



IBM Services

Application Management and Development - Takeaways from IBM Services

FEATURING RESEARCH FROM FORRESTER

The Forrester Wave™: Applications
Management And Digital Operations
Services, Q4 2017

Application Management and Development - Takeaways from IBM Services

Today's enterprises are continuously challenged to keep pace in a business world increasingly populated by nimble startups and born-digital companies, especially those that achieve formidable scale very fast. These incumbent enterprises once relied on their IT cores as a source of competitive advantage. Now, those same IT cores are increasingly making it difficult for them to adapt to a "new normal" in terms of speed, efficiency and resilience:

Speed: Traditional release cycles took months. With the help of agile development methods, and tightly integrated team structures, today's leading businesses are able to deploy with hyper-frequency, allowing them to introduce new features and capabilities on a continuous basis.

Efficiency: Through greater business integration, automation and the adoption of agile principles, organizations can become more efficient. Prioritizing business requirements and driving out unnecessary scope and feature bloat are key to the new-normal efficiency.

Resilience: With multiple levels of proactive self-healing mechanisms, today's organizations are making zero-downtime systems a reality. To adapt, organizations must replace or modernize their applications. This means an ambidextrous approach to application modernization is needed where the organization pursues multiple different performance zones simultaneously:

- **Optimize the core:** By continuing to use traditional ADM techniques, but refining them with modern tools and approaches like AI, Machine Learning and Automation, organizations can optimize their existing IT cores to help cut costs and maximize efficiency.
- **Unlock legacy:** Using a hybrid model, organizations can unlock new value by deploying modern features and capabilities around their existing applications and enterprise data. This puts them in a position to innovate and keep up with fast-moving competitors while leveraging their core.
- **Unleash digital:** By capitalizing on cloud-native, born-digital technologies, organizations can help deliver added speed and growth, create improved customer experiences and develop speed-optimized innovation capabilities by purposefully channelizing new investments

The following Forrester Wave™ report compares different applications management and digital operations services providers, including IBM, along with what they offer enterprises in "the new normal."

IN THIS DOCUMENT

- 1 Application Management and Development - Takeaways from IBM Services
- 3 Research From Forrester: The Forrester Wave™: Applications Management And Digital Operations Services, Q4 2017
- 21 About IBM

The Forrester Wave™: Applications Management And Digital Operations Services, Q4 2017

The 12 Providers That Matter Most And How They Stack Up

by Bill Martorelli and Eveline Oehrlich

December 21, 2017

Why Read This Report

In our 26-criteria evaluation of applications management and digital operations services (AMDOS) providers, we identified the 12 most significant — Accenture, Atos, Cognizant, Deloitte, DXC Technology, HCL Technologies, IBM, Infosys, NTT DATA, Tata Consultancy Services (TCS), Tech Mahindra, and Wipro — and researched, analyzed, and scored them. This report shows how each provider measures up and helps infrastructure and operations (I&O) professionals make the right choice.

Key Takeaways

Accenture, IBM, Cognizant, Tata Consultancy Services, Infosys, And Wipro Lead The Pack

Forrester's research uncovered a market in which Accenture, IBM, Cognizant, Tata Consultancy Services, Infosys, and Wipro lead the pack. NTT DATA, HCL Technologies, Deloitte, DXC Technology, and Atos offer competitive options. Tech Mahindra lags behind but is still a Contender.

I&O Pros Need Automation, Transformation, And Innovation, Not Just Cost Savings

AMDOS services help I&O professionals in “brownfield” settings achieve enterprise transformation. I&O pros rely on the leading AMDOS providers not just to cut costs but to act as strategic partners, advising them on applications portfolio decisions.

Automation Plus Staff Transformation Stand Out As Key Differentiators

As legacy technologies continue to fade, two things differentiate AMDOS leaders: 1) how well they harness automation in the service of digital transformation and 2) their ability to upskill their staffs to provide more value as they automate.

The Forrester Wave™: Applications Management And Digital Operations Services, Q4 2017

The 12 Providers That Matter Most And How They Stack Up

by [Bill Martorelli](#) and [Eveline Oehrlich](#)

with [Laura Koetzle](#) and Aaron Kinch

December 21, 2017

Table Of Contents

Your Choice Of AMDOS Supplier Will Influence Your Digital Destiny

Make AMDOS Spending A Fulcrum For Business Change

AMDOS Evaluation Overview

Evaluated Vendors And Inclusion Criteria

Vendor Profiles

Leaders

Strong Performers

Contenders

Supplemental Material

Related Research Documents

[Bring Your Applications Management Services Into Your Digital Future](#)

[The Forrester Wave™: North American Applications Outsourcing Services, Q1 2014](#)

[Reshape Your Application Support For Digital Operations](#)



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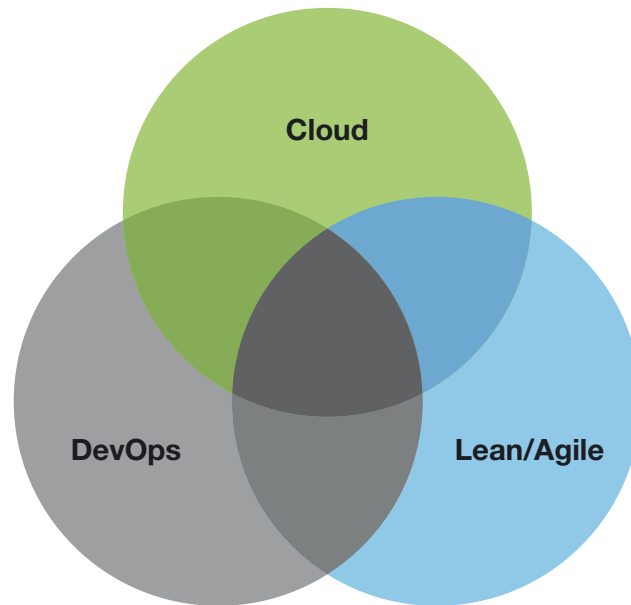
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Your Choice Of AMDOS Supplier Will Influence Your Digital Destiny

For firms pursuing customer obsession, the old “your mess for less” applications outsourcing model doesn’t work at all.¹ The nature of applications under management has shifted significantly in recent years. For example, I&O teams and their partners in app development have expanded their remit to include software-as-a-service (SaaS)-based applications; cloud-native applications development, using Agile methods; and customer experience (CX) and digital experience (DX) requirements. Ops and dev teams need far more from their suppliers than yesterday’s simple break/fix; they also need help incorporating Agile and development/operations (DevOps) practices and cloud migration expertise (see Figure 1). Given the evolution of demand, Forrester has coined the term “applications management and digital operations” (AMDOS) to replace the old terms of “applications outsourcing” and “applications management services.” Here’s why your choice of an AMDOS supplier matters:

- › **CIOs continue to spend significant dollars on AMDOS activities.** AMDOS also represents a sizable amount of a firm’s spend on “run the business” activities, or as Forrester defines it, MOOSE (spending to maintain and operate the organization, systems, and equipment). In 2015, Forrester estimated that applications outsourcing represented approximately 12% of CIOs’ MOOSE expenditures.² In our current study, average total contract value for client references from the 12 AMDOS suppliers was approximately \$60 million.³
- › **Despite technical and process debt, legacy apps still deliver business value.** Firms are seeking to minimize their reliance on legacy applications by every route possible, including retirement, transformation, and migration to the cloud.⁴ But they can’t simply walk away from existing investments in running the business, and application and digital transformation is much more than grafting a new front end onto existing processes. Instead, to permanently reduce the stock of technical and process debt, I&O and dev teams need to catalyze big changes, such as the move to a microservices-based architecture in the cloud.
- › **Key AMDOS activities seem unchanged, but their context is dramatically different.** The fundamental process of break/fix application support hasn’t changed, and sourcing and vendor management (SVM) pros still care about rate cards and offshore leverage. But the impact of cloud, DevOps, and Lean Thinking, plus firms’ need to digitally transform, means that AMDOS suppliers must offer substantial assistance in adapting to modern technologies and processes. Or, as one I&O executive we spoke with put it, “We want agility, which implies sharing more of everything with our suppliers.” By performing applications support efficiently, suppliers seek to earn the right to perform the subsequent transformation.⁵
- › **AMDOS still represents a viable and sizable industry.** The collected revenues associated with AMDOS services for just the suppliers participating in this analysis are approximately \$90 billion.⁶ While essentially flat in aggregate spending, AMDOS services have not begun their widely anticipated swoon.⁷ Meanwhile, related digital services for UX and support for significant SaaS applications like Salesforce.com and Workday, cloud-native applications for which DevOps theory doesn’t supply an easy answer for ongoing support requirements, represent significant growth.⁸

FIGURE 1 Three Primary Influences On AMDOS Services



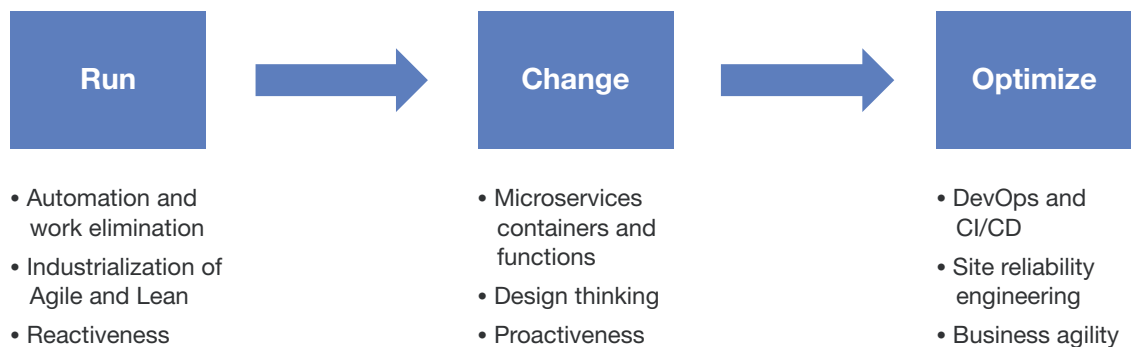
MAKE AMDOS SPENDING A FULCRUM FOR BUSINESS CHANGE

Many industry observers glibly assert that labor arbitrage has ceased to be a driving force in creating value in technology management operations.⁹ Yet firms still rely heavily on these services, roughly half of which they still buy on a time-and-materials (T&M) basis.¹⁰ Here's how I&O and app delivery pros can use their AMDOS spending to increase speed and chip away at technical and process debt:

- › **Automate, and invest the savings in further transformation.** The promise of automation is multifold, but one key opportunity for applications management lies in eliminating work through the elimination of level 1 (L1) and level 2 (L2) incidents, which in turn can help reduce overall costs by enabling self-funding through transformation models, including modernization and migration activities. But automation isn't a one-and-done event. Customers will have to allow time to "train" automation solutions in the customer environment.¹¹
- › **Push suppliers for consumption and outcome-based contracts wherever practical.** Just as most CIOs haven't yet achieved their target of fully outcome-based (as opposed to project-based) technology funding, AMDOS contracts aren't yet fully business-outcome-based.¹² Today's AMDOS contract structures incorporate elements of T&M, fixed bid, and on-demand, consumption-based dynamics such as applications-based pricing. I&O and app development pros must accelerate the move to on-demand and business-outcome-based elements.

- › **Be selective in targeting modernization and DevOps efforts.** Automation, cloud, and DevOps aren't equally valuable in all situations. For example, dev and ops teams can't easily transition from a heavily outsourced, traditional application support environment to a DevOps model because of existing contract commitments, hesitancy to hire internal staff, and difficulty in recruiting and hiring staff. Rather than embark on a broad attempt to increase release frequency across the board, I&O pros and developers should target the apps that need to change frequently in response to end customer demand. Similarly, I&O pros should focus automation efforts in areas with pernicious technical and process debt, such as use of ancient languages and nonrelational database structures.¹³
- › **Evolve personnel skills in in two directions.** Optimized delivery and consumption of AMDOS services requires new competencies from internal ops and dev teams and from supplier teams as well (see Figure 2). A supplier's widespread embrace of design thinking, the lingua franca of digital transformation, is only part of the story. AMDOS providers must also make sure their staffs are up to date with DevOps principles amid a rapidly evolving technological landscape featuring containers, functions, and more. And your dev and ops teams must keep pace to effectively team with suppliers and oversee supplier performance.

FIGURE 2 The Path To Optimized AMDOS Services



AMDOS Evaluation Overview

To assess the state of the AMDOS market and see how the vendors stack up against each other, Forrester evaluated the strengths and weaknesses of top AMDOS vendors. After examining past research, user need assessments, and vendor and expert interviews, we developed a comprehensive set of evaluation criteria. We evaluated vendors against 26 criteria, which we grouped into three high-level buckets:

- › **Current offering.** We evaluated the suppliers' current offerings in these categories: 1) core AMDOS capabilities; 2) commercial off-the-shelf capabilities, including enterprise resource planning (ERP) and SaaS support; 3) emerging capabilities, including digital capabilities and automation; and 4) services and customer experience.
- › **Strategy.** In this category, we assessed the providers' value propositions, industry momentum, visions for the future of AMDOS, execution road maps, innovation road maps, commercial pricing models, strategies for digital transformation, and strategies for personnel.
- › **Market presence.** This category includes criteria such as customer numbers, overall AMDOS revenues, and growth in revenues.

EVALUATED VENDORS AND INCLUSION CRITERIA

Forrester included 12 vendors in the assessment: Accenture, Atos, Cognizant, Deloitte, DXC Technology, HCL Technologies, IBM, Infosys, NTT DATA, Tata Consultancy Services, Tech Mahindra, and Wipro. Forrester invited Capgemini to participate, but it was unable to do so, and Forrester wasn't able to provide a sufficiently accurate estimation of its capabilities. Each of these vendors has (see Figure 3):

- › **Revenue rates above a specific limit.** Providers demonstrated revenues of at least \$1 billion in AMDOS revenues.
- › **Global capabilities to serve multinational enterprises.** The selected suppliers are able to serve firms across North and South America, Europe, and Asia Pacific.
- › **Mindshare among Forrester's enterprise clients.** These suppliers frequently appear in Forrester client inquiries, shortlists, consulting projects, and case studies.

FIGURE 3 Evaluated Vendors: Supplier Information And Inclusion Criteria

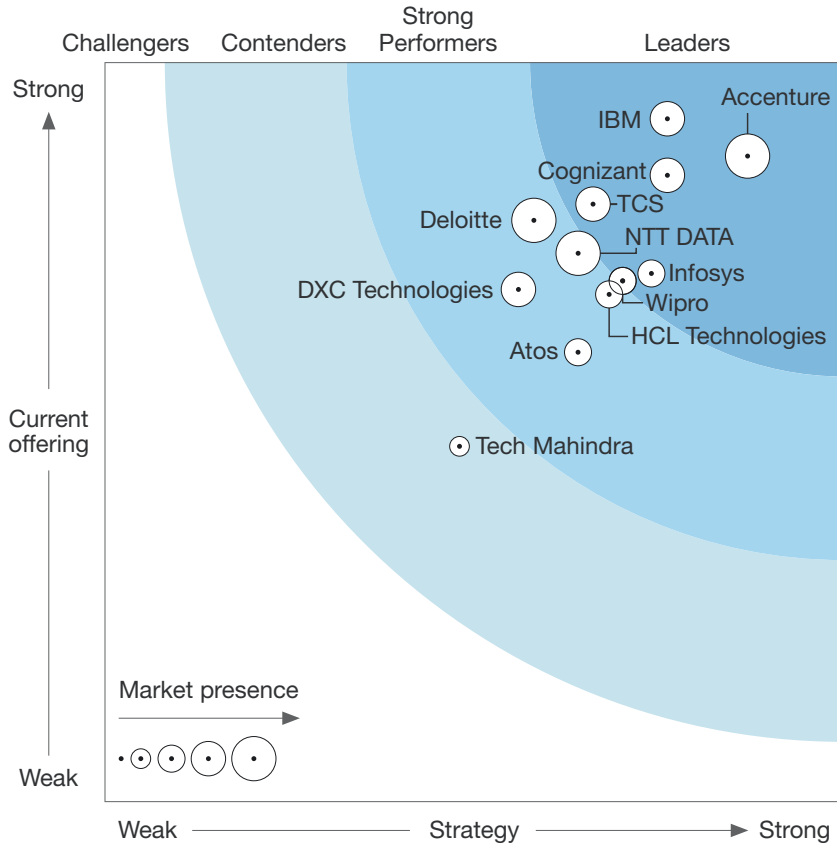
Vendor
Accenture
Atos
Cognizant
Deloitte
DXC Technology
HCL Technologies
IBM
Infosys
NTT DATA
Tata Consultancy Services
Tech Mahindra
Wipro

Vendor inclusion criteria
Revenues in application management and digital operations services (AMDOS) exceed \$1 billion.
Each supplier delivers AMDOS on a global basis.
Forrester has seen interest in each supplier from its clients.

Vendor Profiles

This evaluation of the AMDOS market is intended to be a starting point only. We encourage clients to view detailed product evaluations and adapt criteria weightings to fit their individual needs through the Forrester Wave™ Excel-based vendor comparison tool (see Figure 4). Click the link at the beginning of this report on Forrester.com to download the tool.

FIGURE 4 Forrester Wave™: Applications Management And Digital Operations Services, Q4 2017



FORRESTER RESEARCH
 The Forrester Wave™
 Go to Forrester.com to download the Forrester Wave tool for more detailed product evaluations, feature comparisons, and customizable rankings.

FIGURE 4 Forrester Wave™: Applications Management And Digital Operations Services, Q4 2017 (Cont.)

	Forrester's weighting	Accenture	Atos	Cognizant	Deloitte	DXC Technology	HCL Technologies	IBM	Infosys	NTT DATA	Tata Consultancy Services	Tech Mahindra	Wipro
Current offering	50%	4.36	3.04	4.23	3.93	3.46	3.43	4.61	3.57	3.70	4.04	2.40	3.51
Core capabilities	20%	4.60	3.00	3.80	3.40	2.60	2.60	4.20	4.20	3.40	4.20	3.00	3.80
Commercial and off-the-shelf capabilities	20%	5.00	3.30	4.65	3.45	3.80	4.05	4.65	4.65	3.70	4.40	3.10	4.05
Emerging capabilities	40%	4.60	3.40	4.20	4.20	3.60	3.40	4.60	3.00	4.20	4.00	1.80	3.00
Services and customer experience	20%	3.00	2.10	4.30	4.40	3.70	3.70	5.00	3.00	3.00	3.60	2.30	3.70
Strategy	50%	4.35	3.20	3.80	2.90	2.80	3.40	3.80	3.70	3.20	3.30	2.40	3.50
Value proposition	10%	5.00	3.00	5.00	3.00	5.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Industry momentum	10%	3.00	3.00	5.00	5.00	3.00	5.00	3.00	5.00	5.00	3.00	3.00	5.00
Vision	15%	5.00	3.00	5.00	3.00	1.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00
Execution road map	15%	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00	1.00	5.00
Innovation road map	15%	4.00	3.00	3.00	1.00	1.00	3.00	5.00	3.00	3.00	5.00	1.00	3.00
Commercial/pricing model	10%	5.00	5.00	1.00	3.00	5.00	3.00	3.00	3.00	5.00	3.00	3.00	3.00
Strategy for digital transformation	15%	5.00	3.00	5.00	3.00	3.00	3.00	5.00	5.00	3.00	3.00	3.00	3.00
Strategy for personnel	10%	5.00	3.00	3.00	3.00	3.00	5.00	5.00	5.00	1.00	3.00	3.00	3.00
Market presence	0%	4.60	2.50	3.90	4.10	3.90	2.90	3.90	2.90	4.70	3.40	1.50	2.80
Customer numbers	50%	5.00	4.00	5.00	5.00	5.00	4.00	5.00	3.00	5.00	4.00	2.00	4.00
Revenue	50%	4.20	1.00	2.80	3.20	2.80	1.80	2.80	2.80	4.40	2.80	1.00	1.60

All scores are based on a scale of 0 (weak) to 5 (strong).

LEADERS

- › **Accenture.** Accenture provides a broad range of solutions in the AMDOS sector that encompass digital readiness, security, cloud optimization, and many other areas with transparency and efficiency. Accenture describes its approach to applications outsourcing as liquid applications management, which features Lean engineering approaches and extensive use of automation and analytics to improve frequency of releases, productivity, and CX. Thus, Accenture seeks to help clients shift to modern operating models and prepare their entire application landscapes for the future. The company has made significant efforts toward transforming its own workforce for new technology operating models while pursuing automation through Accenture myWizard and its OPERA (optimize, eradicate, and automate) initiative. In pursuing innovation for clients, Accenture combines partnerships with leading and emerging ecosystem players, proprietary accelerators, industry-specific assets, and methodologies. Accenture is an excellent choice for I&O pros with broad AMDOS needs who are looking for a balance of technical and business strengths.
- › **IBM.** IBM intends to accelerate the shift to digital for its clients with its AMDOS offerings. Its next-generation ADM focuses on automation, including a learnings-based, cognitive-enabled strategy that offers the prospect of significant cost savings.¹⁴ IBM also helps customers migrate to a microservices-based approach. With its cognitive enterprise automation (CEA) services, IBM deploys robotic process automation (RPA) on an industrial scale to capitalize on digital workforce models. IBM's IMPACT method is its way of delivering value in a consistent and predictable manner. Automated, independent testing and broad-based capability in ERP are both notable strengths of its AMDOS offering. IBM has a clear strategy for digital transformation as well as for modernization of its AMDOS personnel, and its customer references are generally positive. This makes IBM a good choice for I&O pros seeking comprehensive AMDOS service offerings.
- › **Cognizant.** Cognizant uses its fit-for-use and fit-for-purpose strategies to provide value to its AMDOS customers. After a current-state evaluation and analysis of existing applications, Cognizant's first approach is to eliminate work and effort and introduce a zero-maintenance framework to reduce application-related technical and process debts and improve technical value. Additionally, the firm seeks to reduce complexity and rationalize applications to simplify the application portfolio and its management. Cognizant takes a human-centered design approach to transforming existing applications. With an integrated DevOps approach that includes complete continuous integration and delivery (CI/CD) automation tools, Cognizant seeks to ensure value-based outcomes. Cognizant's client-centric innovations focus on concept labs and collaboration with clients and include technology innovations such as R&D teams and centers of excellence that focus on DevOps and automation technologies. Although it still relies on a relatively high percentage of relationships based on time and materials in comparison with its competitors, Cognizant has a strong value proposition. The company retains considerable strength in core verticals, including healthcare and financial services, making it a good choice for firms in those sectors. Cognizant is also a strong option for firms that need Oracle apps expertise, but its customer references consider it less strong in ERP.

- › **Tata Consultancy Services.** With more than \$17 billion in annual revenues, Tata Consultancy Services remains one of the largest global IT services, consulting, technology, and digital solutions providers. Its activities in AMDOS are now influenced by its emerging “business 4.0” vision, which emphasizes intelligence, agility, and automation, all within the cloud. TCS is a significant supplier of AMDOS, with nearly 30% of its revenue derived from digital services, and SaaS represents a growing percentage of TCS’s AMDOS business. TCS’s strengths in AMDOS include an effective approach to managing customer experience as well as strength across categories such as packaged applications, legacy modernization, independent testing, and complementary consulting capabilities. TCS also has a solid approach to automation, encompassing an array of partner-derived assets and internally developed intellectual property (IP) such as ignio, TCS MasterCraft, and others. Its DevOps capability is also a strength compared with competing providers. TCS is a good choice for firms in its target verticals of financial services, retail and consumer business, communications, media and entertainment, and manufacturing, and it’s seeking to fuel its services business future with a broadening range of digital transformation services.
- › **Infosys.** Infosys is one of the largest India-centric outsourcers and has a relatively high percentage of revenues associated with AMDOS. It offers a full range of services, with a relatively strong record for managed services, and also supports a broad array of pricing alternatives. Under former CEO Vishal Sikka, Infosys was among the first of the major global systems integrators (GSIs) to embrace design thinking, and it continues to embrace that philosophy for the sake of its digital transformation strategy.¹⁵ The firm has strengths in legacy modernization, analytics, and ERP. However, customer references question Infosys’ user experience, design, and DevOps capabilities. Nevertheless, Infosys remains a solid alternative for I&O pros seeking support for core AMDOS services.
- › **Wipro.** Wipro, with approximately \$8.5 billion in revenues in 2017, aims to be a \$15 billion company by 2020. The firm will continue its strategy of modernizing at the core, using run services while helping its clients transform through “change the business” services. Wipro’s Framework for Application Services Transformation (FAST) includes a variety of assets and platforms arrayed across build, manage, and transform dimensions and offers a broad range of capabilities. Wipro is the industry’s leading exponent of crowdsourcing since its acquisition of Appirio, which also brought it the Top Coder development crowdsourcing community.¹⁶ Wipro has converged its primary development methodology with IP it acquired, along with DesignIT, in 2016.¹⁷ The company wants to move beyond service-level agreements (SLAs) to business-level agreements (BLAs) in its AMDOS engagements. Automation, using cognitive IP that includes RPA from partners in addition to its own Holmes platform, is a focal point of Wipro’s hyperautomation strategy. Wipro is a strong candidate for enterprise customers across industries.

STRONG PERFORMERS

- › **NTT DATA.** NTT DATA reinvigorated its AMDOS services with the acquisition of Dell’s services operation in 2016.¹⁸ The company is pursuing a strategy for AMDOS that includes combining savings from portfolio rationalization and modernization with continuous improvement of

automation-enabled application support to help fund improved CX and digital process innovation. NTT DATA's AMDOS footprint is smaller than that of some competitors, but it's well balanced, with no obvious weaknesses. In particular, NTT DATA has strong digital capabilities and SAP capabilities relative to its size. The company also has significant strength in DevOps in comparison with its competitors. NTT DATA is a solid option for most I&O teams and should appeal particularly to those seeking an alternative to global system integrators and India-centric system integrators.

- › **HCL Technologies.** HCL Technologies' position in infrastructure management is so strong that prospective clients often overlook its AMDOS capabilities. While HCL's percentage of revenue from AMDOS is lower than that of its direct competitors, it strives to use its solid engineering heritage and product-oriented development to build a strong AMDOS value proposition and pursue DevOps. HCL's Alternative Applications Support and Maintenance (Alt ASM) program stresses a comprehensive approach to AMDOS that emphasizes automation using its Drylce framework. SAP is another area of strength for HCL. Although HCL's breadth of capability in new development and support is strong, the company lacks the complementary consulting capabilities its direct competitors offer. HCL's customer references were very positive.
- › **Deloitte.** Deloitte offers a broad set of services, including consulting, tax services, advisory services, and audit.¹⁹ Its strategy for AMDOS spans advisory services, implementation services, and outsourcing services. With 45,000 employees, it can deliver AMDOS services in 100 countries. Deloitte has been rapidly growing its AMDOS services, where it emphasizes a collaboration-driven approach, technology-driven innovation, and automation. Deloitte's investment in an automation platform and deployment framework integrates proprietary solutions from acquisitions like ClearLight and innoWake with leading automation products. The company has also made a series of digital acquisitions, including Doblin, Heat, and Ubermind. Deloitte also follows Agile and DevOps practices in its AMDOS solutions and, unsurprisingly, has strong complementary consulting capabilities. Firms prioritizing ERP, legacy modernization, and cloud migration capabilities should consider Deloitte.
- › **DXC Technology.** DXC Technology, created through the merger of the outsourcing businesses of CSC and the former Hewlett Packard Enterprise Services (HPE Services) in April 2017, seeks to combine the best capabilities from its constituent parts; however, that combination is a work in progress as of this writing.²⁰ DXC focuses on cloud migration and outcomes while pursuing digital transformation, using advanced unit pricing models that include applications-based pricing. DXL offers strong ERP competencies across both Oracle and SAP platforms. However, client references cite weakness in DXC's user experience and design capabilities, and the company has a relatively weak position in complementary AMDOS consulting capabilities vis-à-vis its competitors. DXC is an excellent candidate for AMDOS opportunities at large enterprises that have ERP-centric requirements.
- › **Atos.** With approximately 100,000 employees and operations in 72 countries worldwide, Atos enjoys impressive geographic range. The company's vision is to be a trusted partner delivering digital empowerment to its clients. Its digital transformation factory includes expertise in digital

infrastructure among digital topic areas. The company uses Atos Canopy, a suite of orchestrated hybrid cloud services that focus on transforming IT applications and infrastructure toward the cloud. The company also has additional competencies, such as ERP and CRM applications management. Atos also provides a variety of commercial off-the-shelf offerings, either as customer installations or as managed services. Given its strength in Europe, Atos is an excellent choice for I&O pros seeking AMDOS strength in that region.

CONTENDERS

- › **Tech Mahindra.** Tech Mahindra, which combines the assets of Tech Mahindra and Mahindra Satyam, remains a significant supplier of AMDOS. Tech Mahindra's view is that to deliver a compelling customer experience, the technology stack and the technology function groups need to be agile, stable, and nimble. Accordingly, Tech Mahindra uses a holistic approach encompassing people, process, and technology to bring about change in AMDOS and enable a superior customer experience. Strengths of Tech Mahindra's AMDOS solution include strong legacy modernization and analytics capabilities. Tech Mahindra possesses significant strength in telecom, making it a suitable partner for telecom customers, but it's also expanding its range of vertical industry concentrations.

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Supplemental Material

ONLINE RESOURCE

The online version of Figure 4 is an Excel-based vendor comparison tool that provides detailed product evaluations and customizable rankings. Click the link at the beginning of this report on Forrester.com to download the tool.

DATA SOURCES USED IN THIS FORRESTER WAVE

Forrester used a combination of three data sources to assess the strengths and weaknesses of each solution. We evaluated the vendors participating in this Forrester Wave, in part, using materials that they provided to us by December 8, 2017.

- › **Vendor surveys.** Forrester surveyed vendors on their capabilities as they relate to the evaluation criteria. Once we analyzed the completed vendor surveys, we conducted vendor calls where necessary to gather details of vendor qualifications.

- › **Vendor briefings.** Forrester held briefings with every vendor to give them a chance to elaborate on the materials gathered during the survey process.
- › **Customer reference calls.** To validate product and vendor qualifications, Forrester also requested reference calls with three of each vendor's current customers.

THE FORRESTER WAVE METHODOLOGY

We conduct primary research to develop a list of vendors that meet our criteria for evaluation in this market. From that initial pool of vendors, we narrow our final list. We choose these vendors based on: 1) product fit; 2) customer success; and 3) Forrester client demand. We eliminate vendors that have limited customer references and products that don't fit the scope of our evaluation. Vendors marked as incomplete participants met our defined inclusion criteria but declined to participate or contributed only partially to the evaluation.

After examining past research, user need assessments, and vendor and expert interviews, we develop the initial evaluation criteria. To evaluate the vendors and their products against our set of criteria, we gather details of product qualifications through a combination of lab evaluations, questionnaires, demos, and/or discussions with client references. We send evaluations to the vendors for their review, and we adjust the evaluations to provide the most accurate view of vendor offerings and strategies.

We set default weightings to reflect our analysis of the needs of large user companies — and/or other scenarios as outlined in the Forrester Wave evaluation — and then score the vendors based on a clearly defined scale. We intend these default weightings to serve only as a starting point and encourage readers to adapt the weightings to fit their individual needs through the Excel-based tool. The final scores generate the graphical depiction of the market based on current offering, strategy, and market presence. Forrester intends to update vendor evaluations regularly as product capabilities and vendor strategies evolve. For more information on the methodology that every Forrester Wave follows, please visit [The Forrester Wave™ Methodology Guide](#) on our website.

INTEGRITY POLICY

We conduct all our research, including Forrester Wave evaluations, in accordance with the [Integrity Policy](#) posted on our website.

Endnotes

- ¹ Forrester Research last looked at this market in 2014. See the Forrester report "[The Forrester Wave™: North American Applications Outsourcing Services, Q1 2014](#)" and see the Forrester report "[The Forrester Wave™: EMEA Applications Outsourcing Services, Q1 2014](#)."
- ² See the Forrester report "[Tame Your Tech MOOSE Before The BT Agenda Makes It Bigger](#)."
- ³ This is a Forrester estimate based on compiled customer reference responses. We summed responses to the question "What is the total contract value of your engagement with the supplier?" across 33 reference surveys.

- ⁴ See the Forrester report “[Vendor Landscape: Cloud Migration Services.](#)”
- ⁵ So far, suppliers present a mixed picture with regard to addressing these new requirements. For example, customer references give high marks to suppliers, both for initial and ongoing experience, but retain doubts about suppliers’ digital capabilities and DevOps. In our 33 client reference surveys, we asked customers of the major AMDOS suppliers to agree or disagree with statements regarding their supplier’s performance on a 1 to 5 scale, where 1 = disagree; 2 = disagree; 3 = neutral; 4 = agree; and 5 = strongly agree. In response to the statement, “Our initial experiences, including our transition to the supplier, were very positive,” clients responded with an overall average score of 4.58 to 5. When we asked them to respond to the statement, “Our ongoing experience after initial transition has been very positive from the standpoint of customer satisfaction,” they responded with an average score of 4.50. When we asked them to respond to the statement, “Our ongoing experience after initial transition has been very positive from the standpoint of customer satisfaction,” they responded with an average score of 4.55.
- By contrast, customer references responded to the statement, “The provider has significant capabilities in the area of user experience and design,” with an average score of 4.05. They responded to the statement, “The supplier has proven it can help us implement DevOps in our environment with appropriate services and tooling strategies,” on average, with a score of 3.98.
- ⁶ Forrester asked suppliers to provide their revenues associated with AMDOS. This figure represents the sum of their responses.
- ⁷ In 2016, Forrester predicted that conventional applications management services (AMSes) would shrink 30% by 2020, although the current trajectory casts doubt on that outcome. See the Forrester report “[Bring Your Applications Management Services Into Your Digital Future.](#)”
- ⁸ While the roster of prominent suppliers hasn’t changed much (although industry consolidation yields new names in the form of DXC Technology, the combination of CSC and HPE Services, and NTT DATA, which acquired Dell Services), winds of change continue to blow in the form of new company management (Infosys and TCS) as well as the intervention of activist investors (Cognizant).
- ⁹ However, this multibillion dollar industry is growing (albeit at low single-digit rates), and certainly shows no signs of shrinking, despite significant changes in buyer priorities and delivery dynamics.
- ¹⁰ Source: Forrester estimate.
- ¹¹ See the Forrester report “[Vendor Landscape: Advanced Automation Service Providers, Q3 2017.](#)”
- ¹² See the Forrester report “[Fund Business Technology Outcomes, Not IT Assets.](#)”
- ¹³ See the Forrester report “[The Need For Speed: Drive Velocity And Quality With DevOps.](#)”
- ¹⁴ ADM refers to applications development and maintenance.
- ¹⁵ Sikka’s policies continued under interim CEO Pavin Rao, although how they will fare under new CEO Salil Parekh remains undetermined.
- ¹⁶ Source: “Wipro to acquire Appirio, A Global Cloud Services Company,” Wipro press release, October 20, 2016 (<https://www.wipro.com/newsroom/press-releases/2016/wipro-to-acquire-appirio--a-global-cloud-services-company/>).
- ¹⁷ Source: “Wipro Digital to Enhance Digital Transformation Capability with Designit,” Wipro press release, July 9, 2015 (<https://www.wipro.com/newsroom/press-releases/2015/wipro-digital-to-enhance-digital-transformation-capability-with-/>).
- ¹⁸ Source: “NTT DATA Closes Acquisition of Dell Services,” NTT DATA press release, November 2, 2016 (<http://www.nttdata.com/global/en/news-center/pressrelease/2016/110300.html>).
- ¹⁹ Deloitte focuses on a broad set of industry verticals, including financial services, consumers, technology, energy, healthcare, and federal/public sector.

²⁰ Source: “CSC and HPE Enterprise Services Division Complete Merger to Form DXC Technology,” DXC Technology press release, April 3, 2017 (http://www.dxc.technology/newsroom/press_releases/140580-csc_and_hpe_enterprise_services_division_complete_merger_to_form_dxc_technology).

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