

Market Analysis: Application Modernization Services Formidable Challengers

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Excerpt for Hexaware



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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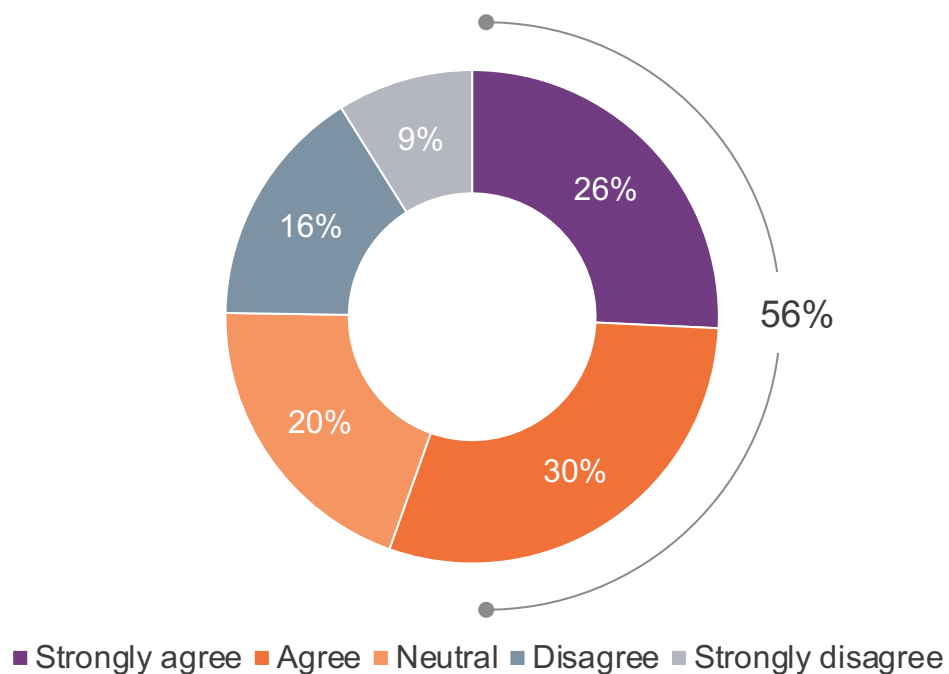
Executive summary

Executive overview: Application modernization services

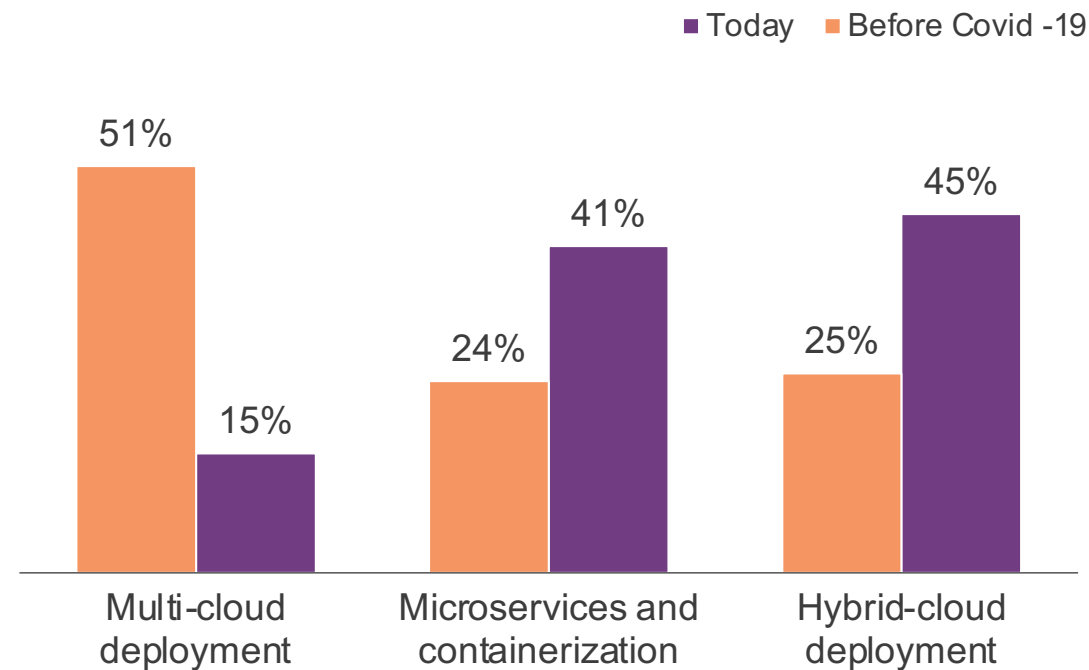
- 1 Application modernization services is experiencing growth of more than 40% as companies modernize legacy systems and build cloud-first solutions.
- 2 Application modernization services is a journey that will result in many firms straddling legacy and cloud-first applications deployment. Agility and 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

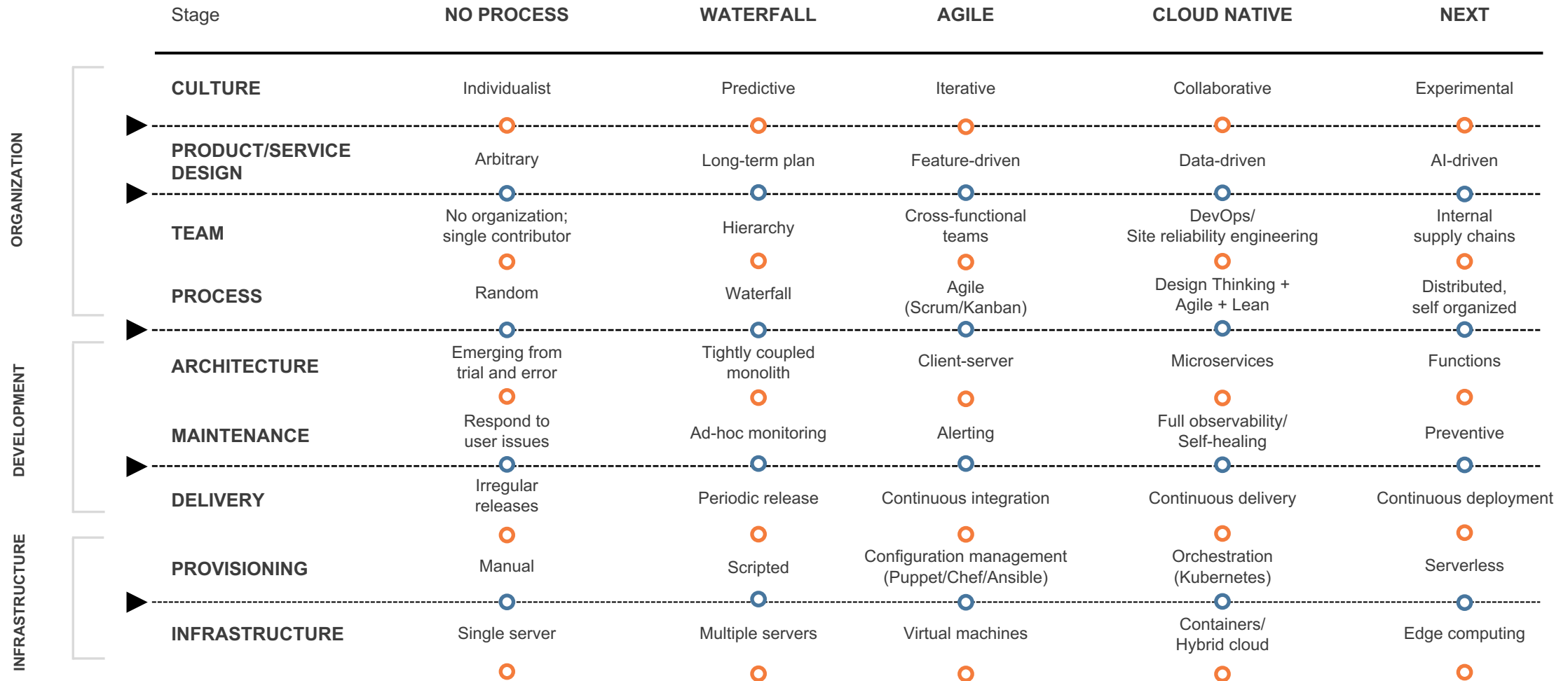


Q: Please select the most important cloud investment.



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

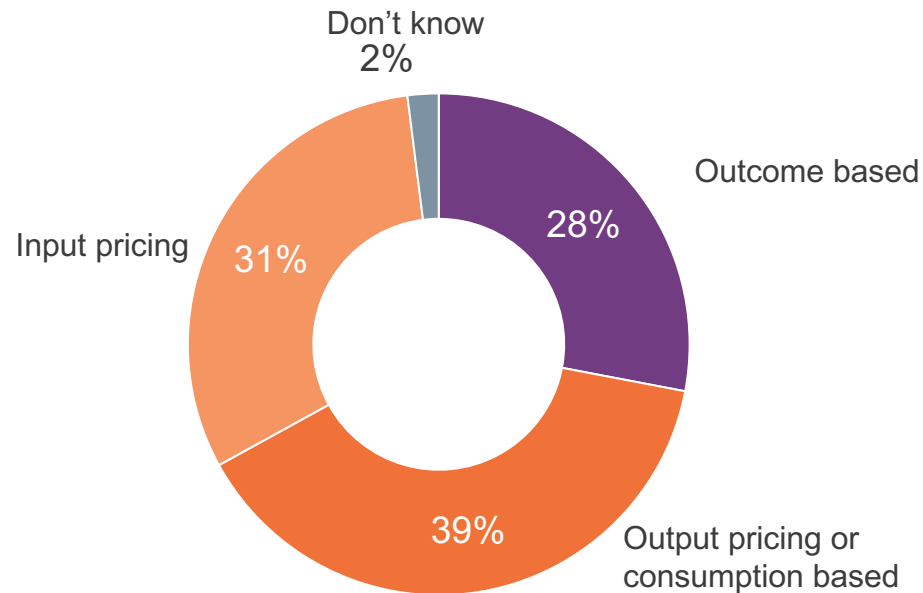
Becoming cloud-native brings a need for applications modernization towards solutions like microservices and Kubernetes



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.

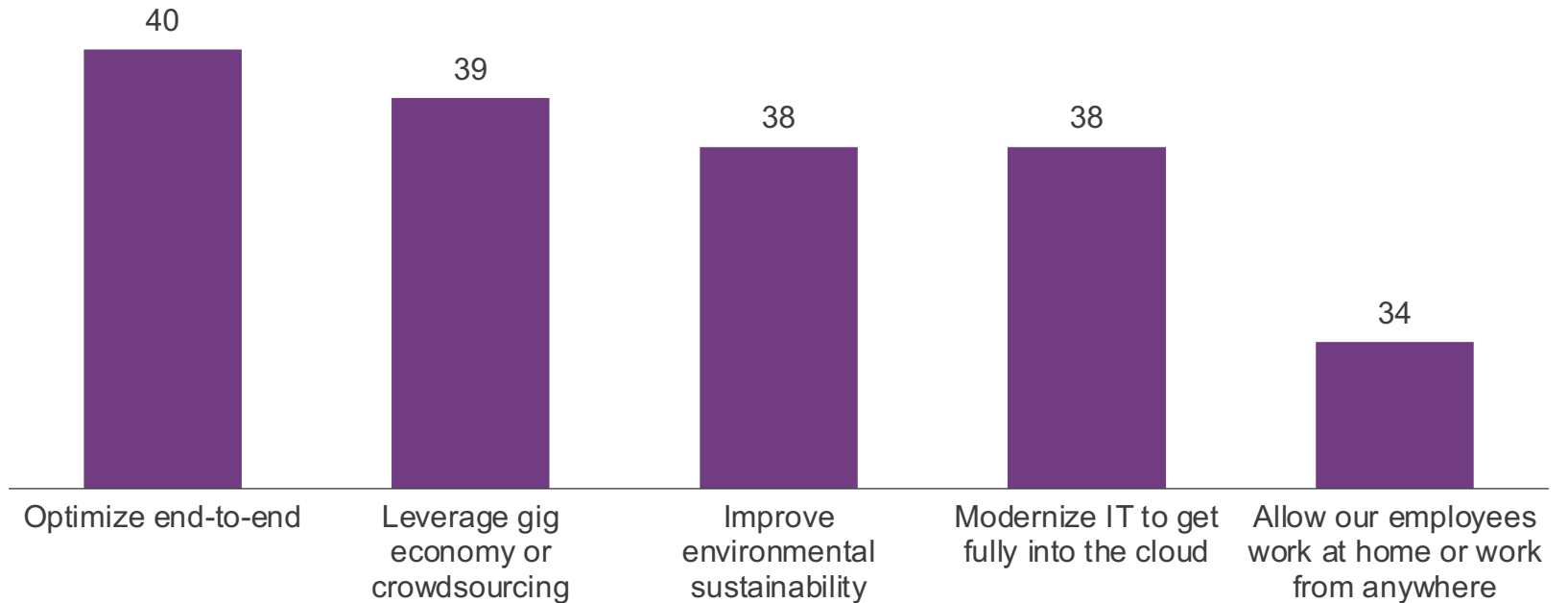
Keep offering time and materials, fixed fee, and resource utilization pricing models at your own risk! As the business funds more of these projects, expect to be putting more skin in the game. Prepare your account teams with models and methodologies that can support this expectation.

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

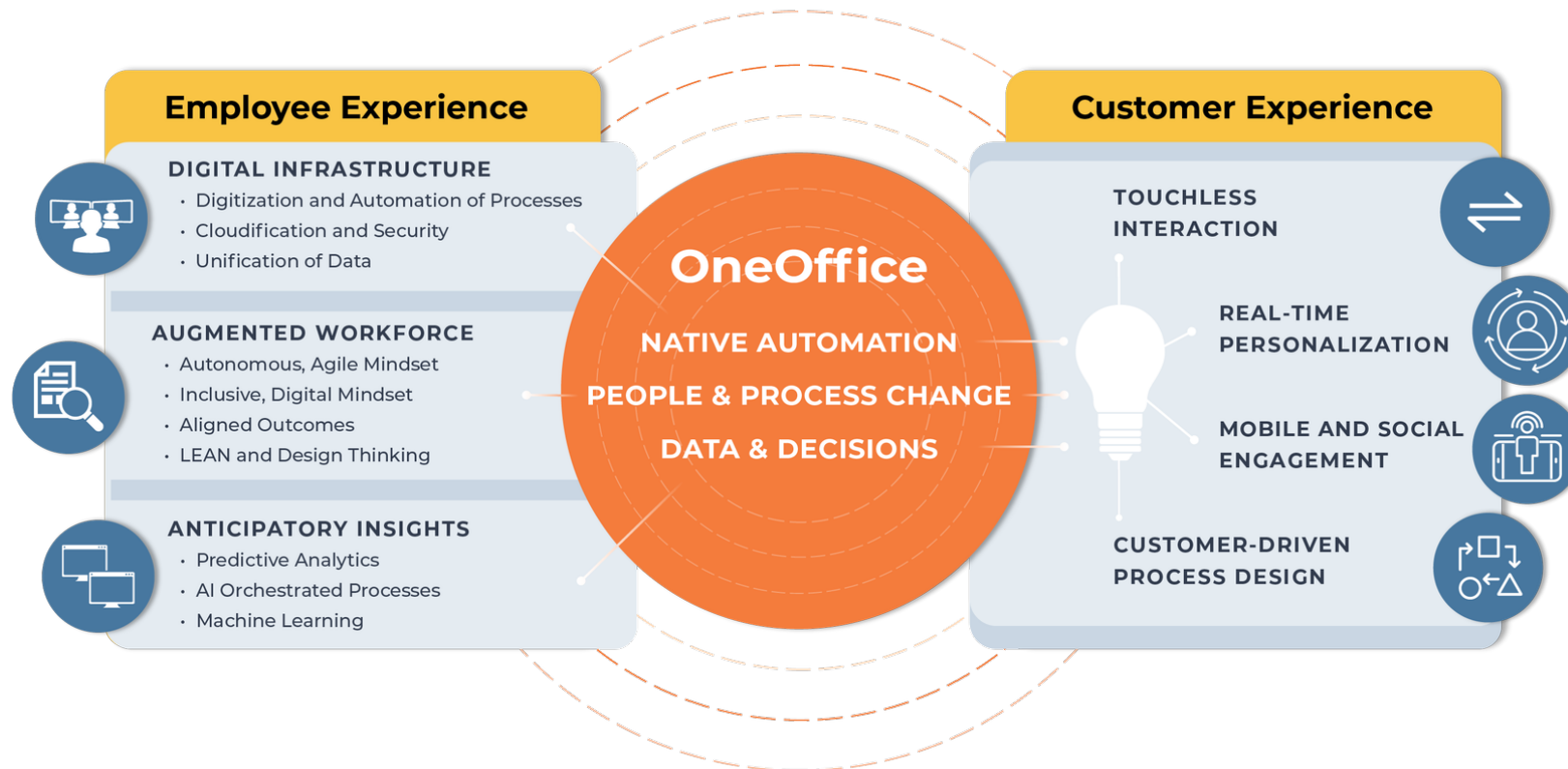


- Technology drives operational changes in the “new ways of working” that deliver experiences internally and externally
- This OneOffice mindset drives culture change at a scale and velocity most organizations are not equipped for

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

The HFS OneOffice™—digital transformation in action

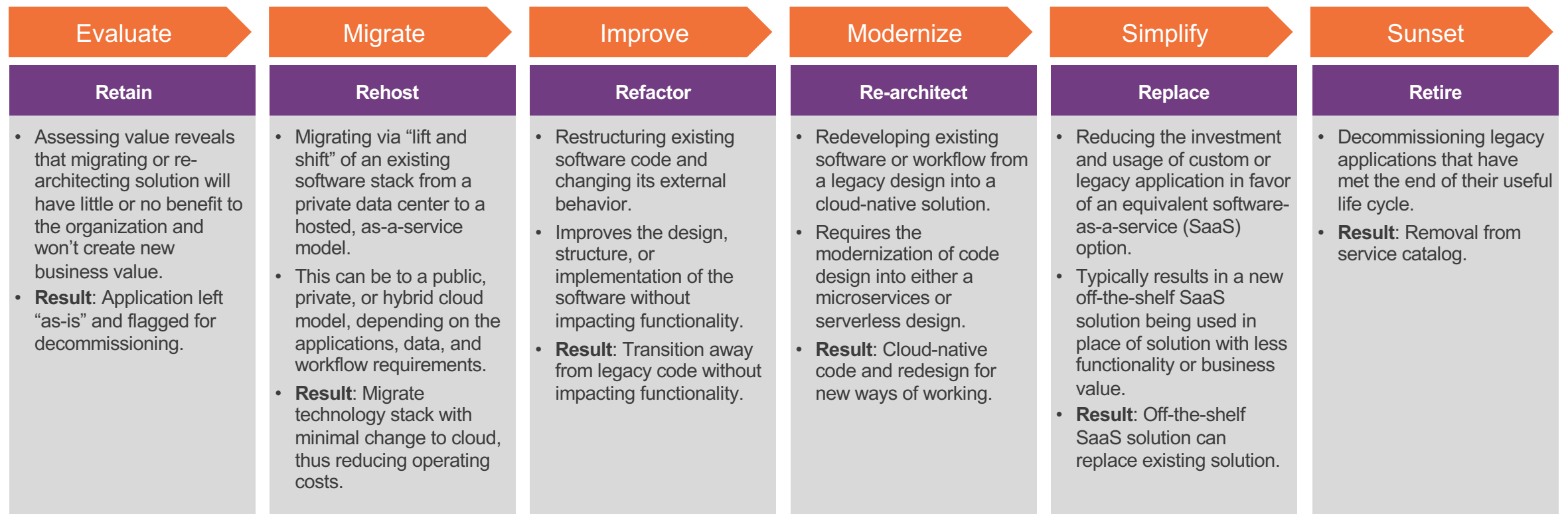
The HFS OneOffice™ is our vision for actionable digital transformation. At its heart is the core concept that emerging technologies combined with people, process, and data innovation can break down the silos that limit our success, dissolving barriers between the front and back office to create the only 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.



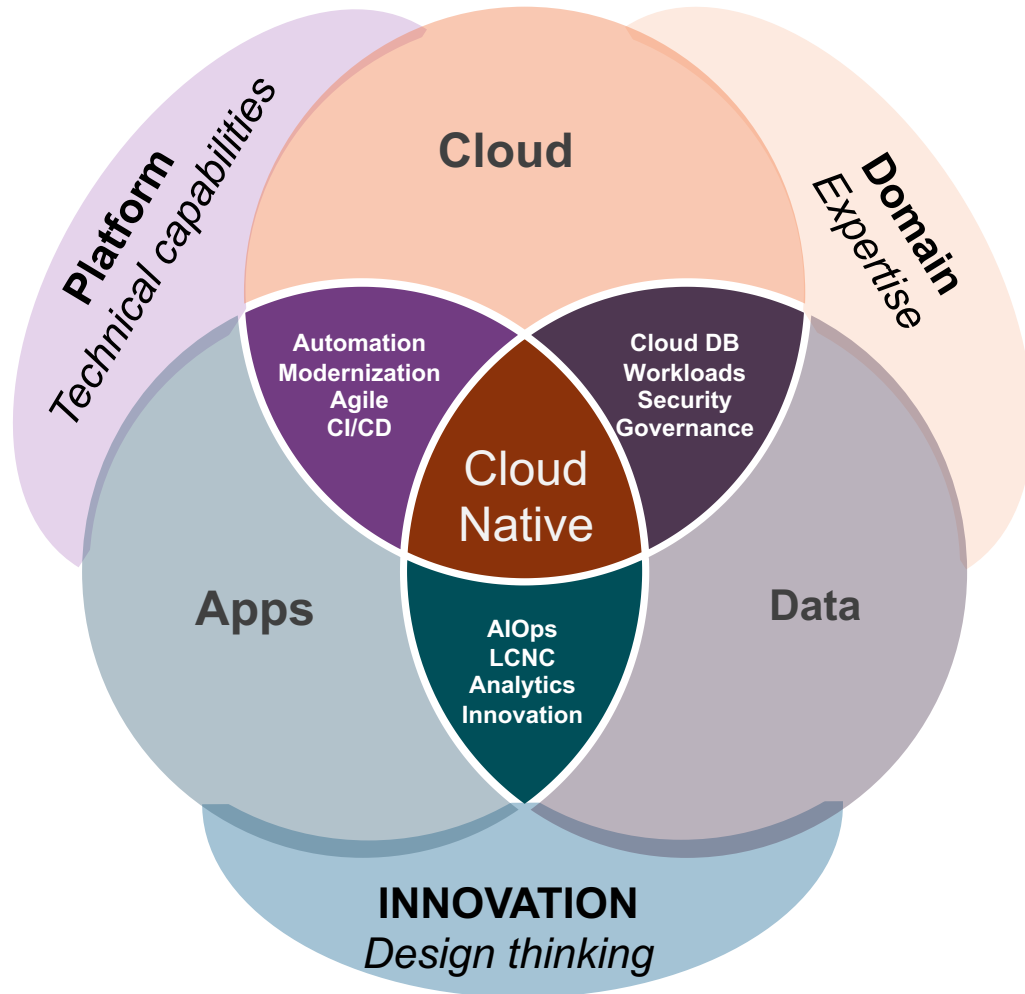
Source: HFS Research, 2022

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

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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

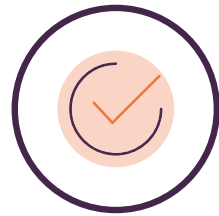
This report relied on myriad data sources to support our methodology and help HFS obtain a well-rounded perspective on the application modernization services capabilities of the providers covered in our study. Sources are as follows:



RFIs and briefings

Each participating vendor completed a detailed RFI.

HFS conducted briefings with executives from each vendor.



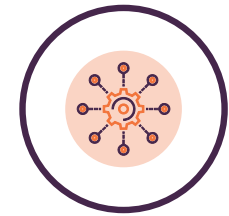
Reference checks

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.**



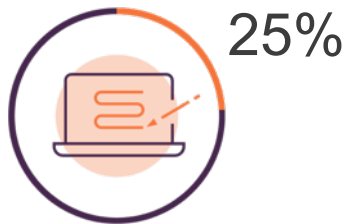
Other data sources

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

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

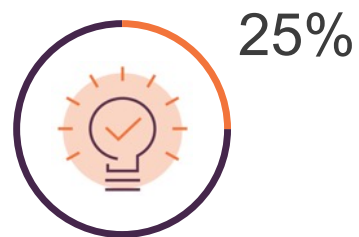
Scoring methodology

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:



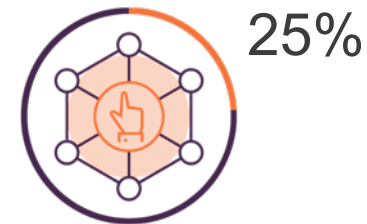
Execution

- **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.



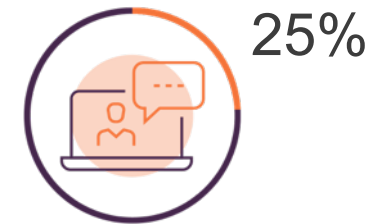
Innovation

- **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

Scoring: Application modernization services providers

What are formidable challengers?

In addition to firms generating more than \$1 billion in annualized revenues from applications modernization services, there is a growing number of firms nipping at the market leaders' heels. These firms don't usually possess a stable of legacy clients or a portfolio of business process outsourcing contracts. Rather, these firms generate more than 60% of their revenues from digital services and focus their resources on designing, developing, and deploying cloud-native solutions.

While these firms can support the early stages of the applications modernization value chain (re-hosting, retiring, or re-factoring), they are eager to bring skills, capabilities, partnerships, and toolsets to help technology teams in their efforts to re-architect and replace legacy applications with modern, cloud-first solutions like containers, serverless, and edge solutions.

These firms are often leading the way with output-based and outcome-based pricing, offering to put skin in the game when helping their technology and business operations customers identify and allocate the budget needed to execute discrete projects tied to expected outcomes, both above and below the line.








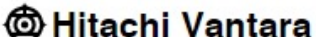



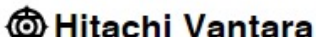

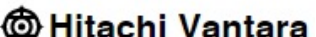

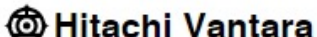



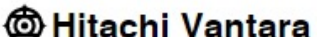















These firms also act like tigers, bringing squad or pod teams that have embraced agility in solving problems and trading out skills and talent as a project evolves. This requires nimble project management, a keen sense for co-creating with their customers, and a trusted set of tools and methodologies embracing automation and artificial intelligence through the DevSecOps lifecycle.

Consider a formidable challenger that can bring domain knowledge and talent and is willing to proactively address the pricing and costs associated with applications modernization, especially those with budgetary pressures from business stakeholders.

Application modernization services—formidable challengers

Providers (alphabetical order)	HFS point of view
Hexaware	Global provider that brings best-in-class tools and domain expertise to deliver continuous innovation
Hitachi Vantara	Provider with a vision on how cloud-first applications benefit an organization's operations
Mindtree	Partner with the capabilities to consolidate applications and run a cloud-native business
Mphasis	Innovative provider with deep domain expertise and solid talent and technology resources
UST	Aggressive service provider focused on developing new applications to meet changing business needs
Virtusa	Provider of digital engineering capabilities focused on delivering business outcomes at speed
Zensar	A full-stack application modernization solutions provider with solid engineering capabilities

Applications modernization services: Formidable challengers, 2022

Rank	Formidable challenger overall ranking	Execution	Innovation	OneOffice alignment	Voice of the customer
#1	 HEXAWARE	 HEXAWARE	 Mphasis The Next Applied	 virtusa	 Mindtree <i>Welcome to possible</i>
#2	 Mphasis The Next Applied	 Mphasis The Next Applied	 Hitachi Vantara	 HEXAWARE	 HEXAWARE
#3	 virtusa	 Hitachi Vantara	 HEXAWARE	 Hitachi Vantara	 zensar
#4	 Hitachi Vantara	 virtusa	 virtusa	 Mphasis The Next Applied	 Hitachi Vantara
#5	 zensar	 Mindtree <i>Welcome to possible</i>	 zensar	 zensar	 Mphasis The Next Applied
#6	 Mindtree <i>Welcome to possible</i>	 zensar	 Mindtree <i>Welcome to possible</i>	 U · S · T	 virtusa
#7	 U · S · T	 U · S · T	 U · S · T	 Mindtree <i>Welcome to possible</i>	 U · S · T

Notes:

The formidable challengers have applications modernization revenues of less than \$1 billion 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 alphabetic order): Hexaware, Hitachi Vantara, Mindtree, Mphasis, UST, Virtusa, and Zensar. These providers are the focus of this report.

4

Hexaware Profile: Application modernization services providers

Global provider that brings best-in-class tools and domain expertise to deliver continuous innovation



Dimension	Rank	Strengths	Development opportunities							
HFS formidable challenger position	1	<ul style="list-style-type: none"> • Approach to application modernization services. Hexaware's next-gen application modernization practice is powered by a modern delivery framework and IP including the cloud migration suite Amaze. The Amaze offering allows for discovery, assessment, migration, and monitoring application modernization projects throughout the DevOps lifecycle. Additionally, Hexaware offers a transparent model for app modernization and playbooks of industry best practices, design thinking elements, tools, and assets to deliver modern DevSecOps practices. • Key differentiators. Hexaware leads with a commercial model to achieve business outcomes through both outcome-based and output-based pricing. The vendor brings substantial domain expertise, automation and delivery tools, and migration assets. In addition, it highlights its focus on improving employee experience by investing in understanding the business and technology success metrics. • Ability to help clients drive value with applications modernization. Hexaware stays active throughout the applications modernization value chain. It does this by leveraging automation for 30%-60% faster migration and modernization. In addition, it offers end-user training to enhance the adoption rate in the enable phase. In the sustain phase, Hexaware offers 24x7 expert support. It complements this with a flexible commercial model suiting all clients. • Technology innovation. Hexaware has a 5% re-investment mandate to develop new IP and accelerators as part of its innovation commitment. Additionally, Hexaware constantly co-innovates with clients to deliver the business outcome and experience they need. • Customer kudos. Clients appreciated Hexaware's IP, such as the Amaze suite, and the flexibility, resources, and domain knowledge it brings to engagements. Also, Hexaware's preference to understand the client's business objectives and deliver solutions with measurable business value was pointed out during multiple discussions. 	<ul style="list-style-type: none"> • What we'd like to see more of. Bring new functionality to Amaze and HexaView, allowing business sponsors to see how their technology investments are delivering the desired business outcomes. • What we'd like to see less of. More proof that Hexaware has a plan to grow globally and will be able to provision talent and tools to support customers outside of North America. • Customer critiques. Customers are generally satisfied with the application modernization results, but its project management has been cited as missing aspects of projects that dealt with non-functional requirements. 							
Ability to execute	1									
Innovation capability	3									
OneOffice alignment	2	<table border="1"> <thead> <tr> <th>Relevant M&A and partnerships</th> <th>Key clients</th> <th>Operations</th> <th>Flagship internal IP and technologies</th> </tr> </thead> <tbody> <tr> <td> Acquisitions <ul style="list-style-type: none"> • 2019: Mobiquity Key partnerships <ul style="list-style-type: none"> • Azure, AWS, Guidewire, Backbase, Salesforce, Adobe, Pega and ServiceNow, Appian, Mulesoft </td> <td> Number of application modernization clients: ~150 Key clients include <ul style="list-style-type: none"> • Wawa, Nestlé Purina, Amica, Vomar, Butterball, BCD Travel, Kum & Go, Bank of the Philippine Islands, Ila Bank, Intercontinental Hotels Group, Princess Maxima Center, Lifetime Fitness, IQVIA </td> <td> Dedicated headcount for application modernization services: 2,746 R&D centers and innovation labs: 9 Geographic delivery spread: <ul style="list-style-type: none"> • North America: 70% • Europe: 17% • Asia Pacific: 7% • Middle East/Africa: 5% • Latin America: 1% </td> <td> <ul style="list-style-type: none"> • Amaze: A cloud migration platform designed to discover, analyze, and transform applications, databases, data warehouses, and analytical components to cloud by automating the most common tasks to drive efficiency and time. • HexaView: A real-time executive dashboard for software development performance. • TRIADIC: This platform guides organizations in their journey toward SAP transformations per customer requirements and landscape complexity. • ATOP (Autonomous Test Orchestration Platform): A unified platform with a plug-and-play architecture that can become a one-stop solution for all testing (functional and non-functional) needs and for implementing autonomous testing use cases. </td> </tr> </tbody> </table>	Relevant M&A and partnerships	Key clients	Operations	Flagship internal IP and technologies	Acquisitions <ul style="list-style-type: none"> • 2019: Mobiquity Key partnerships <ul style="list-style-type: none"> • Azure, AWS, Guidewire, Backbase, Salesforce, Adobe, Pega and ServiceNow, Appian, Mulesoft 	Number of application modernization clients: ~150 Key clients include <ul style="list-style-type: none"> • Wawa, Nestlé Purina, Amica, Vomar, Butterball, BCD Travel, Kum & Go, Bank of the Philippine Islands, Ila Bank, Intercontinental Hotels Group, Princess Maxima Center, Lifetime Fitness, IQVIA 	Dedicated headcount for application modernization services: 2,746 R&D centers and innovation labs: 9 Geographic delivery spread: <ul style="list-style-type: none"> • North America: 70% • Europe: 17% • Asia Pacific: 7% • Middle East/Africa: 5% • Latin America: 1% 	<ul style="list-style-type: none"> • Amaze: A cloud migration platform designed to discover, analyze, and transform applications, databases, data warehouses, and analytical components to cloud by automating the most common tasks to drive efficiency and time. • HexaView: A real-time executive dashboard for software development performance. • TRIADIC: This platform guides organizations in their journey toward SAP transformations per customer requirements and landscape complexity. • ATOP (Autonomous Test Orchestration Platform): A unified platform with a plug-and-play architecture that can become a one-stop solution for all testing (functional and non-functional) needs and for implementing autonomous testing use cases.
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Voice of the customer	2									

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About the authors

HFS Research authors



Joel Martin

Research Leader

joel.martin@hfsresearch.com

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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