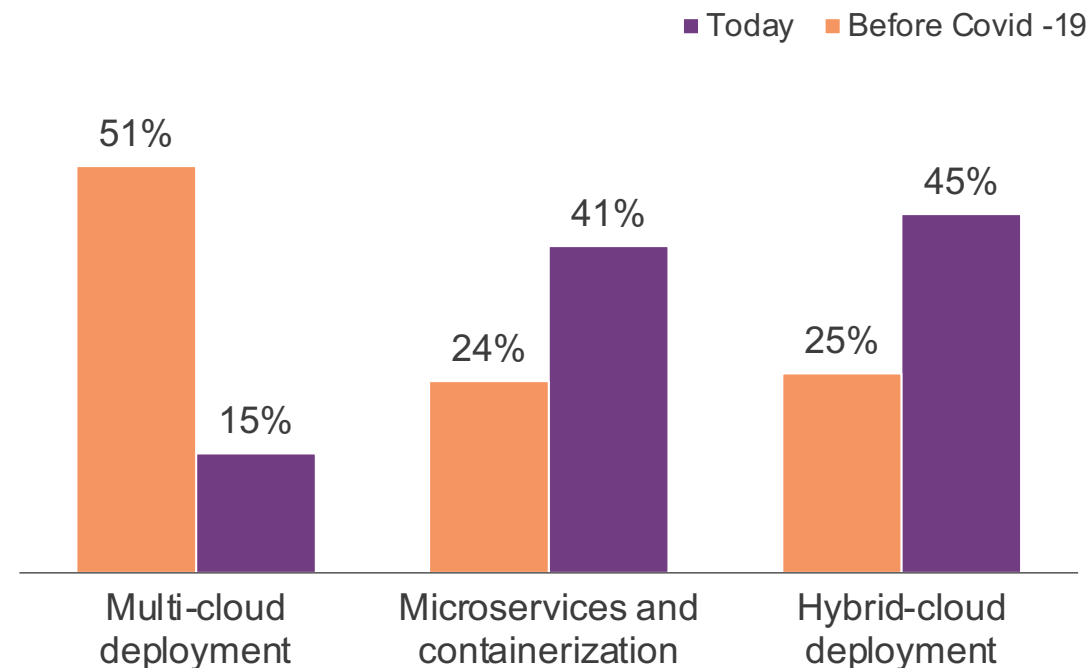
- 1 Application modernization services is experiencing growth of more than 40% as companies modernize legacy systems and build cloud-first solutions.
- 2 Application modernization services is a journey that will result in many firms straddling legacy and cloud-first applications deployment. Agility and co-innovation with partners is essential.
- 3 The business, not IT, is the end consumer and often the budget holder for these projects. Providers must consider new pricing models that reflect outcome-based risk and reward.
- 4 The OneOffice™, a silo-breaking mindset, is crucial. This mindset must be cultivated and delivered so that the business, technology, and customer realize benefits.
- 5 An application modernization value stream should be in place to assess, rationalize, optimize, and create new solutions and lead to a modern software development life cycle.

# As cloud becomes a de facto delivery model, the need for application modernization increases dramatically

## Cloud migration has become an absolute necessity post-COVID-19

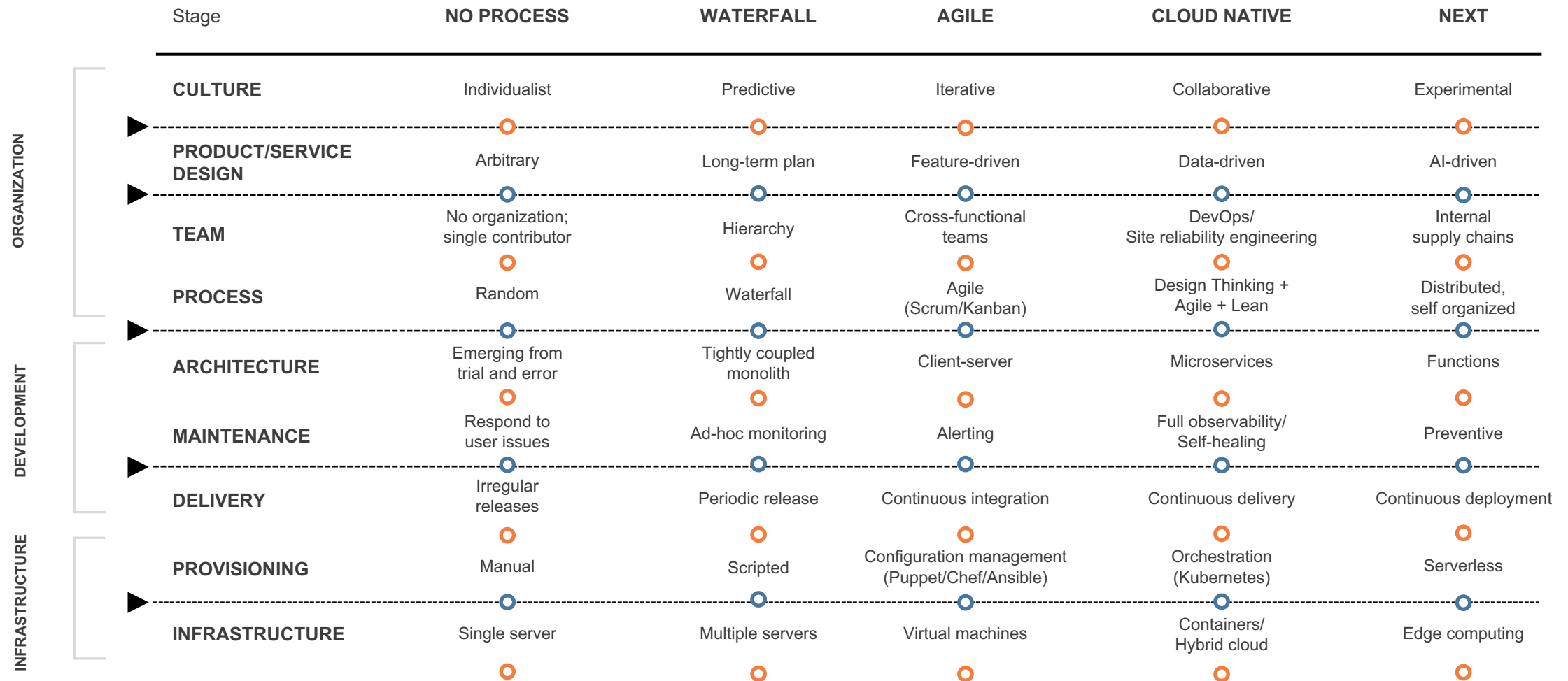


## Q: Please select the most important cloud investment.



Sample: 300 executives across Global 2000 enterprises surveyed in May-June 2020 (Phase II sample)  
Source: HFS Research in conjunction with KPMG

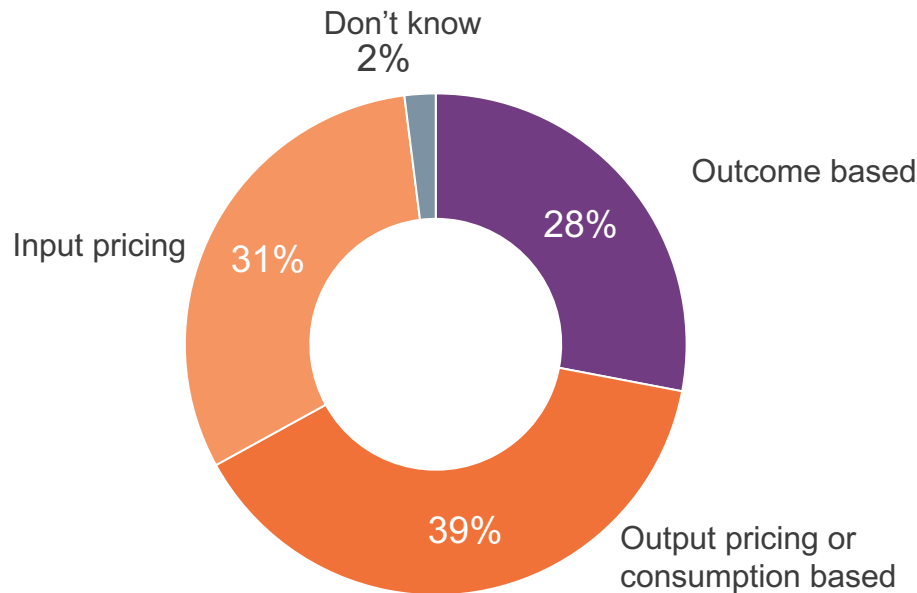
# Becoming cloud-native brings a need for applications modernization towards solutions like microservices and Kubernetes



Source: HFS Research, Container Solutions

# Project pricing models for application modernization are increasingly outcome and output based

What pricing model do you use for each of the following business and technology services?



Front-office modernization projects increasingly require services providers to put some skin in the game and price with success-based models that share overall customer objectives.

Keep offering time and materials, fixed fee, and resource utilization pricing models at your own risk! As the business funds more of these projects, expect to be putting more skin in the game. Prepare your account teams with models and methodologies that can support this expectation.

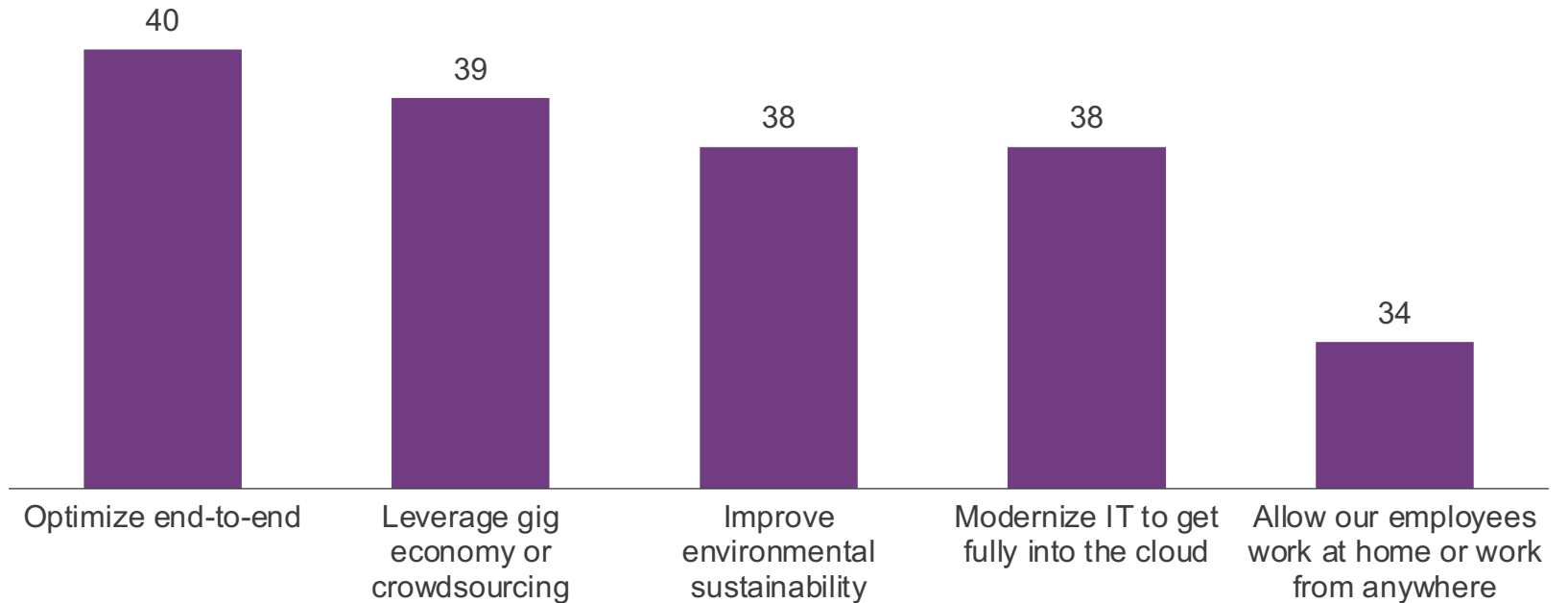
Sample: 800 respondents from Global 2000 enterprises  
Source: HFS OneOffice™ Pulse Study, H1 2021



# Cloud-native software and service delivery drive our new ways of working

What are the major changes in your organization's ways of working for the next 12 to 18 months?

Percentage of respondents

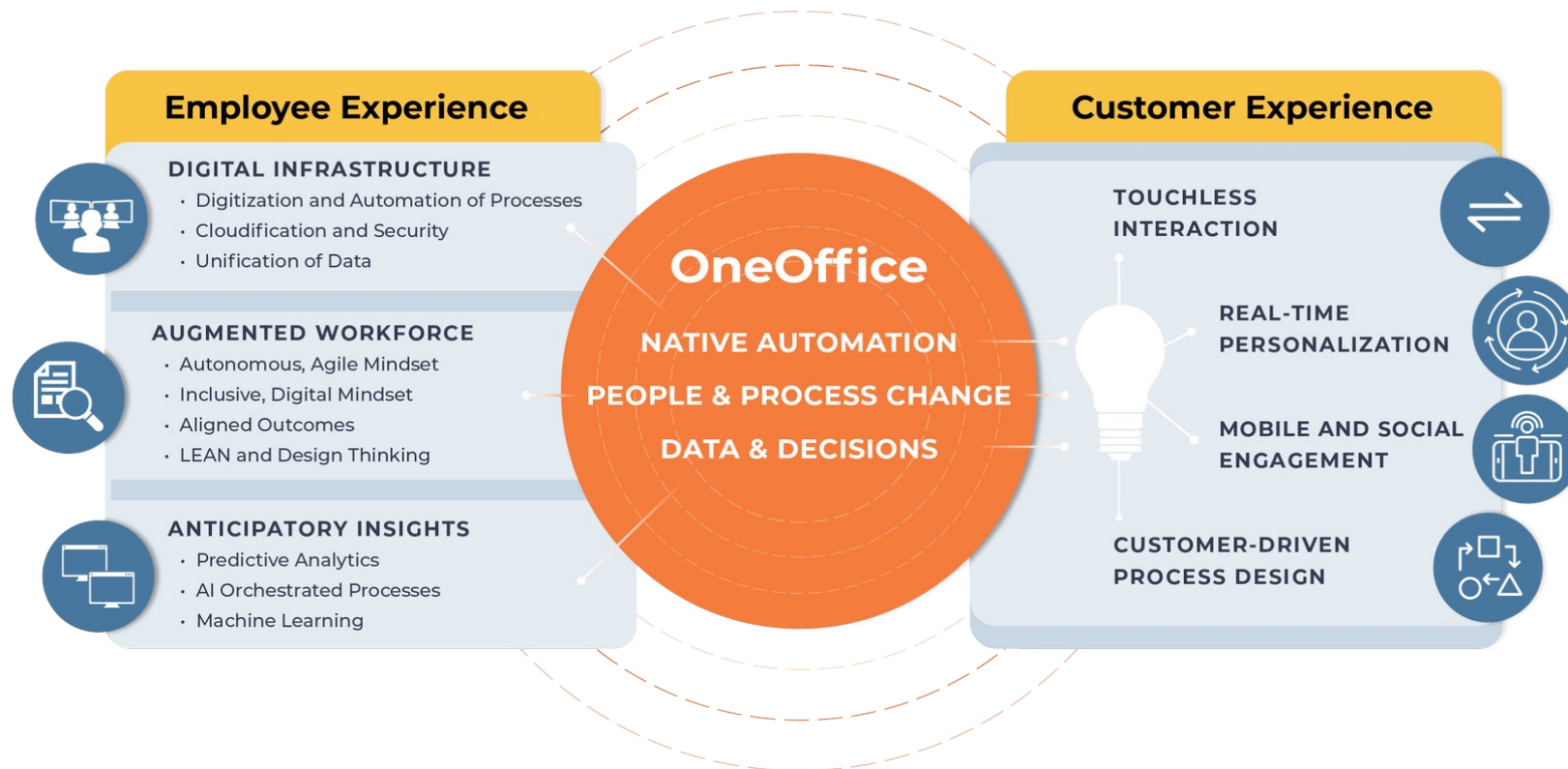


- Technology drives operational changes in the “new ways of working” that deliver experiences internally and externally
- This OneOffice mindset drives culture change at a scale and velocity most organizations are not equipped for

Sample: 800 respondents from Global 2000 enterprises  
Source: HFS OneOffice™ Pulse Study, H1 2021

# The HFS OneOffice™—digital transformation in action

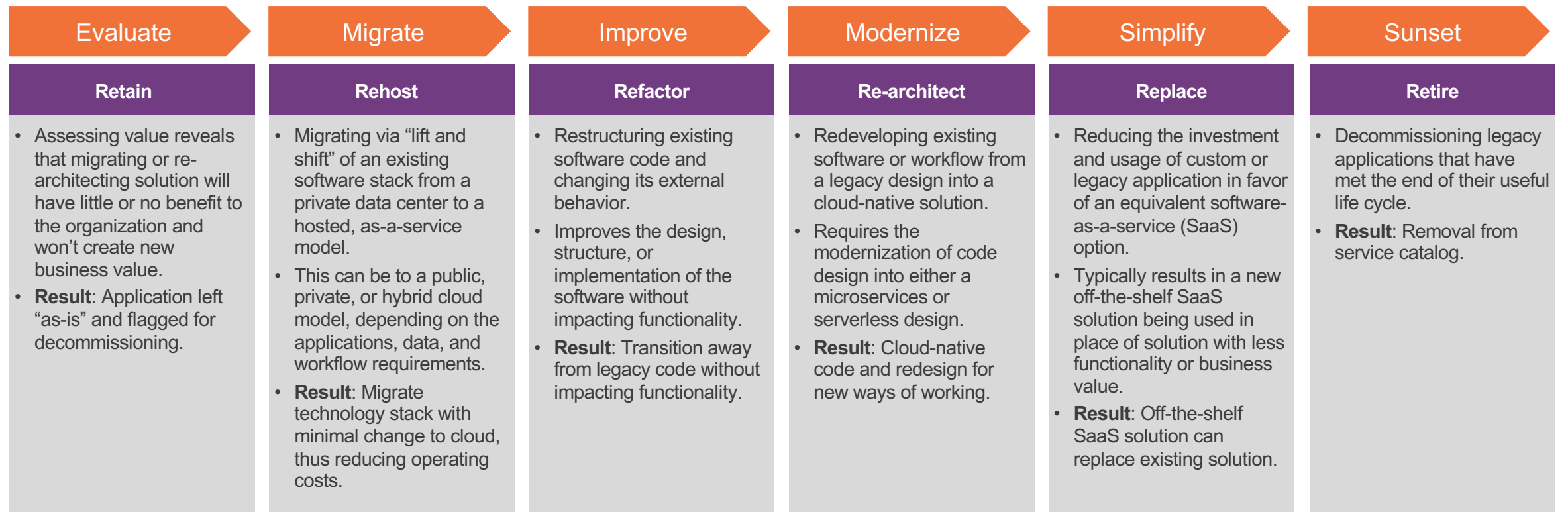
The HFS OneOffice™ is our vision for actionable digital transformation. At its heart is the core concept that emerging technologies combined with people, process, and data innovation can break down the silos that limit our success, dissolving barriers between the front and back office to create the only office that matters—OneOffice. It represents a mindset shift to collaborative cross-functional enterprise operations powered by an integrated stack of emerging tech that complements your core, natively automates your processes, enables your employees and customers, and powers your decisions—breaking down your legacy silos in the process.



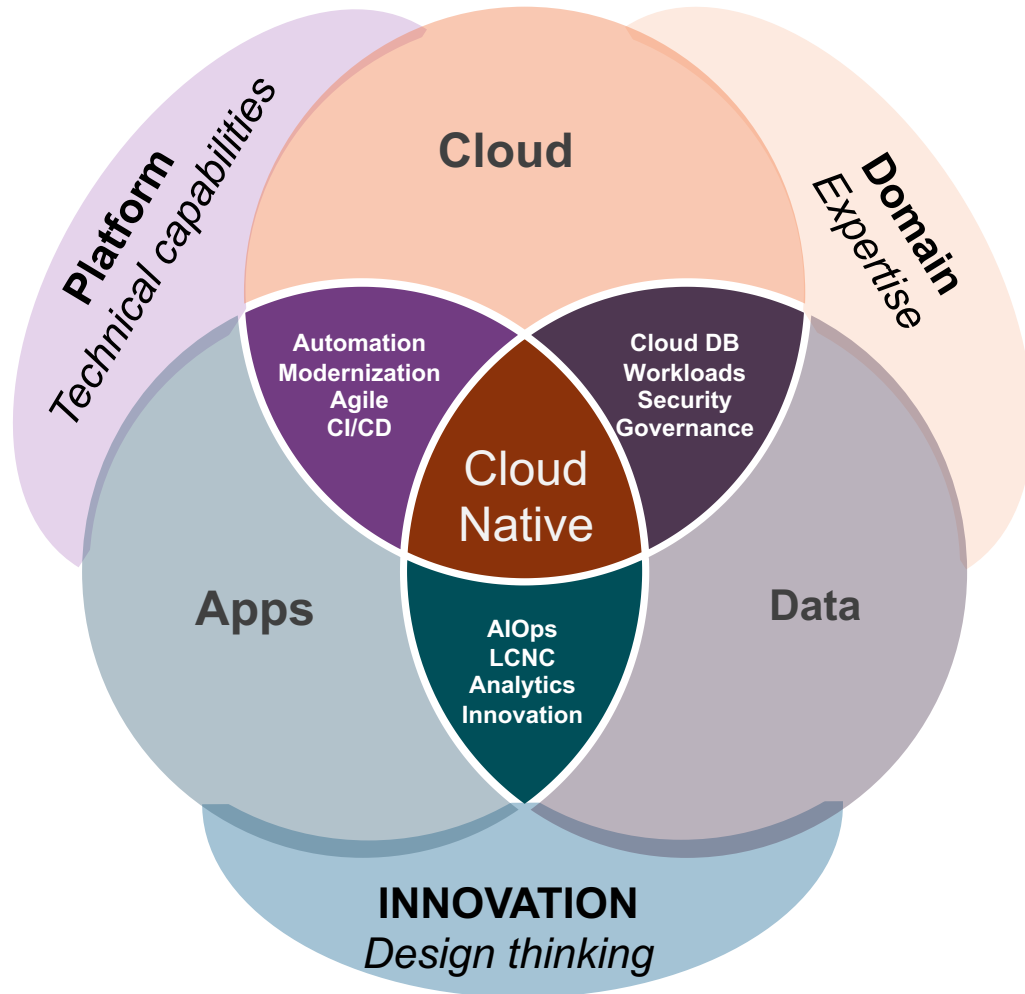
Source: HFS Research, 2022

# The HFS application modernization services value chain

**Application modernization services:** The array of services designed to help enterprise technology and business teams in their efforts to create a culture of services, business process information, and workload data via cloud-native models. These include services that rehost, refactor, re-architect, replace, retain, or retire existing software or workflows.



# HFS' elements of a cloud-native organization



**The cloud-native organization:** Achieving an intersection of innovation and aspiration at scale for delivering digital assets, domain expertise, and experiences.

- **Cloud:** Platform for compute at scale
- **Apps:** Assembly of workloads and insights at speed
- **Data:** Consumption of information at context
- **Domain:** Expertise of vertical capabilities with knowledge of what matters
- **Platform:** Curating and delivering data and information dynamically to shape experiences
- **Innovation:** Finding new ways to seek truth, execute, and consume in real-time

# 2

## Research methodology

# Service providers covered in this report

## TOP 10



## Formidable challengers\*



\* Top 10 study participants have application modernization services revenue of more than \$1 billion and diverse, global delivery as minimum requirements. Formidable challenger participants fall below this threshold but offer specialized value to enterprises seeking application modernization services.

# About the research

1. We asked services providers to participate in our application modernization services study; however, participation was not mandatory and HFS has not ranked non-participants.
2. Firms that qualified for ranking in the Top 10 had to show the following:
  - Greater than \$1 billion in application modernization and services revenues
  - Global delivery capabilities
  - A minimum of three client referrals
  - A minimum of 10 case studies
3. Firms with application modernization services that did not meet this criteria are covered in the Market Analysis: Formidable Challengers report.
4. We executed research from August 2021 to November 2021.
5. We collected data from RFIs completed by each services provider, individual briefings, case studies, client interviews, surveys, vendor websites, publicly available financial data, existing HFS research, and third-party websites.
6. We based rankings on four categories (see page 17).
7. We provided a list of common definitions to all participants (see page 18).

# Sources of data

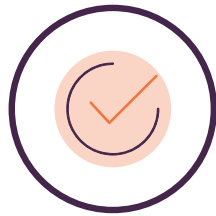
This report relied on myriad data sources to support our methodology and help HFS obtain a well-rounded perspective on the application modernization services capabilities of the providers covered in our study. Sources are as follows:



## RFIs and briefings

Each participating vendor completed a detailed RFI.

HFS conducted briefings with executives from each vendor.



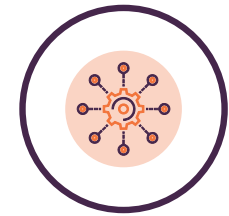
## Reference checks

We conducted reference checks with **60+ active clients** of the study participants via detailed surveys and phone-based interviews.



## HFS vendor ratings

Each year, HFS fields multiple demand-side surveys in which we include detailed vendor rating questions. For this study, we leveraged our fresh from the field HFS Pulse Study data featuring **~800 inputs into adoption of cloud and application services.**



## Other data sources

Public information such as press releases, web sites, etc.

Ongoing interactions, briefings, virtual events, etc., with in-scope vendors and their clients and partners.



# Scoring methodology

The study evaluates the capabilities of application modernization service providers based on execution, innovation, voice of the customer (VOC), and a new criteria for 2021, alignment with the HFS OneOffice model—our vision for digital transformation. Details include:



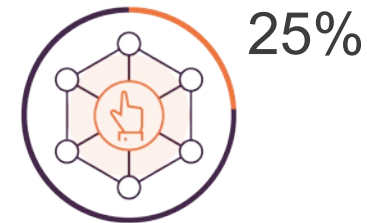
## Execution

- **Breadth and depth of capabilities:** Clarity of offering, capabilities needed to deliver, frameworks and methodologies, and competitive differentiation.
- **Scale and growth of application modernization business:** Development of domain or industry solutions, examples of growth, and mergers and acquisitions to bolster offerings and address gaps.
- **Talent and delivery:** Staffing strategy, use of project methodologies, test and QA capabilities, ability to address impediments.
- **Partner ecosystem:** Partnerships with ISVs, hyperscalers, and cultivation of new partnerships.



## Innovation

- **Strategy and vision:** Vision for the application modernization business, credibility of growth strategy and roadmap, identifiable investments in strategy, clear articulation of value proposition.
- **Technology innovation:** Cultivation of internal IP, patents, application modernization solution combos, use of best-of-breed partner tech, start-up ecosystem approach, co-innovation and collaboration, investment in R&D.
- **Change agents:** Investments in new partnerships, emerging technologies, and pricing models.



## OneOffice alignment

- **OneOffice scope:** End-to-end offering that connects front, middle, and back offices.
- **OneOffice skills:** Cultivation of OneOffice skills internally and with clients such as digital fluency or problem solving.
- **OneOffice competencies:** Formalized approaches to data and change management.
- **OneOffice technology platform:** Enabling capabilities that support “straight-to-digital.”
- **OneOffice business value creation:** Delivery of expected outcomes, right the first time.



## Voice of the customer

- **Reference checks:** Direct feedback from enterprise clients via reference check interviews and surveys.
- **HFS voice of the customer vendor rating data:** Ratings by active clients of in-scope service providers.
- **Reference ability:** Provision of references and reference responsiveness.
- **Insights from non-reference clients:** Case studies and HFS survey data.

# Useful definitions

- **Agile:** A people-focused, results-focused approach to software development that respects our rapidly changing world. It's centered around adaptive planning, self-organization, and short delivery times.
- **Application orchestration** (or service orchestration): The process of integrating two or more applications or services to automate a process or synchronize data in real-time.
- **Cloud database:** A database that typically runs on a cloud computing platform; access to the database is provided as-a-service. There are two common deployment models. Users can run databases on the cloud independently, using a virtual machine image, or they can purchase access to a database service maintained by a cloud database provider.
- **Cloud native:** An approach in software development using cloud computing to its fullest due to its use of an open-source software stack to deploy applications as microservices on public, private, or hybrid cloud infrastructure
- **Containers:** Containers are an executable unit of software in which application code is packaged, along with its libraries and dependencies, in common ways so that it can be run anywhere, whether it be on desktop, traditional IT, or the cloud database provider.
- **DevOps** (incl DevSecOps): DevOps is the teaming of people, processes, and technology to continually provide value to customers by creating, testing, and delivering software for an organization.
- **Domain-driven design:** The concept that the structure and language of software code should match the business domain
- **IaaS:** A form of cloud computing that delivers fundamental compute, network, and storage resources to consumers on-demand, over the internet, and on a pay-as-you-go basis.
- **K3S:** Lightweight Kubernetes gaining popularity in IoT and embedded software development and management
- **Kubernetes** (K8S): Kubernetes is an open-source container-orchestration system for automating computer application deployment, scaling, and management.
- **Low code** (LC): If there are prepared data exchanges, defined systems or applications, or some additional development time to create a minimal viable product (MVP). Low code is offered by vendors as a packaged solution or a component of their existing offering. Low code allows for better co-innovation between IT and business as it captures business requirements and creates code that an organization's software teams can further develop, optimize, and support.
- **Microservices:** Builds individual applications to be more agile, scalable, and resilient. Microservices are a true cloud-native architectural approach, and by using them, teams can update code more easily, use different stacks for different components, and scale the component independently of one another, reducing the waste and cost associated with having to scale entire applications because a single feature might be facing too much load.
- **Monolithic application:** A single-tiered software application in which the user interface and data access code are combined into a single program from a single platform.
- **Multi-tier architecture:** A client-server architecture in which presentation, application processing, and data management functions are physically separated. The most widespread use of multi-tier architecture is three-tier architecture.
- **No code** (NC): Does not require additional integration, development, or customization to be configured for the solution to run. No-code solutions are offered as tools that often provide a discrete function or service which a business team is responsible for monitoring, analyzing, and adapting to changing business or market requirements with little or no IT support.
- **On-premise (software):** Software that is installed and runs on computers on the premises of the person or organization using the software.
- **PaaS:** A category of cloud computing services that allows customers to provision, instantiate, run, and manage a modular bundle comprising a computing platform and one or more applications, without the complexity of building and maintaining the infrastructure typically associated with developing and launching the application, and with allowing developers to create, develop, and package such software bundles.
- **Rearchitect:** A legacy monolithic application is re-architected according to the microservices model, containerizing them and rolling out modern DevOps practices.
- **Rebuild:** Used to achieve the most substantial benefits of the cloud, and for any application that can provide a strategic or competitive advantage for your organization.
- **Refactor:** The application codebase largely remains the same while it is migrated to cloud infrastructure-as-a-service (IaaS), including cloud-based storage, compute, and network resources.
- **Rehost:** As referred to as "lift and shift," this strategy involves migrating a part of the application (or a complete application) from an on-premise or existing cloud environment to a new cloud environment. This is done with very little or no modification. While implementing a lift and shift approach, it may require a change in the host configuration if the application is shifting to new cloud-based hardware.
- **Replace:** Used when a legacy application has some functionality that is still useful, you can sometimes replace it with a nimbler cloud-based solution.
- **Serverless applications:** Serverless computing enables developers to build applications faster by eliminating the need for them to manage infrastructure. With serverless applications, the cloud service provider automatically provisions, scales, and manages the infrastructure required to run the code.
- **Service-oriented architecture (SOA):** An enterprise-wide approach to software development that takes advantage of reusable software components or services. Each service is comprised of the code and data integrations required to execute a specific business function—for example, checking a customer's credit, signing into a website, or processing a mortgage application. For this research, we are also referring to "SOA" as macro-services where existing applications are modernized for rehosting in the cloud but still maintain many of the core functions and code of their heritage.
- **Value orchestration:** The process of integrating application with automation and real-time customer/user feedback to hasten development and release cycles.
- **Value stream management:** A lean business practice that helps determine the value of software development and delivery efforts and resources.
- **Waterfall:** A breakdown of project activities into linear sequential phases, where each phase depends on the deliverables of the previous one and corresponds to a specialization of tasks.
- **Workload:** A collection of resources and code that delivers business value, such as a customer-facing application or a backend process.

# 3

## Research insights

# Application modernization requires enterprises to assess security, data, DevOps, and tools to deliver value to the OneOffice

In our application modernization research, HFS conducted in-depth interviews, collected qualitative and quantitative insights through a detailed RFIs, and engaged in customer interviews. As part of our due diligence, we delved into how leading services providers articulate their different points of view on important aspects related to application modernization.

The following slides highlight responses on the complementary components of the modernization effort, including security, Agile methodologies, automation, data modernization, and the adoption of a OneOffice™ mindset.

We believe application modernization cannot be a siloed effort about moving software into the cloud without considering these five components. Understanding these points of view provides valuable insights into the offerings and approach services providers have chosen as they help customers accelerate, adopt, and deliver cloud-native solutions.



# Top three primary challenges

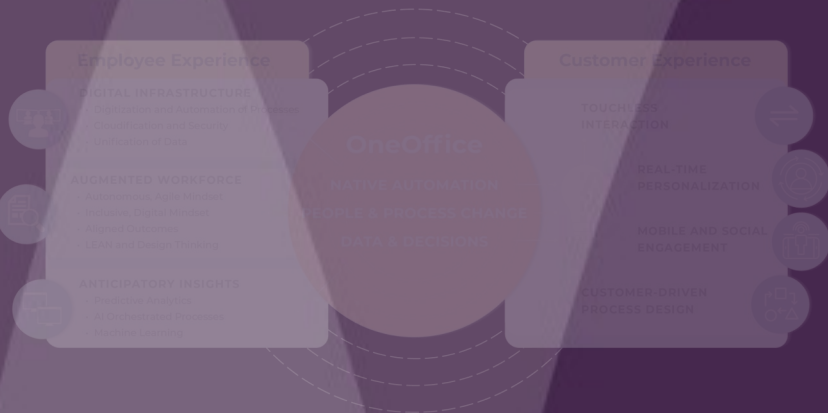
As part of our data collection, each services provider shared its top three challenges when engaging with customers. In most cases, these represent the impediments faced when working with clients to assess, scope, and drive consensus around reaching desired outcomes.

The three most common themes include **customers not understanding the cultural changes, costs of organizational change management, and budget constraints.**

**Q. What are the three most common challenges your firm faces when working with customers on application modernization projects?**

	Accenture	Capgemini	Cognizant	EY	HCL	IBM	Infosys	TCS	LTI	Tech Mahindra	Wipro
1	<b>Culture and mindset change needed</b>	Business or client focus is lacking in the IT department	Amount of modernization needed or dependencies	Limited business stakeholder leadership	Existing systems knowledge deficit	Amount of modernization needed or dependencies	<b>Misalignment of vision between business and technology</b>	<b>Aligning application modernization to a new operating model</b>	<b>Cultural change and management support for application modernization</b>	<b>Budget constraints</b>	Overcoming the large amount of legacy or technology debt
2	Overcoming the large amount of legacy and technology debt	Clients expect an immediate rather than incremental change	Overcoming the large amount of legacy and technology debt	Confusion between migration and modernization	<b>Underestimation of the impact of architecture change</b>	Multi-cloud control and management across data, apps, and workloads	Lack of proper governance and poor project planning	<b>Organizational change management</b>	Complexity of application portfolio	Misalignment of vision between business and technology	Investing in data quality and desired insights
3	<b>Customers must adopt a new operating model</b>	Projects are missing NFRs and interoperability requirements	<b>Budget constraints</b>	A lack of talent or resources	<b>Organizational change management</b>	<b>Culture and mindset change needed</b>	Talent mismatch between legacy and modern skills	Investing in data quality and desired insights	Silos and lack of standardization	<b>Organizational change management</b>	Risk of not appreciating dependencies or integrations while modernizing

# Insights from the firms HFS interviewed...



## How does application modernization lead to a OneOffice™ mindset?

**Cognizant:** The modernization of the front end/customer experience layer is a key part of Cognizant’s efforts to bring value to business and technology teams during application modernization. Cognizant employs a Customer Value Management framework; this is an outside-in and inside-out approach, meant to provide the whole team with the understanding of the customer’s desired outcomes. With these insights, their teams can develop a comprehensive transformation roadmap to improve customer experience.

**Infosys:** As enterprises shift to a cloud-based business, the OneOffice experience will be delivered through context capture and data processing across multiple digital touchpoints. As enterprises undergo this transformation toward a more connected ecosystem underpinned by seamless data flow, they are migrating across three horizons: from disparate legacy systems that are monolithic and have the data trapped into legacy systems (H1) to boundaryless systems that are becoming mainstream (H2) and finally to [a] Live Enterprise [where information is delivered based on immediate] relevance (H3).

**IBM:** We leverage the IBM Garage to deliver practices, people, and technology to co-create solutions to meet our clients’ needs to respond quickly to disruption and power digital disruption. When modernizing applications, it is imperative to meet the clients where they are on their transformation journey, which means designing personalized experiences by modernizing the front end/customer experience layer to directly map their customer needs to business outcomes.

**EY:** EY takes a holistic approach to front-to-back transformation for technology and application modernization initiatives. The firm starts by analyzing end-to-end views of customer journeys. EY then brings business and technology teams together across silos to understand how information works for multiple business silos and customer groups. Preparing for the OneOffice outcomes early in the project allows for rapid solution development and co-creation across our projects.

**Accenture:** Accenture’s business and technology advisory services helps organizations strike the right balance between gaining IT efficiencies through speed, agility, and cost reductions while introducing new business enablement through a product-based culture and applications combined with the power of analytics, AI, and cloud-provider platform services. The firm focuses on de-coupling front and back-office functionality and technology requirements versus business needs and outcomes. Focusing on what people need and how they can use it is core to the OneOffice.



# Insights from the firms HFS interviewed...



## How are clients aligning application and data modernization?

**Accenture:** Accenture promotes its ability to help clients set the stage by running assessments of their data landscapes, selecting the right target architectures, planning and building a data foundation, and migrating data where necessary. The firm applies automation and optimization tools as part of its core efforts and brings data governance practices to each project.

**Capgemini:** Capgemini believes the alignment of data with application modernization is a critical success factor for organizations. The firm supports its clients in assessing and readying data with application modernization by using a mix of automation, robotics, AI, and analytics at scale in their projects.

**EY:** Data modernization is a key focus area in EY's application modernization approach, as legacy databases (including mainframe) often no longer meet the needs of our clients in terms of business agility, cost savings, increased productivity, and reduction of technical debt. Data modernization focuses on developing modern database capabilities using cloud database services, transforming existing data to unlock business value that customers invested in their legacy databases.

**Wipro:** Wipro provides a vertical portfolio for major industries aimed at solving specific business problems while building and developing more solutions to cater to client needs. These solutions, along with cloud enablement capabilities, can help clients in rapid and risk-free modernization journeys while deriving more meaningful insights, streamline their business process, and automating more aspects of their businesses and information workloads.

**Infosys:** Infosys sees data playing a crucial part as enterprises undergo their transformation toward a connected ecosystem underpinned by seamless data flow. Enterprises must address legacy applications while modernizing on cloud. Application modernization, therefore, goes together with data modernization in all our programs. We believe that any modernization to cloud will fail unless the data is also modernized.

# Insights from the firms HFS interviewed...

## How do Agile and application modernization fit together in your practice?

**Accenture:** Accenture does not replace Agile, but what differentiates the firm's offering is how it applies Lean Product methodologies to application modernization. This allows Accenture to offer balanced teams to function more efficiently when building a product roadmap and managing the backlog. Product managers, software engineers, and user-centered designers collaborate to build software in a flat team structure.

**IBM:** For IBM, Agile is about being nimble in this new normal to help customers scale up effectively to meet dynamic market conditions and manage remote workforces efficiently, making the need for agility inevitable. Agile continues to be the core business approach with almost all application management engagements being delivered through an Agile framework.

**TCS:** In the face of the COVID-19 pandemic, TCS' Location Independent Agile laid the foundation for a swift and seamless transition to remote working through its Secure Borderless Workspaces (SBWS). SBWS is a transformative operating framework that enables remote access for employees and sets up a suitable cybersecurity framework and all project management practices and systems needed to ensure quality and timeliness of client deliveries.

**LTI:** LTI combines design thinking from a strong engineering background with "new ways of working." It depends on an agile mindset for the partner and the customer. For transformation or modernization to be effective, the technology and business teams must share an ability to co-innovate and act together to design, develop, and deliver a solution.

**Wipro:** Wipro takes the stance that Agile must incorporate Lean design efforts. For Wipro clients, the goal is to deliver the maximum customer value in the shortest sustainable lead-time while providing the highest possible quality. It will help in reducing the risk of building the wrong thing while comfortably changing direction.



# Insights from the firms HFS interviewed...

## How is automation part of the application modernization services effort?

**Cognizant:** Cognizant's clients desire fast results, and automation is a key part of the approaches to ensure modernization yields faster time to market. Cognizant provides a variety of intellectual property, domain accelerators, frameworks, and methodologies that accelerate the assessment, design, and execution of a project. Having these solutions allows Cognizant to deliver substantial productivity benefits and faster time to market and address the diverse needs of our clients.

**IBM:** Automation is the very foundation that supports all of IBM's cloud transformation offerings, spanning strategy, discovery, design, build, and management. Our modernization offering strategy is to infuse extreme automation that is open and extensible wherever possible with open source, IBM, and third-party tools.

**EY:** Automation tools and technologies are implemented at various points across all phases of EY's application modernization life cycle. Our approach for any modernization engagement has an automation-first mindset with a critical focus on adoption and implementation automation practices for CI/CD, container orchestration, management, configuration, scaling, and implementing processes with our customers.

**TCS:** TCS's approach to automation is underpinned by our Machine First philosophy that gives the first right of refusal to technology with a view to augment human capability to drive exponential business outcomes. TCS MFDM (Machine First Delivery Model) is how we deliver it combining the here and now value of automation, analytics, and AI.

**Capgemini:** In the modernization journey, Capgemini automates activities in every phase. During the initial assessment phase, our firm utilizes both agent-based and agent-less utilities to capture the details of current infrastructure and applications and their interdependencies and inter-communication. Capgemini applies a suite of automated application tech-stack and code analyzers to capture the application tech stack, libraries, and code module details. Automation accelerates success.

# Insights from the firms HFS interviewed...

## What is the role of security in application modernization?

**Infosys:** Infosys' CyberSecurity instills trust into the business of our clients by enabling and enhancing their digital ambitions. By driving enterprises' mindset towards "Secure by Design" at every stage of the business life cycle, we minimize security risks while maximizing the visibility of the security threat, impact, and resolution.

**HCL:** HCL's CSaaS solution provides a well-rounded approach to its application modernization services comprising strategy and architecture, transformation and integration, and managed security services. By incorporating security throughout DevSecOps, HCL offers customers a dynamic security posture meant to drive confidence in development, deployment, and management.

**Capgemini:** Security is an integral part of the application modernization life cycle. We have a well-defined DevSecOps adoption framework to help our clients mitigate and handle security at all levels: infrastructure, communication, platform, application, data, and access (authentication / authorization) during the application modernization life cycle. The DevSecOps adoption framework is an overarching framework to help organizations release secure software faster.

**Tech Mahindra:** For Tech Mahindra, application modernization is based on multi-tier architectures like containers, Kubernetes, and serverless architectures, where we offer application security services for container and image scanning tools like Qualys and Rapid7 InsightVM. Security is a continuous part of the modernization journey.

**Accenture:** Accenture offers an internally developed tool, the Intelligent Application Security Platform (IASP), created to integrate security into the overall software development life cycle. This platform enables security at speed and scale by performing bulk application onboarding, automated scanning, automated false positive triage, and automated remediation capabilities to address security vulnerabilities and drive risk reduction.

# 4

## Top 10 results: Application modernization services, 2022

# Top 10 application modernization services—summary of providers assessed in this report

<b>Providers</b> (alphabetical order)	<b>HFS point of view</b>
<b>Accenture</b>	Focusing on industry-specific, global delivery solutions aligning business operations with application modernization
<b>Capgemini</b>	Global engineering firm with extensive capabilities to deliver business outcomes through technology-driven innovation
<b>Cognizant</b>	Strategically investing to deliver full-stack application modernization solutions with strong engineering principles
<b>EY</b>	Business and tax consultancy bringing together applications services to deliver tangible improvements in user experience
<b>HCL</b>	Driving automation and low-code as crucial components of success application modernization
<b>IBM</b>	Technology advisory leader bringing a mix of strong products and services to aid in cloudification of tech-driven businesses
<b>Infosys</b>	Execution powerhouse stepping up efforts to bring modern skills and tools to overcome legacy system gravity
<b>LTI</b>	Provider focused on delivering applications and data modernization with unique platforms, tools, and resources
<b>TCS</b>	Driving application transformation efforts for the CIO, business stakeholders, and users
<b>Tech Mahindra</b>	Legacy mainframe application modernization specialist with strong project ROI
<b>Wipro</b>	Making big strides to rise up with modernization and accelerate access to top coding talent

# Podium performances—Application modernization services, 2022

## HFS Winners Circle

Top five providers overall across execution, innovation, OneOffice alignment, and voice of the customer criteria

























































































































#1 	#2 	#3 	#4 	#5 
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Execution powerhouses Top three providers on execution criteria			Innovation champions Top three providers on innovation criteria			OneOffice alignment Top three providers aligned to OneOffice			Outstanding voice of the customer Top three providers on voice of the customer criteria		
#1 	#2 	#3 	#1 	#2 	#3 	#1 	#2 	#3 	#1 	#2 	#3 

## Other notable performances

- **HCL** has the chops for bringing innovation and change agents needed to deliver application modernization, including key tools in assessment, automation, and management.
- **Capgemini** continues to be a trusted partner to the software development and test and QC teams, providing direction, clear focus, and talent for cloud-native projects.
- **TCS** continues to build customer loyalty and satisfaction as customers with diverse global operations continue to see it as an integral part of their extended teams.
- **Wipro** continues to evolve as a fierce competitor focused on leveraging partnerships to help transform legacy systems into cloud-first services.
- **Tech Mahindra** continues to focus on what it does well. It helps customers rehost and refactor their large systems of record into a cloud-hosted solution.
- **LTI** exhibits a strong vision for how it will bring data and application modernization to market, but it needs to work on developing recognition outside of technology teams.

# HFS Top 10 rankings—Application modernization services, 2022

Rank	Overall HFS Top 10 position	Execution					Innovation				OneOffice™ alignment	Voice of the customer
		Breadth and depth of capabilities	Scale and growth	Talent and delivery	Partner ecosystem	Overall execution	Strategy and vision	Technology innovation	Change agents	Overall innovation		
#1												
#2												
#3												
#4												
#5												
#6												
#7												
#8												
#9												
#10												

Notes:

- The report “HFS Top 10: Application Modernization Services” includes firms having application modernization revenues of more than \$1 billion, global delivery, and diverse clients. They include (in alphabetical order): Accenture, Capgemini, Cognizant, EY, HCL, IBM, Infosys, LTI, TCS, Tech Mahindra, and Wipro.
- In the companion report, formidable challengers have application modernization revenues of less than \$500 million and may not offer global service delivery. However, these firms offer specialized value to enterprises and typically have adoption outcome or output-based pricing models as common practice. Companies assessed in this report include (in alphabetical order): Hexaware, Hitachi Vantara, Mindtree, Mphasis, UST, Virtusa, and Zensar. These providers are the focus of this report.

# 5

## Cognizant profile: Application modernization services, 2022

# How to read our summary statements regarding each provider's application modernization services capabilities

VENDOR

Dimension	Rank	Strengths	Development opportunities		
HFS Top 10 position	#	<ul style="list-style-type: none"> <li>• <b>Approach to application modernization services.</b> How formalized are the company's capabilities in terms of leadership, organization, offerings, GTM approach, and identifiable investments in strategy?</li> <li>• <b>Key differentiators.</b></li> <li>• <b>Ability to help clients drive value with application modernization.</b> Proof points and client examples showcasing how the provider helps clients modernize applications modernization, including notable business benefit examples.</li> <li>• <b>Technology innovation.</b> Notable partnering approach, IP, R&amp;D, etc.</li> <li>• <b>Customer kudos.</b> From references, HFS surveys, and enterprise interactions.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>What we'd like to see more of.</b></li> <li>• <b>What we'd like to see less of.</b></li> <li>• <b>Customer critiques.</b> From references, HFS surveys, and enterprise interactions.</li> </ul>		
Ability to execute	#				
Breadth and depth of capabilities	#				
Scale and growth	#				
Talent and delivery	#				
Partner ecosystem	#				
Innovation capability	#				
Sections and headings are standardized for all application modernization profiles					
Strategy and vision	#	<b>Relevant M&amp;A and partnerships</b> <b>Acquisitions</b> <ul style="list-style-type: none"> <li>• Must be directly relevant to <b>application modernization</b></li> <li>• Nothing before 2017</li> </ul> <b>Key partnerships</b> <ul style="list-style-type: none"> <li>• Must be directly relevant to <b>application modernization</b></li> </ul>	<b>Key clients</b> <b>Number of application modernization clients:</b> xxx  <b>Key clients include</b> <ul style="list-style-type: none"> <li>• Clients where large applications modernization efforts have taken place in the past 24 months</li> </ul>	<b>Operations</b> <b>Dedicated headcount for application modernization services:</b>  <b>R&amp;D centers and innovation labs</b> <ul style="list-style-type: none"> <li>• xxx</li> </ul> <b>Geographic delivery spread</b> <ul style="list-style-type: none"> <li>• North America: n%</li> <li>• Europe</li> <li>• Asia Pacific</li> <li>• Middle East/Africa</li> <li>• Latin America</li> </ul>	<b>Flagship internal IP and technologies</b> <ul style="list-style-type: none"> <li>• <b>Application modernization focused</b></li> </ul>
Technology innovation	#				
Change agents	#				
OneOffice alignment	#				
Voice of the customer	#				



# Strategically investing to deliver full-stack application modernization solutions with strong engineering principles



Dimension	Rank	Strengths	Development opportunities							
HFS Top 10 position	1	<ul style="list-style-type: none"> <li><b>Approach to application modernization services.</b> Cognizant's approach is based on a business value framework with data as the foundation for a customer's applications strategy. Cognizant aligns their efforts and the client's desired outcomes around how applications modernization leads to operational effectiveness, improving agility to deliver revenue growth, and improving experiences using the software in context of workloads and processes.</li> <li><b>Key differentiators.</b> Cognizant provided clear business outcome experience metrics for many engagements; this showed a willingness to learn the customer's business, culture, and people aspects and how technology benefited these rather than just leading with an engineering slanted mindset.</li> <li><b>Ability to help clients drive value with application modernization.</b> Cognizant's full-stack development teams worked closely with customers to boost revenue-yielding projects (with gain share-based pricing), improved the ROI of a legacy migration (saving a customer \$2 million in costs), and used accelerators and Agile methodologies to reduce release times from 12 months to 4 months resulting in a net gain in business satisfaction.</li> <li><b>Technology innovation.</b> Cognizant has a stable of cloud and application providers aligned to support the rehosting, re-platforming, and re-architecting of legacy software. In addition, tuck-in acquisitions have boosted its toolset and closed notable gaps needed to assess, automate, and further analyze application modernization efforts in-flight.</li> <li><b>Customer kudos.</b> Cognizant took a customer with a rough roadmap and helped it identify and develop a complete roadmap for modernizing its application portfolio. In addition, Cognizant's mix of on-shore and off-shore resources helped modernize the business and overcome the legacy siloed approach the company had taken.</li> </ul>	<ul style="list-style-type: none"> <li><b>What we'd like to see more of.</b> More inclusion of low-code and automation as part of the table stakes Cognizant brings to the table.</li> <li><b>What we'd like to see less of.</b> Smaller share of customers in North America, more global customers are needed show Cognizant is both diversifying and able to globally deliver services.</li> <li><b>Customer critiques.</b> Post project support was a bit of a challenge as L1, L2, L3 support meant the customer had to jump through L1 and L2 before they could resolve issues in a timely manner. Cognizant talent experienced turnover which slowed down the project. Would like more success-based pricing offerings.</li> </ul>							
Ability to execute	2									
Breadth and depth of capabilities	1									
Scale and growth	2									
Talent and delivery	2									
Partner ecosystem	4									
Innovation capability	3									
Strategy and vision	2	<table border="1"> <thead> <tr> <th>Relevant M&amp;A and partnerships</th> <th>Key clients</th> <th>Operations</th> <th>Flagship internal IP and technologies</th> </tr> </thead> <tbody> <tr> <td> <b>Acquisitions</b> <ul style="list-style-type: none"> <li>Linium, Magenic, Servian, Inawisdom, Bright Wolf, 10th Magnitude, Tin Roof, New Signature, Collaborative Solutions, El-Technologies, Lev, Code Zero, Contino, Devbridge</li> </ul> <b>Key partnerships</b> <ul style="list-style-type: none"> <li>Amazon AWS, Pivotal, Microsoft, Google Cloud Platform, IBM Cloud, Red Hat, Cloudera, VMware Tanzu, SAP, Micro Focus, ServiceNow, Salesforce</li> </ul> </td> <td> <b>Key clients include</b> <ul style="list-style-type: none"> <li>Swiss multinational investment bank and financial services company</li> <li>Indian financial services company</li> <li>UK-based sport association and governing body</li> <li>American multinational telecommunications conglomerate</li> <li>Global manufacturing leader</li> <li>Large North American retail chain</li> <li>North America-based global insurer</li> <li>UK-based large water services</li> <li>US-based insurance company</li> <li>US-based insurance and annuity company</li> <li>UK-based home improvement retailer</li> <li>Print and digital document products and services giant</li> <li>Largest Swiss insurance company</li> </ul> </td> <td> <b>Dedicated headcount for application modernization services:</b> 60,000+                        <b>R&amp;D centers and innovation labs</b> <ul style="list-style-type: none"> <li>Cognizant Centre for the Future of Work</li> <li>Six collaborative innovation centers in Pune, Chennai, New York, Amsterdam, London, and Melbourne</li> <li>35+ dedicated engineering studios</li> <li>12+ industry labs</li> </ul>   <b>Geographic delivery spread</b> <ul style="list-style-type: none"> <li>North America: 70%–75%</li> <li>Europe: 10%–20%</li> <li>Asia Pacific: 1%–5%</li> <li>Middle East/Africa: 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Technology innovation	6									
Change agents	2									
OneOffice alignment	1									
Voice of the customer	2									

# 6

## About the authors

# HFS Research authors



**Joel Martin**

Research Leader

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Joel Martin is Research Leader, [Cloud](#) and SaaS Strategies at HFS. Joel's role is to aid organizations in making crucial decisions on designing, adopting, managing, and governing their growing portfolio of cloud solutions. Executives and business leaders will benefit from concise research on harnessing cloud-based solutions to support the workplace's rapid, fundamental changes.

Success in the 2020s will depend on an organization's leadership and understanding about how cloud strategies will deliver results that amplify success, provide reliable services, and reshape interactions with customers, employees, and global markets. Based on research, insights from across HFS, and professional experiences, Joel will guide conversations about successfully leveraging the workplace native competencies of intelligent automation and the OneOffice™ to optimize investments in people, partnerships, and technology.

Before HFS, Joel held senior roles in global enterprise software, intellectual property, semiconductor, and research firms. Joel has led product programs, built solutions, and led company strategies to adopt solutions based on the cloud. After graduating from the University of Houston, Joel's career has taken him to New York, San Francisco, Prague, Sydney, and Toronto. He currently resides in Ottawa, Canada with his wife and daughters, where he has taken up electric guitar to annoy his neighbours, family, and friends.



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Martin Gabriel is an Associate Practice Leader at HFS, covering IT services, tracking global outsourcing deals in IT/BPO services, and participating in various research writings.

Martin has over 12 years of research, analytics, and market intelligence experience. In his TCS role, he worked on point-of-sale and consumer panel data and on analytical projects, providing business insights to clients. He was responsible for analyzing retailer and consumer behavior for various FMCG/CPG products to address diverse business issues and provide actionable recommendations for the future growth for clients. He performed extensive category reviews, brand management, and trend analysis based on point of sale and homes scan data, along with information from secondary sources. At Xchanging, he was part of the market intelligence team that supports Xchanging's vertical heads, strategy team, and sales and marketing team.

# About HFS

Insight. Inspiration. Impact.

HFS is a unique analyst organization that combines deep visionary expertise with rapid demand side analysis of the Global 2000. Its outlook for the future is admired across the global technology and business operations industries. Its analysts are respected for their no-nonsense insights based on demand side data and engagements with industry practitioners.

HFS Research introduced the world to terms such as "RPA" (Robotic Process Automation) in 2012 and more recently, the HFS OneOffice™. The HFS mission is to provide visionary insight into the major innovations impacting business operations such as Automation, Artificial Intelligence, Blockchain, Internet of Things, Digital Business Models and Smart Analytics.

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