Application Development and Maintenance Services

Quadrant Report

A research report comparing provider strengths, challenges and competitive differentiators

August 2017
About this Report

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The research and analysis presented in this report includes research from the ISG Provider Lens™ program, ongoing ISG Research programs, interviews with ISG advisors, briefings with services providers, and analysis of publicly available market information from multiple sources. The data collected for this report represents information that was current as of May 31, 2017. ISG recognizes that many mergers and acquisitions have taken place since that time but those changes are not reflected in this report.

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Application Development

Application Support and Maintenance

Application Testing

End-to-End ADM – BFSI

End-to-End ADM – Healthcare & Life Sciences

Methodology
EXECUTIVE SUMMARY

- **Digital transformation is becoming a top priority for most enterprises.** The drive to digital transformation is giving rise to several sub-trends that affect ADM, such as multi-modal operations in which business units run at different paces based on business urgency and criticality, low-code/no-code platforms that allow organizations to quickly configure rather than code applications, enthusiasm for data-led initiatives and the adoption of cloud-native architectures.

- **The use of modularization, containerization and componentization is increasing for applications.** Services providers are incorporating new approaches in how they develop and deliver applications via modular, component-based and container-technology. Because an application gets broken down into workloads and microservices, its release and production cycles are short, which makes applications easier to modify and deploy. Taking a modular, container or component approach also decreases the dependencies among team members because they no longer need to deal with tightly coupled applications.

- **Off-the-shelf tools enable automation.** Packaged software tools are enabling test automation, build orchestration and release-and-provisioning automation. Some of the tools most commonly used to reduce time between delivery and production are:
  - **Docker:** A tool for packaging an application along with all its dependencies into a containerized unit for software provisioning.
  - **Puppet:** A tool that automates several functions of a DevOps workbench, including provisioning, orchestration and reporting.
  - **Ansible:** An IT automation tool that orchestrates advanced tasks, such as continuous integration and zero downtime rolling updates. It also is used for configuring systems while deploying software.
  - **Jenkins:** An open source continuous delivery software that manages and controls an array of software lifecycle processes, including but not limited to building, documenting, testing, packaging, staging, deploying and conducting static analysis.
  - **Git:** An open source version control system designed to support distributed, non-linear workflows with emphasis on data integrity and speed.
  - Other notable tools include SonarSource, CHEF, Splunk, SaltStack, Logstash, Automic, Maven and Artifactory.
Organizations are fostering a cross-functional-team culture. To promote a DevOps culture in the delivery ecosystem, organizations are trying to create a congenial environment in which cross-functional teams can work together and be judged based on responsiveness, cycle times and other similar parameters.

Services are becoming industrialized. Services providers are promoting code reusability by building application design templates and leveraging them to build full-fledged applications across different clients with similar requirements. This approach saves valuable time for developers who have been writing code from scratch.

Business digitization is dividing the enterprise application function. Business digitization is expanding quickly to eventually break the application function into two areas or approaches: traditional and digital. The traditional organization can focus on stability and efficiency through linear growth, following stringent governance rules, executing plan-driven conventional projects and working with traditional providers. Meanwhile, the digital function can be an experimental, agile organization focused on time-to-market, agile app evolution and projects with shorter working cycles and smaller teams.

Maintenance budgets are shrinking and reinvestments are going to "mode two" activities. Enterprise clients' overall ADM budget levels have remained largely unchanged over the last two to three years. However, market dynamics are changing the composition of the investments in the different sub-areas within ADM. With the availability of robotic process automation (RPA) tools like Blue Prism or Automation

Fixed-fee pricing becomes the norm; output/app/outcome-based deals are on the rise. Managed services provides the most appropriate model for mature organizations running application deals. This shift has been a key driver behind fixed-fee pricing, which is displacing time and materials (T&M) as the most preferred pricing model. ISG sees fixed-fee pricing in more than 50 percent of all new ADM contracts. Other models that are making inroads include:

- **Outcome-based**: Services providers and clients share cost savings or revenues through measurable business outcomes.
- **Gain-share**: Services providers earn a bonus if they attain defined KPIs.
- **App-based maintenance pricing**: Pricing is based on factors that affect maintenance cost, such as the number of transactions, number of users, application maturity or application volatility. Pricing is not attributed to the resources dedicated to managing the application portfolio.
- **Output-based**: Pricing is based on a unit of output such as the number of text scripts executed or maintenance tickets resolved.
Executive Summary

- **Deals are decreasing in value and shrinking in duration.** Enterprise clients that understand the impact of cloud, labor automation and continuously changing development environments do not want to commit to a particular solution for the long term. Large single-sourced deals are no longer popular. Clients are moving away from the longstanding “one-size-fits-all” approach and focusing on creating multi-supplier environments, with provider solutions meeting more specific business and IT needs. As a result, ADM contracts are becoming shorter and smaller.

- **Service bundling is increasing.** Services providers are bundling different services not only to gain more control of their clients’ IT environments, but also to enhance and expedite the overall speed of their services. Typical service bundles include application development (AD) + application management (AM), application management (AM) + business process management (BPM), and AD + AM + infrastructure services. For transformation projects, some providers are quoting a standard timeline with each of their packaged offerings as part of their go-to-market strategy.

- **BFSI and healthcare and life sciences industries are moving to next-gen contracting.** The Banking, Financial Services and Insurance (BFSI) and Healthcare and Life Sciences (HCLS) industries have historically been among the highest spenders on application outsourcing. Lately, they have had an upsurge in emerging technologies adoption. The BFSI industry has been among the early adopters of digital technologies and has awarded multiple contracts focusing on back-, mid- and front-office transformations. On the other hand, the Healthcare industry has been at the forefront of exploring data via cognitive and Big Data technologies. The rapidly changing outsourcing landscapes in these two industries was the primary reason this ISG Provider Lens™ report uses separate quadrants focused on BFSI and HCLS.
Introduction

Figure 1: ADM Quadrant Structure – U.S. 2017

Scope of the Report

Application Development and Maintenance (ADM) services cover consulting, designing, development (coding and integration), build and release, operations, technical support and testing of applications. It includes all applications related to supporting and running an enterprise’s business.

Our research studies are intended to anticipate the investigation efforts and buying decisions of typical enterprise clients. When contemplating a significant strategy transformation, implementing agile practices or incorporating automation into their environments, an enterprise client will benefit from a study that examines an entire ecosystem for the service line they are examining. Whether that is ADM, Workplace Services, Contact Center Services, Data Center or IoT, each of these areas of focus are typically made up of consulting and advisory services, system integration,
development and support. Therefore, the ISG studies will be comprised of multiple quadrants covering a variation of services that an enterprise client would require.

This study on ADM includes four quadrants that represent the typical variations of application services; namely end-to-end services, application development, application support and maintenance and application testing. Two additional quadrants have been included in this study to capture the two most mature industry verticals for the ADM space, which are: Banking, Financial Services and Insurance (BFSI) and HealthCare and Life Sciences (HCLS). See Figure 1. These quadrants are further defined as follows:

- **End-to-End ADM** – in this quadrant ISG will assess providers who deliver consulting, application development, support, maintenance and testing services.

- **Application Development** – in this quadrant ISG will assess providers who deliver both custom development and software integration.

- **Application Support and Maintenance** – in this quadrant ISG will assess providers who deliver minor enhancements, bug fixes, patching, upgrades, preventative maintenance, ad-hoc requests, helpdesk support, and incident and problem management.

- **Application Testing** – in this quadrant ISG will assess providers who deliver testing service across the application lifecycle, including the build and operate phases.
Provider Classifications

The ISG Provider Lens™ quadrants were created using an evaluation matrix containing four segments, where the providers are positioned accordingly.

**Leader**

The “leaders” among the vendors/providers have a highly attractive product and service offering and a very strong market and competitive position; they fulfill all requirements for successful market cultivation. They can be regarded as opinion leaders, providing strategic impulses to the market. They also ensure innovative strength and stability.

**Product Challenger**

The “product challengers” offer a product and service portfolio that provides an above-average coverage of corporate requirements, but are not able to provide the same resources and strengths as the leaders regarding the individual market cultivation categories. Often, this is due to the respective vendor’s size or their weak footprint within the respective target segment.

**Market Challenger**

“Market challengers” are also very competitive, but there is still significant portfolio potential and they clearly lag behind the “leaders”. Often, the market challengers are established vendors that are somewhat slow to address new trends, due to their size and company structure, and have therefore still some potential to optimize their portfolio and increase their attractiveness.

**Contender**

“Contenders” are still lacking mature products and services or sufficient depth and breadth of their offering, while also showing some strengths and improvement potentials in their market cultivation efforts. These vendors are often generalists or niche players.
Rising Star

Rising Stars are mostly product challengers with high future potential. When receiving the “Rising Star” award, such companies have a promising portfolio, including the required roadmap and an adequate focus on key market trends and customer requirements. Also, the “Rising Star” has an excellent management and understanding of the local market. This award is only given to vendors or service providers that have made extreme progress towards their goals within the last 12 months and are on a good way to reach the leader quadrant within the next 12-24 months, due to their above-average impact and innovative strength.
# ADM Cross-Quadrant Provider Listing 1 of 3

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<thead>
<tr>
<th>Provider</th>
<th>End-to-End Application Dev &amp; Maintenance</th>
<th>Application Development</th>
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**END-TO-END ADM QUADRANT**

**Definition**

End-to-end ADM covers all services falling under the broader ADM concept, including consulting, application development (custom development and software integration), support, maintenance and testing services. The providers categorized under this quadrant are capable of efficiently running end-to-end ADM managed contracts.

**Observations**

- Accenture and IBM lead the pack, leveraging their rich consulting and transformation experience, comprehensive services portfolio, investments in emerging technologies and partner ecosystems.
END-TO-END
ADM QUADRANT

Observations (cont.)

- Cognizant and TCS continue to grow in the U.S. market by relying on their breadth and depth of services. HCL and Wipro are gaining momentum backed by strong product portfolios, clear vision and expanding delivery footprints. DXC also gets a dominant leader position based on its new-found scale and abundant IP.

- Infosys and Tech Mahindra continue to impress with their end-to-end transformation offerings and pursuit of next-gen ADM deals. Capgemini has deep domain expertise, an extensive services portfolio and strong frameworks.

NTT DATA, following its acquisition of Dell Services, provides a credible alternative to Tier 1 firms for ADM managed services. CGI has the right scale, experience and IP-defined business model and is starting to attract new-age buyers to augment its growth. Both are what ISG considers “rising stars” and will be profiled in this report along with the ten leaders.

Additional Participating Providers

The following services providers were considered for this quadrant but were not positioned in the quadrant:

Birlasoft, Fujitsu, Genesis10, Luxoft, Persistent, QualiTest Group, Quinnox, Unisys and Zensar.
Accenture's ADM services revenue is estimated to be approximately $7 billion from the U.S. market in 2016. Accenture has approximately 70,000 application outsourcing professionals globally providing ADM services to its U.S. clients from a global delivery network of more than 50 centers in 35 countries.

**Overview**

Accenture's differentiated delivery revolves around the four I's – industrialization, innovation, intelligence and industry – complements its rich heritage of technology consulting services. This makes it a juggernaut in the ADM outsourcing industry.

**Strengths**

- **Well-distributed delivery footprint:** With approximately 20 delivery centers in North America, 12 centers in Latin America and 21 centers in the APAC region, Accenture provides clients with an array of options for time zone, cultural alignment and language capabilities.

- **High marks on innovation:** Accenture clients get early access to new technologies via its wide range of more than 150 alliances with universities, startups and top technology vendors, including SAP, Oracle, Microsoft, Pega and emerging players. Its seven technology labs (including two in the U.S.) incubate and prototype new concepts through applied R&D projects for clients' businesses.

- **Digital transformation leadership:** Accenture offers end-to-end digital portfolio services including strategy, design, implementation and execution of the operations. It has a network of digital design studios that complement its development of industry-focused solutions. In the last three years, Accenture has made a series of acquisitions (including Agilix Technologies, OPS Rules, Chaotic Moon, Cloud Sherpas, DayNine, Enkitec, FJORD, Karmarama, OCTO Technology and SolutionsIQ) in the areas of analytics, cloud, application design and automation – acquisitions that have helped it leap ahead of its competition.

**Caution**

Accenture's premium price tag could affect its financial performance as the market becomes more cost competitive.

**Emerging technology development:** Accenture has invested more than $500 million to develop cloud-related capabilities, including the Accenture Cloud Platform, an open, scalable and technical solution for enterprises to flexibly manage workloads across any cloud environment on demand and at speed. It also has invested in a SaaS application testing environment plus cloud migration, cloud brokerage and augmentation capabilities.

**2017 ISG Provider Lens™ Leader**

Accenture’s differentiated delivery revolves around the four I’s— industrialization, innovation, intelligence and industry – complements its rich heritage of technology consulting services. This makes it a juggernaut in the ADM outsourcing industry.
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Capgemini has been quite successful in scaling up its IP-driven application business in the U.S. market after the IGATE acquisition. Capgemini’s current focus and investments on digital and cloud can help it win significant deals in this geography.

Flexible service delivery approach: Capgemini’s Rightshore® approach enables clients to blend local and offshore resources into a unified and globally managed delivery network. It is a dynamic and flexible model that can accommodate delivery location changes according to the changes in the client’s business and demand, including quality, availability and cost considerations. Capgemini has more than 5,000 employees in North America to successfully execute this model.

Platform-oriented approach to digital transformation: (R)evolution is Capgemini’s platform that delivers business outcomes by automating clients’ digital core assets and capabilities. Cloud, integrated ADM, business services and design thinking are the underlying themes for this platform. It also leverages complementary platforms like Immediate, Predix, Apollo, Immediate and COMPLETE to expedite clients’ digital journeys.

Vertical-specific CoEs: Capgemini’s vertical-specific centers of excellence play a major role in marketplace differentiation. They are CALORIE for the energy and utility industries, CHROME for automotive and other manufacturing and CRESCENT for consumer products and retail.

Capgemini’s ADM services revenue from the U.S. market in 2016 is estimated to be approximately $2 billion. Capgemini employs an estimated 26,000 workers who provide ADM services to its U.S. clients from a network of 23 delivery centers primarily located in India and the U.S.

ISG advisors rate Capgemini as average in providing price-efficient ADM solutions in managed services contracts. Its T&M resource price list is in line with market standards.

Capgemini has been quite successful in scaling up its IP-driven application business in the U.S. market after the IGATE acquisition. Capgemini’s current focus and investments on digital and cloud can help it win significant deals in this geography.
Cognizant is among only a few services providers that have been able to make the leap from an efficiency play to a value play. A very high DevOps adoption rate by its clients, its establishment of a dedicated digital unit and newer engagement models, such as gain sharing are all testimony to Cognizant’s value shift.

Two-in-a-box approach: Cognizant integrates its client relationship team and its delivery team for specific projects. Cognizant designates a Client Partner (CP), who has both technical expertise and management knowledge, heads the relationship team and is present on-site. The CP works in lockstep with the delivery manager and has co-ownership of the client. The CP can make major decisions for the client related to investments, resources and timelines, which avoids the typical lag associated with approvals. The arrangement offers greater customer intimacy, speed of delivery, local decision-making and responsiveness.

Strong onshore/nearshore presence: Cognizant has almost 30 percent of its ADM resources in either onshore or nearshore centers. It has opened new centers in Argentina and the United States to optimize on-site/offsite resource ratios, especially as required for deals leveraging DevOps delivery models in which a product release cycle might be as short as a few days.

Frameworks: Cognizant has developed proprietary frameworks such as AVMPlus and SimpliFIT for a modular and integrated approach to shorten delivery times and introduce new delivery mechanisms and technologies into the client environment.

Cognizant’s depth and breadth of services are most visible in the banking, financial services, insurance (BFSI) and healthcare industries. The company also has moderate industry-related capabilities for the manufacturing, CPG and retail, media and communications verticals.
DXC TECHNOLOGY

Overview

DXC Technology’s (DXC) ADM services revenue is estimated to be approximately $4.7 billion from the U.S. market in 2016. An estimated 27,000 employees provide ADM services to its U.S. clients from a network of more than 20 global delivery centers spanning across the U.S., Latin America, Eastern Europe and Southeast Asia.

Strengths

HPE-CSC synergy: The newly formed DXC has become bigger, smarter and more local through its mergers, acquisitions and strategic investments. It is now a $26 billion services company with 170,000 employees and operations in more than 60 countries.

Service and technology alignment: The company’s go-to-market strategy includes six core services that are intended to take customers from developing strategy to executing it. These services include: application consulting, application integration, application modernization, application development, application testing and application management. Within each service, DXC is prepared to address mobility, analytics, customer experience, Internet of Things (IoT), social media and cloud technology. To support this strategy DXC is creating advisory services for each service.

Multimodal approach to engage clients: The company has built up an impressive range and scope of offerings. It has entered into next-generation outcome-based application contracts with selective, innovative clients while it continues to support its remaining clients through traditional offerings, leading them gradually towards transformation.

Caution

Before DXC was formed, both CSC and HPE were grappling with similar challenges in their legacy businesses, including revenue loss, frequent management changes and shrinking margins. It will be very interesting to see how the combined entity will try to overcome these hurdles.

DXC is expecting to benefit from its newfound scale (before the merger CSC was an $8 billion company and HPE was $18 billion) but is not relying on its scale to succeed. Its investments in developing expertise and divestments to change its assets and customer base suggest it is committed to focusing on transformative opportunities it believes will provide the most value.

2017 ISG Provider Lens™ Leader

DXC
HCL TECHNOLOGIES

Overview

HCL Technologies’ (HCL) ADM services revenue was approximately $1.8 billion from the U.S. market in 2016. It has approximately 29,000 employees that provide ADM services to its U.S. clients from a network of more than 26 delivery centers primarily located in the U.S., India and Malaysia.

Strengths

Mode 123 growth strategy: HCL is reorganizing its internal teams, service lines and technology focus. This strategy is named “Mode 123” and refers to three services groups within HCL, running at dissimilar paces with areas of focus ranging from traditional system integration to creating IP through the development of new products and platforms. Mode 123 is based on the design and usability of modern applications, the pervasiveness of connected systems with data at the center, and the growing footprint of network-defined infrastructures.

A well carved-out digital proposition: Unlike most services providers whose digital strategies revolve around SMAC technologies, most of HCL’s digital projects are end-to-end engagements in which it is responsible for digitizing the entire value chain and has direct impact on a client’s topline, profitability or end-user experience.

Cloud capabilities: HCL has executed more than 40 successful application migrations to cloud projects. It has an extensive cloud services portfolio, including consulting and architecture (design); application migration, re-engineering, new build and SaaS configuration (implementation support); and cloud operations (run) services that are automated through DRYiCE, its automation and orchestration platform.

Caution

Although HCL has started focusing on developing an IP product-led business, we are yet to see any significant developments in the field. Proprietary IP currently is not HCL’s strength and could prove to be a weak link in the future.

2017 ISG Provider Lens™ Leader

Through its Mode 123 strategy and progress made in the fields of automation, cloud and digital, HCL is prepared to ride the next wave of major investments in the IT industry.
IBM's differentiated delivery revolves around the four iI's – Industrialization, Innovation, Intelligence and Industry.

IBM's ADM services revenue is estimated to be approximately $7 billion from the U.S. market in 2016. An estimated 40,000 employees provide ADM services to its U.S. clients from a network of more than 25 global delivery centers.

Overview

IBM's coverage of the IT industry value chain (including ADM) is incomparable. Questions about IBM are not about capability, scale or presence but whether the company will take the best approach to reorganizing itself to compete in a fast-changing marketplace.

Strengths

- **Technology leadership**: IBM has highly innovative offerings, including analytics, automation, cloud, mobility and security. Many of its peers leverage IBM proprietary solutions to build their own offerings. For example, multiple services providers use IBM Watson as the basis for their own AI offerings.

- **Complementary software business**: IBM is a unique service provider that has an even larger software business. Thus, IBM's services division has access to many of the company's proprietary software products that it can leverage across the application value chain.

- **Delivery footprint**: IBM has an impressive delivery footprint across the globe. It has one of the most prominent onshore presences in the U.S., including rural sourcing options.

Caution

Lately the company has been struggling to sustain profitability in its IT services business. IBM's value-based premium service positioning is being constantly challenged by cost-effective offerings from peers, especially the top-tier Indian providers.

2017 ISG Provider Lens™ Leader

IBM's coverage of the IT industry value chain (including ADM) is incomparable. Questions about IBM are not about capability, scale or presence but whether the company will take the best approach to reorganizing itself to compete in a fast-changing marketplace.
INFOSYS

Overview

In 2016, Infosys' ADM services revenue was approximately $1.9 billion in the U.S. market, which is served by 42,000 employees that provide ADM services to U.S. clients from a network of 19 global delivery centers. Most U.S. clients are supported from teams in India and the U.S.

Strengths

Value-add delivery approach: Infosys has a standardized and mature approach to managed services contracts, following a “renew and new” strategy for each of its project. In the renew phase, it identifies areas in the current projects that can be improved to give significant savings in operations. The new phase identifies hidden problems and opportunities to make the client organizations future ready.

Transition capabilities: Infosys has a strong transition methodology covering various aspects like service transition, process harmonization, personnel enablement, logistics, service enablement, governance, HR and organizational change management.

DevOps capabilities: Infosys has more than 450 DevOps consultants, more than 120 DevOps client engagement professionals, over 10,000 CI-CD tool specialists globally, multiple vendor alliances, and its own set of IP, platforms and labs to support such initiatives. Moreover, it has been able to achieve this with an offshore-heavy delivery model. Infosys is prepared to mitigate risks that may arise if the U.S. government puts more stringent visa rules in place.

Caution

Infosys has long taken a conservative approach to investing in emerging areas or in gaining capabilities through inorganic growth. More recently it has made acquisitions and investments in emerging areas like digital, SMAC and cloud. However, many of its peers have been a step ahead in gaining expertise in these areas.

2017 ISG Provider Lens™ Leader

Infosys can be the right partner for clients that gradually want to shift to more mature outsourcing models, given its changing focus toward newer and more evolved deal structures. It is particularly strong in the BFSI, healthcare, manufacturing, energy, telecom, media, retail and CPG industries.
TCS

Overview

TCS’ ADM services revenue was approximately $6.5 billion from the U.S. market in 2016. More than 60,000 employees provide ADM services to its U.S. clients from a network of more than 100 local, regional and global delivery centers with primary locations in India, the U.S., Mexico and Uruguay.

Strengths

Industry-aligned and buyer-centric strategy: TCS has been observing enterprise buyer behavior across industries and has been adapting its offerings and go-to-market strategies to align with changing buyer needs. For example, in the media industry, TCS has seen how complex application modernization programs lead to application outsourcing demand. Meanwhile in the utilities industry, heavy cloud adoption and platform transformation are leading to outsourcing engagements.

Solution accelerators: TCS recognizes the pervasiveness of “digital business” and is seeing it reshape customer IT requirements. To address these demands, TCS has been strengthening its focus on domain specialization and helping clients accelerate time-to-value using vertical-specific “solution accelerators.” Examples include a social and mobile point of sale (POS) solution for retailers, templates for utilities such as dashboards for water and gas and platforms for inter- and intra-government functions. Other “solution accelerators” have been developed for the manufacturing, life sciences, healthcare, financial services and energy verticals.

Local resource pool: In the U.S., TCS has been steadily and systematically ramping up its local recruitment efforts by cultivating relationships with local universities. TCS also contributed to a U.S. 2020 program to launch a new online platform that aims to connect more STEM professionals to grassroots volunteering opportunities.

Caution

TCS could further improve by acquiring firms that bring entirely new capabilities not just those that augment its existing strengths, especially in the areas of cloud, mobility, social, analytics and other emerging technologies.

2017 ISG Provider Lens™ Leader

TCS is following a strategy that, at the core, reflects changing market conditions. Being able to serve clients across the outsourcing maturity spectrum will help TCS offset some of the slowdown in mature markets by tapping in to first-time outsourcers in emerging markets. This approach will be further augmented by TCS’ global footprint, in which it continues to invest.
Tech Mahindra's (TechM) ADM services revenue was approximately $2 billion from the U.S. market in 2016. Approximately 32,000 TechM employees provide ADM services to its U.S. clients from a network of more than 25 delivery centers located across the U.S., Latin America and Asia.

**Overview**

**Strengths**

**Strong EA practice:** TechM has a strong enterprise architect (EA) practice with more than 40 EAs and a dedicated Business Value Enhancement (BVE) consulting team supported by individual platform and package competency teams to drive transformational journeys globally.

**Agile and DevOps capabilities:** TechM has a good track record delivering large Agile engagements with assets such as SPEED (an Agile transition methodology) and AIM (the company’s Agile Index of Maturity). It has a dedicated consulting team for DevOps strategy and adoption. Other TechM resources include its DevOps assessment tools and maturity model, and the ADOPT platform that provides end-to-end automation by orchestrating process and information flow across a tool stack.

**Technology CoEs and labs:** TechM’s investment in technology labs (including the Magic Lab with IBM), centers of excellence (including its product center of excellence for TIBCO), and labs devoted to big data, analytics and DevOps, along with its product partners bring forth innovative accelerators and tools for incubating and supporting new modernization service offerings that are aligned with customers’ technology standards.

**Caution**

About one fourth of TechM’s ADM projects are running in a managed services mode. This is low compared to its peers.

**2017 ISG Provider Lens™ Leader**

TechM has developed relevant vertical- and domain-expertise and has created a strong partner ecosystem. It has also achieved the required scale to cater to the global needs of large U.S.-based clients.
Wipro's ADM services revenue was approximately $2.3 billion from the U.S. market in 2016. Approximately 32,000 employees provide ADM services to its U.S. clients from a network of 22 delivery centers with primary locations across the U.S., Latin America and Southeast Asia.

**Overview**

**Strengths**

*Growth in emerging areas via acquisitions:* Wipro has made 18 acquisitions in the last 15 years. There have been some notable recent deals that gave Wipro much-needed help in filling an emerging technology void to become a powerful transformation partner. Major deals include the Appirio acquisition to become a dominant player in cloud applications and the Designit acquisition to enhance its capabilities in digital and customer experience.

*Localization in the U.S. market:* Wipro employs a diverse employee base with a variety of skillsets in the U.S. It has invested close to $2 billion in North America and employs more than 13,000 people in the region. It has opened and expanded facilities across the U.S. and now has approximately 50 offices in the country.

*Integrated focus on large deals:* Wipro has a dedicated division for integrated services used in large deals involving multiple service towers. This division collaborates with the various service tower teams involved in an engagement to focus on customer experience, business acceleration, simplified and sustained IT and connected ecosystems.

**Caution**

Wipro doesn't believe in selling its IP without services associated with it. Some of its peers are using a different strategy, i.e. selling licenses for their proprietary products. Licensing is proving to be an effective strategy for earning recurring revenue and mitigating risk.

Wipro's extensive depth and breadth of services, along with its presence in all the major geographies and industries, make it an ideal partner for large multi-geography ADM engagements.
RISING STAR: CGI

Overview

CGI's ADM services revenue from the 2016 U.S. is estimated to be approximately $1 billion. It has an estimated 12,200 employees providing ADM services to U.S. clients from a network of more than 42 delivery centers, with primary locations across the U.S., Canada and India.

Strengths

**Approach to digital transformation:** CGI followed a three-tier approach to bolster growth in its digital business. First it created a high-end consulting practice backed up by industry-aligned accelerators geared toward the BFS, government, e-commerce and energy sectors, and took local innovations to a global scale. Second, its IP30 digital solution development program is spearheading an effort to increase IP-based company revenue from 18 percent in FY2015 to a target of 30 percent in FY2019; another goal is to develop more than 150 digital solutions. Thirdly, it is developing transformational outsourcing methodologies by investing in cloud technologies, including hybrid-cloud management (Unify360), automation, IaaS and robotic process automation.

**Proximity:** CGI is headquartered in Canada and employs approximately 15,000 application outsourcing FTEs in North America. It has offshore capabilities in India and other countries. Thus, CGI is well positioned to offer hybrid delivery models for clients that require them.

Caution

CGI has limited agile and DevOps penetration in its existing client base. It might be because a major portion of CGI’s revenue comes from government accounts, which limits the vendor's ability to introduce changes.

CGI needs to adopt a more proactive consulting approach to introduce new practices and technology frameworks into the client ecosystem and move clients up the IT maturity curve.

2017 ISG Provider Lens™ Rising Star

CGI has deep domain expertise in sectors such as government, manufacturing, retail, BFSI and healthcare. It is a good fit for large clients looking to pursue modernization and cloud initiatives with a global and local delivery presence.
RISING STAR: NTT DATA

Overview

NTT DATA’s (NTT) ADM services revenue is estimated to be approximately $760 million from the U.S. market in 2016. It has 7,700 employees providing ADM services to U.S. clients from a network of more than 12 delivery centers in the U.S., Canada, Latin America and Asia.

Strengths

Increasing expertise in emerging areas: NTT is focusing on a user-centric design approach and lean Agile development to accelerate business value creation and ROI. Approximately 40 percent of its client engagements are currently running in Agile mode. NTT DATA has established CoEs for mobility, Agile, DevOps and digital labs, which cover user experience and user interface design.

Experience in managed contracts: NTT DATA has successfully completed more than 100 transitions in the last 14 years. Currently, 70 percent of its ADM projects are running in managed services mode.

Analytics competency: NTT has invested in creating an integrated advanced analytics offering, which includes predictive analytics, big data, artificial intelligence and cognitive computing. It also has established partnerships with leading vendors including SAS, Cloudera, Hortonworks, Tableau and MicroStrategy. NTT DATA is offering clients next-generation models such as data-as-a-service.

Caution

NTT needs to further grow its business in the U.S. for it to compete with Tier 1 Western and Indian services providers for large-scale end-to-end deals.

2017 ISG Provider Lens™ Rising Star

NTT DATA is an attractive mid-scale player that has strong custom development, system integration and testing capabilities and can run managed services contracts.
Definition

Application development (AD) services are delivered in two ways, either as contracted resource pools or as major development projects (MDP), which are larger-scale development programs that exceed minor enhancement criteria.

AD includes both custom development (developing applications from scratch based on Java, .NET or Kicks) and software integration (implementing packaged software from technology vendors such as SAP, Oracle and Salesforce).

Observations

- Accenture is a clear winner. Some of its differentiators are that it has a large ERP practice, enhanced development capabilities based on a series of acquisitions and a reputation for being an early technology adopter.
APPLICATION DEVELOPMENT QUADRANT

Observations (cont.)

- IBM’s strengths are its incomparable IP repository, scale and global delivery experience.

- Cognizant, TCS, HCL and DXC Technology are all clear leaders based on their comprehensive industry-specific and domain-aligned capabilities.

- Wipro and Capgemini are most valuable for end-to-end ADM projects, but they are also worthy options for standalone AD projects. Both companies have portfolio depth, next-gen offerings and global scale.

- Atos has deep domain expertise but is limited by its scale in the U.S. market. There is a strategic push by the company to increase its U.S. presence.

Mindtree and Luxoft are development companies with high penetration of Agile clients and experience working in complex environments. They also demonstrate expertise in project-based AD work.

Additional Participating Providers

The following services providers were considered for this quadrant but were not positioned in the quadrant:

Birlasoft, Genesis10, ITC Infotech, KPIT, Mphasis, NIIT, QualiTest Group, Quinnox and Zensar.
Overview

Accenture’s 2016 U.S. application development services revenue is estimated at $3.7 billion. It has approximately 16,000 employees engaged in development and integration activities for clients in the U.S.

Strengths

Equally matched custom development and system integration capabilities: Accenture has more than 30 years of experience delivering development services. It manages more than 500,000 applications distributed appropriately across custom development, packaged software and emerging technology platforms.

World’s largest SAP practice: Accenture has more than 46,000 SAP-trained FTEs, including 10,000 in low-cost locations. The company has been involved in more than 1,000 SAP implementations and has 17 SAP solution innovation centers globally.

SaaS development and implementation leadership: Accenture has approximately 7,000 FTEs dedicated to SaaS-based development. It also has extensive experience implementing SaaS solutions from many major vendors, including Salesforce and Workday.

Focus on high-velocity business: Accenture has more than 10 years of Agile development experience with 1,600 agile certified FTEs. It also boasts more than 5,000 FTEs engaged in mobility solutions.

Caution

In end-to-end ADM engagements, Accenture brings together its breadth of services, business units and industry solutions, and thus its positioning remains unchallenged. However, in standalone development contracts it faces stiff competition from both midsize and large providers.

2017 ISG Provider Lens™ Leader

Accenture has a fairly comprehensive portfolio of development services, industry-specific tooling capabilities and technology-aligned delivery strength that is equally prevalent across the business application space, including custom software, ERP and SaaS.
Overview
Capgemini's application development services revenue from the U.S. market is estimated at $600 million for 2016. It has approximately 8,000 employees engaged in development and integration activities for U.S. clients.

Strengths
Digital and cloud capabilities: Capgemini has impressively grown its digital and cloud business via both inorganic and organic measures. In February 2017, it acquired Idean, a fast-growing digital strategy and experience design consultancy headquartered in Palo Alto. Capgemini has also introduced new digital and cloud services, such as Mov’InBlue a fleet mobility service, plus digital manufacturing and SAP migration to cloud services. Its digital and cloud services now form approximately 30 percent of its current revenue.

Accelerators: Capgemini has established Accelerated Delivery Centers (ADC) in the U.S., U.K., France, Poland and India. These facilities leverage more than 60 tools and accelerators (both industry standard and internally developed) to enable continuous integration and automated applications deployment. Examples of such tools or accelerators include the Continuous Delivery Orchestration Engine, App Swift, BDD Swift, RDV, RoboQ, App Builder and Cloud Swift.

Innovation: The Applied Innovation Exchange (AIE) is Capgemini's global initiative for applying innovation designed to enable enterprises to discover, contextualize, experiment with and draw value from innovations across the globe. Enterprises can leverage partners in AIE’s ecosystem (which includes technology vendors, startups and specialist firms) to execute new ideas and develop prototypes or proof-of-concept (POC) projects with short deadlines and limited budgets.

Caution
The percentage of clients that have adopted a DevOps-led delivery model is low compared to its peers. There is enough evidence to suggest that Capgemini has multiple instances of DevOps implementation, however, the penetration seems low.

2017 ISG Provider Lens™ Leader
Capgemini’s strength lies in its solution development and integration capabilities. It relies on a large pool of proprietary tools and longstanding technology partnerships.
Cognizant’s 2016 U.S. application development services revenue is estimated at $5 billion. It has approximately 60,000 employees (estimated) engaged in development and integration activities for clients in the U.S.

**Overview**

Cognizant's integrated, rapid and continuous delivery approach supported by its initiatives in the field of automation and digital will be the key to its success over the next three to five years.

**Strengths**

- **Standalone project delivery:** Unlike many other large providers, Cognizant is equally effective in executing end-to-end ADM and standalone application development contracts. It has a high win rate – approximately 75 percent – for the standalone application contracts it bids.

- **Custom vs. packaged:** Cognizant's AD revenue is distributed between custom development and packaged software integration work at a ratio of 55 percent to 45 percent. It is particularly strong in integrated SAP and Oracle packaged software products.

- **Agile Capabilities:** Cognizant OneAgility™ is an integrated framework for Enterprise Agility. OneAgility™ Lab, one of the core components is a platform comprising of industry products, open source toolsets, SaaS services and templates for best practices and tool chaining to rapidly enable modern IT delivery. The majority of Cognizant's new applications are being developed in agile mode.

**Caution**

Although Cognizant works on many project-based standalone development contracts, it generally prefers deals with a minimum total contract value (TCV) of $5 million.
DXC TECHNOLOGY

Overview

DXC Technology's (DXC) application development services revenue from the U.S. market is approximately $2.2 billion in 2016. It has approximately 14,000 employees engaged in development and integration activities for clients in the U.S.

Strengths

Comprehensive services portfolio: The company serves clients in different stages of maturity and has service philosophies and offerings tailored to each, ranging from traditional staff augmentation outsourcing on the low end to application integration covering SaaS, IoT and other systems on the high end. In between are a range of managed service and as-a-service offerings.

Assets: DXC has a rich pool of proprietary assets for application development, including integrated tool chains, APIs, standard reference architectures, automation reuse libraries and micro-services repositories.

Domain expertise: DXC has made a series of investments to further strengthen its domain capabilities. Highlights include gaining a solution to migrate applications to the public cloud through its strategic investment in Racemi in June 2016, creating a global ServiceNow practice under the Fruition Partners brand by acquiring UXC in March 2016 and Aspediens in July 2016 and gaining cloud migration planning and execution expertise by investing in Digital Clarity in March 2017.

Caution

There will undoubtedly be hiccups as CSC and HPE combine their operations and embark on new strategies. Integration and execution may pose challenges.

2017 ISG Provider Lens™ Leader

DXC, with the combined might of CSC and HPE, appears to have the pieces it needs to win in the market. How quickly it can fit them together will likely determine its success.
HCL TECHNOLOGIES

Overview

HCL’s application development services revenue was approximately $716 million from the U.S. market in 2016. Its U.S. clients are supported by 11,350 employees engaged in development and integration activities.

Strengths

Service modernization: HCL’s strength lies in large-scale service modernization programs focused on full-stack development. HCL leverages a platform-based approach to application development (Application Development Platform as a Service) and operational excellence IP, such as ALMSmart and DevOps.

Mode 2 capabilities: Approximately 60 percent of HCL’s application development engineers are engaged in “mode 2” activities, including emerging technologies and frameworks such as big data, mobility, BI and analytics, cloud, agile/DevOps/lean methodologies, e-commerce and more.

Strong SAP practice: Approximately a third of HCL’s ADM revenue comes from its SAP practice. It has more than 9,000 FTEs (globally) focused on SAP, which is proportionately much higher than most of its peers.

Caution

HCL is moving its focus away from staff. Thus, it may not be able to add much value to clients looking only to outsource development activities with the sole aim of achieving labor arbitrage.

2017 ISG Provider Lens™ Leader

HCL is one of the few providers that has the required scale and delivery presence to run large development projects and remain nimble and flexible enough to work on small project-based innovative engagements.
IBM

Overview

IBM's application development services revenue was approximately $2.4 billion in the U.S. market in 2016. The company has an estimated 16,000 employees engaged in development and integration activities for clients in the U.S.

Strengths

Strong SI capabilities: IBM has nine global SAP delivery centers hosting more than 13,000 engineers, 5,500 of whom are based in the Americas. IBM also has more than 12,000 dedicated Oracle consultants (including more than 7,500 for Oracle ERP) who average more than seven years of experience. IBM has developed more than 5,000 delivery acceleration assets for packaged software integration projects.

Big data and analytics leadership: IBM has approximately 9,000 FTEs dedicated to its big data and analytics practice, and nine analytics solutions centers around the world. It has made more than 20 acquisitions worth more than $15 billion to build on these capabilities.

Accelerated development: IBM provides industrialized and flexible models for accelerated application development. Its portfolio includes IBM design thinking, the IBM Migration Factory for bringing non-IBM clients into the IBM environment, cloud-based development platforms, the MobileFirst development platform, the API Economy marketplace, DevOps innovation services and garage-based development.

Caution

Given IBM's size and scale and the integration of its services division with other business units, it is very difficult for the company to stay flexible — which is why niche, local and specialist services providers have made strong gains in the ADM and other ITO service towers in recent years.

2017 ISG Provider Lens™ Leader

IBM capabilities across legacy, custom, packaged and mobile application development are among the most impressive of any provider. It is best suited for large, global, integrated or bundled engagements in which the company can leverage its proprietary tooling, methodologies and software to provide maximum value to the client.
TCS

**Overview**

TCS’ application development services revenue was approximately $1.9 billion from the U.S. market in 2016. It has approximately 13,100 development and integration employees serving U.S. clients.

**Strengths**

- **Agile delivery:** In keeping with the digital business trend, TCS has invested in Agile development as a major focus area. More than 70 percent of TCS’ application development work is Agile-based, and the company is following DevOps in almost all projects that practice Agile. TCS has a few large accounts in which it is using Agile methodologies for almost all application development work.

- **Significant presence across primary ERP categories:** TCS has more than 13,000 FTEs supporting 350,000 SAP users globally. It also has approximately 18,000 FTEs dedicated to Oracle products.

- **Analytics capabilities:** TCS is continuously investing in deep learning platforms by researching and piloting e-mail mining, voice analytics, natural language processing, robotics and services automation. It has a dedicated SAP center of excellence in Cincinnati, Ohio, that is focused on building applications for high-speed analytics and managing performance-intensive business transactions. TCS’ own analytics platform Customer Intelligence and Insights collects and analyzes large volumes of structured and unstructured customer and operational data in real time.

**Caution**

TCS’ digital business has grown approximately 39 percent in the past year to create almost 20 percent of company's overall business. However, it posted moderate growth in Q1 2017, mostly accredited to shrinking margins from traditional ADM deals.

2017 ISG Provider Lens™ Leader

TCS is continuously building solutions and products to solve specific business problems. Its differentiation strategy of developing vertically aligned platforms and accelerators will continue to serve the organization well.
WIPRO

Overview

Wipro’s application development services revenue from the U.S. market was approximately $830 million in 2016. The company has approximately 10,450 employees serving U.S. clients.

Strengths

Innovation and product development: Wipro Ventures is the strategic arm of Wipro tasked with driving non-linear growth, delivering client innovation, entering new markets and creating strong differentiation through partnerships and IP. The group’s activities include global innovation work with startups and pursuing investments in new and emerging technologies.

Cloud capabilities: Wipro provides solutions to consolidate clients’ application portfolios by moving them to platforms from vendors like Microsoft, Oracle and SAP, or by developing customized, intrinsic platforms. Wipro’s Cloud Integration Kit (CLiK) is an accelerator framework of methods, reusable components and best practices to help customers plan, strategize and execute cloud integration. The company reports it has four dedicated SAP HANA-powered labs located in India, the U.S., Germany and Australia. Wipro says it has 1,500 FTEs engaged in enterprise integration activities and 120 in cloud integration.

Tools/IP/Accelerators: In line with its “4 Cs” strategy (customer experience, cloud, cybersecurity and cognitive computing), Wipro has created intellectual property to span the application lifecycle, including the development stage. Some of its leading IP includes Digital Rigs, Cloud Migration Factory, Agile Base, DevNXT, Data Discovery Platform and the Security Intelligence Center.

Caution

Wipro has decided to move away from staff augmentation contracts. Thus, enterprise clients looking to outsource services in the staff augmentation mode should not consider Wipro.

2017 ISG Provider Lens™ Leader

Wipro has an excellent growth strategy in place for its application development practice where it is looking at creating domain-specific IP, investing in developing technology competency through organic and inorganic growth and building alliances with both established and start-up technology firms.
RISING STAR: ATOS

Overview
Atos’ application development services revenue is approximately $330 million from the U.S. market in 2016. It has approximately 5,850 employees engaged in development and integration activities for clients in the U.S.

Strengths
Digital capabilities: Atos has been pursuing digital as a key component to its overall ADM strategy. Some of the steps Atos has taken in that direction include its acquisitions of Bull, Unify and Xerox’s ITO business and forming a strategic alliance with EMC2 to bolster its cloud and EA portfolio and increasing R&D investment. Additionally, 50 percent of the graduates Atos hires are from Tier 1 universities.

Innovation: Atos has eight centers of excellence for deploying innovation to its 1,500 innovation specialists globally. It has invested approximately $180 million in R&D. Approximately 32 percent of the development workforce is engaged in “mode 2” activities (including big data, mobility, BI, analytics, cloud, Agile/DevOps/lean methodologies, e-commerce and other emerging technologies and frameworks). The company has 5,000 active patents.

Caution
After the Xerox IT acquisition, Atos cemented its position as a global provider. However, the majority of its large ADM clients are based in Europe. The company has a relatively moderate U.S. practice compared to its peers. However, it has the required scale to execute and implement projects of all sizes.
Luxoft generated approximately $400 million for application development services in the U.S. in 2016. It has approximately 9,500 development and integration employees serving clients in the U.S.

**Agile capabilities:** Luxoft follows a product-centric development model based on lean and agile principles. Currently, 70 percent of its projects run in Agile mode. It has more than 350 staff members with CSM/PSM/ICP certification and approximately 3,000 Agile practitioners.

**Custom development capabilities:** Luxoft has strong skills in UX, UI and human machine interfaces and embedded software development, primarily in the automotive sector. The company reports it also has built horizontal centers of excellence focused on big data, IoT and application security. Luxoft has created data visualization dashboards geared towards the BFSI sector. Approximately 80 percent of its revenue is generated from custom development activities. A large percentage of its development resources are engaged in emerging areas like mobility, data analytics, embedded systems, cybersecurity, user experience and IoT.

**CoE ecosystem:** Luxoft, through its newly formed division called Luxoft Digital has established centers of expertise across domains including mobile, data visualization, security, big data, cloud, IoT, Agile/DevOps, user experience and HMI, with focus on innovation-as-a-service and supporting key industry and business scenarios. It has a strong partner network and relationships that include Apple, Google (for Android), Tableau, Hortonworks, Microsoft, Amazon Web Services, Intel, Allassian, Pega, Spirent, Murex, Calypso and ESRI.

Luxoft’s narrative is intriguing yet simple. Its success lies in positioning itself as a provider of high-end IT solutions with a brilliant resource pool, onshore consulting and an offshore delivery footprint.

Approximately 85 percent of Luxoft’s revenue comes solely from application development services. It focuses on development work higher on the ADM and engineering technology stack. Thus, it is a specialist provider ideal for complex project-based work instead of commodity-driven services like application maintenance, ERP and BPO.
RISING STAR: MINDTREE

Overview

Mindtree's U.S. market application development services revenue was approximately $260 million in 2016. It has approximately 4,500 employees engaged in development and integration activities for clients in the U.S.

Strengths

Digital DNA: Approximately 35 percent of Mindtree's revenue comes from its digital services, with almost one-third of the employees engaged in digital work. Mindtree has established a digital center of excellence called Digital Pumpkin. It is an innovation workspace meant to apply the fundamentals of design thinking to conceptualize and solve enterprises' real-world challenges. It acts as a collaboration space for cross-functional vertical and domain teams, designers, account management teams and clients.

Cloud migration capabilities: Mindtree takes a holistic approach to cloud transformation — from advisory to build, and from migration to management. It enables companies to quickly migrate to the cloud and scale in a factory-based model, which ensures the efficiency and flexibility to align with business needs. It offers 12 cloud-based, industry-specific business platforms to enhance productivity, inclusivity and innovation.

Agile experience: Approximately 65 percent of all Mindtree application projects are running in Agile mode. It has more than 250 scrum masters, 180 SAFE practitioners and 175 DevOps engineers. It has established an Agile center of excellence in Gainesville, Florida. This high-tech ideation and communications hub focuses on areas such as Agile transformation, Agile consulting, Agile delivery and digital business.

Caution

Mindtree has limited focus on packaged software integration and derives just approximately 10 percent of its application development revenue from that activity. Mindtree's main focus is on ERP consulting, SAP HANA deployments and SaaS-based packaged software implementations.

2017 ISG Provider Lens™ Rising Star

Mindtree's strength lies in its next-gen application capabilities, selective industry focus, onshore innovation and a partnership-based approach to client engagements.
APPLICATION SUPPORT AND MAINTENANCE QUADRANT

Definition

Application support and maintenance (ASM) services support an application with minor enhancement services, bug fixes, patching, dot version upgrades, preventative maintenance, ad-hoc requests, upward compatibility for data and interfaces, helpdesk support and incident and problem management. Currently, application rationalization and modernization have become a de facto part of ASM services portfolios.

Observations

- Accenture has long-term experience working on modernization and transformation projects across industries. It is still ahead of the curve in adopting emerging frameworks, tools and technologies.
APPLICATION SUPPORT AND MAINTENANCE QUADRANT

Observations (cont.)

- IBM has vast experience running successful transitions and has been at the forefront of introducing automation and analytics in maintenance projects.

- All the Tier 1 Indian heritage firms – TCS, HCL, Wipro, Infosys, Cognizant and TechM – have the experience and ability to successfully manage and provide quantifiable gains in multi-year ASM contracts.

- NTT DATA has relatively low scale and service depth compared to other leaders. However, it has enough experience and size to run mid-to-large size contracts with guaranteed returns.

- LTI is among the very few midsize players that have the capability to execute end-to-end ADM contracts. It is working to increase its scale and offerings to cater to the varying needs of U.S.-based enterprises.

Additional Participating Providers

The following services providers were considered for this quadrant but were not positioned in the quadrant:

Genesis10, Infinite, Luxoft, Persistent, QualiTest Group.
Overview

Accenture's ASM services revenue in the U.S. market in 2016 is estimated to be $2.9 billion. It has approximately 14,000 employees providing support and maintenance services to clients in the U.S.

Strengths

Highly experienced in multi-supplier managed services contracts: Accenture has a well-proven service integration and management (SIAM) approach for governing and managing IT performance across partners. Its proprietary reporting and analytics tools provide a transparent view of resource utilization, service performance, delivery matrix and engagement health. It also has led many successful supplier consolidation assignments.

Versatility and flexibility in ASM engagement models: Accenture offers a range of pricing options, including fixed-fee, pay-as-you-go, app-based, output-based and outcome-based, to cater to enterprises with varying risk appetites, budgets and maturity levels. It has developed a robust framework for measuring outcomes that incorporate key parameters, such as throughput, quality, productivity and the reliability of applications under management.

Rich application modernization portfolio backed by industry knowledge: Accenture application modernization services include migration, rationalization, retirement, re-platforming, remediation and refactoring. Accenture's effectiveness in delivering these services is a function of its industry-leading technology alliances and industry-specific tooling and solutions. The company has more than 5,000 employees trained to work on application modernization projects.

Caution

Most of the Indian Tier 1 suppliers are productizing their ASM services by bundling a suite of ASM services with pre-committed timelines, pricing, proprietary tooling and assured cost savings. Of late, this space has become highly cost competitive.

2017 ISG Provider Lens™ Leader

Accenture’s core strength is its industry tooling, know-how and cloud migration services. It needs to further build on these capabilities to sustain its competitive edge in a market that is rapidly becoming commoditized. In 2016, Accenture rolled out its MyWizard intelligent automation platform that encapsulates business knowledge across 40 industries, which is a move in the right direction.
Overview

Capgemini generated approximately $1.1 billion ASM services revenue in the U.S. market in 2016. It has approximately 15,000 employees serving that market.

Strengths

**Next-gen ADM 3.0 platform:** Capgemini’s next-generation ADM platform is a business-process-oriented, industrialized approach to application management. This platform focuses on reducing short-term costs and building business-aware and future-proof IT landscapes. A core feature is its piecemeal approach to reengineering legacy systems.

**Scale, depth and experience:** ASM forms more than 50 percent of Capgemini’s overall ADM revenue. It has one of the most extensive services portfolios in the market and caters to all major industries. Capgemini has a very good client retention rate and decade-long relationships with many clients.

**Strong packaged software capabilities:** Capgemini has developed strong assets to support on-premise Oracle products, Oracle E-Business Suite, SAP products, PeopleSoft and Siebel. These tools and accelerators improve operational processes, reduce maintenance effort through standardization and automation and proactively detect issues for key processes.

Caution

Capgemini’s Automation Drive suite, comprised of a unified, open and dynamic set of automation tools, is impressive. However, its peers have been able to develop more highly evolved and effective platforms that yield a higher level of task automation and incident elimination.

2017 ISG Provider Lens™ Leader

Capgemini is focused on engaging clients via bundled/integrated ASM deals, including its Rightshore delivery model, proprietary platform solutions and partner software licenses. Such contracts will allow Capgemini to commit to guaranteed productivity and cost savings.
Cognizant's ASM services revenue in the U.S. market in 2016 is estimated to be $2.9 billion. It has approximately 42,000 (estimated) employees providing support and maintenance services to clients in the U.S.

Automation: Autonomic and cognitive technologies are central elements of Cognizant's overall service delivery strategy. This includes use of external platforms and Cognizant's proprietary platforms like HPA, ADPART, Automatika and Athena. It also has established strategic partnerships with cognitive tool vendors such as Arago, Automic, Ayehu and UI Path.

Frameworks: A set of industry standard and in-house tools underpins Cognizant's frameworks.

1. ZeroMaintenance approach: a solution that reduces non-discretionary spend to nil and optimizes discretionary spend.

Engagement models: With changing expectations from application outsourcing deals, Cognizant is proactively engaging with clients based on outcome-based and gain-share deals. These deals have started forming a respectable portion of Cognizant's overall ADM business.

Cognizant's long-term plan includes adopting more business-oriented pricing models, applying a zero-maintenance strategy for non-discretionary application maintenance spend and focusing on digital-led transformation deals. It is a plan that addresses the shift the entire sourcing industry is witnessing.
DXC TECHNOLOGY

Overview
In 2016, DXC Technology’s (DXC) had an estimated ASM services revenue of $1.7 billion and a support and maintenance services employee headcount of 13,000 for the U.S. market.

Strengths
Key focus on automation: Since 2015, DXC has invested nearly $5 million to build, deliver and deploy automation, robotics and AI analytic engines across its services delivery ecosystem. It has also ramped up its automation and AI center of excellence teams in the Philippines and India by recruiting 400 automation engineers.

Technology Independence and Investment Position: As a newly formed services company, unanchored from the direct hardware and software businesses of its predecessors, DXC’s technology independence is a differentiator for its clients. Their expanding ecosystem of diverse partners and their heavy investments in Mode 2 technologies further strengthens their independent position. This position is enhanced by their cloud native applications development, microservices, crowdsourcing, automation and bionics, and DevOps capabilities.

Flexible contracting: DXC offers ASM services through flexible engagement models, including as-a-service (aaS), pay-as-you-go and various risk/reward sharing models depending on client needs. It is proactively advocating outcome-based pricing models for all its next-gen application outsourcing deals, which currently comprise approximately 12 percent of its business.

Caution
DXC is currently undergoing a significant degree of reorganization, and a comprehensive integration planning program is underway. The value proposition from the combined portfolios and expertise of HPE and CSC remains to be seen.

2017 ISG Provider Lens™ Leader

DXC has the capability to leverage strong industry assets, partner ecosystems, world-class talent, extensive provisioning and flexible pricing models to meet growing client needs.
HCL TECHNOLOGIES

Overview
HCL’s ASM services revenue was approximately $875 million in the U.S. market in 2016. It has approximately 13,650 employees providing support and maintenance services to clients in the U.S.

Strengths

Strong on automation: In the last 10 years, HCL has leveraged a combination of homegrown IT automation tools and best-of-breed third-party tools. One such offering is DRYiCE, its automation and orchestration framework. The framework includes 40 interconnected modules that can be deployed on an as-needed basis. Differentiators for HCL are its choice of modules, no-lock-in periods and guaranteed outcome for the level of automation achieved after deployment.

“Alt ASM” framework: HCL’s maintenance service line, the “Alt ASM,” encapsulates some of the best AMS practices in the market. The homegrown Prizm tool – which originated as a portfolio rationalization solution – underpins much of Alt ASM. It helps to take proactive decisions such as application retirement and consolidation based on inputs from owners and users, leading to considerable reduction of unwanted application footprint.

Ability to engage in outcome-based models: Approximately 63 percent of HCL’s revenues are outside of T&M models. HCL executes commercial arrangements specific to the needs of its clients based on a series of workshops and discussions.

Caution
HCL has more delivery experience in selected vertical markets, although it sells to most industries. Until 2011, most of its revenue came from the manufacturing, BFSI and healthcare sectors. Since then it has increased its presence in consumer services and the public sector.

2017 ISG Provider Lens™ Leader
HCL’s value proposition goes beyond technical capabilities to include soft factors like contractual flexibility, guaranteed outcomes and commitment to the future state of operations.
**Overview**

IBM had an estimated $2.4 billion in ASM services revenue from U.S. clients in 2016. Those clients were served by approximately 15,500 support and maintenance services employees.

**Strengths**

*Industry-specific knowledge and transformation experience:* IBM has proven application design and system integration services experience across a broad spectrum of industries, including financial services, communications, industrial and distribution.

*Integrated services and governance model:* It has a well-established service integration and management (SIAM) practice. With leading industry practices, project accelerators and project measurement tools stemming from its global capabilities and experience, IBM provides a high-quality, low-risk implementation.

*Transition experience:* IBM has a dedicated Transition Competency organization that conducts more than 300 engagements and transitions more than 4,500 applications every year.

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**Caution**

IBM's solution pricing is on the high side. Thus, it is advisable to engage IBM for ASM projects that are complex in nature and will take advantage of the provider's significant transformational capabilities.

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**2017 ISG Provider Lens™ Leader**

IBM’s experience running large-scale managed services contracts is unparalleled. IBM is especially effective in ASM deals in which the client is looking to transform and modernize the core application portfolio.
Overview

Infosys ASM services revenue was approximately $1.1 billion from the U.S. market in 2016. It has approximately 21,500 employees providing support and maintenance services to clients in the U.S.

Strengths

Transformation capabilities: Infosys takes a three-tier approach (innovate, rationalize and modernize) to its transformation-oriented deal. Infosys offers clients an automated and industrialized maintenance set up that promises shorter transformation turnaround timelines.

“Zero Distance” initiative: Project team members discuss the areas of improvement identified in a project and suggest workable solutions with quantifiable results. After mutual consent, the changes are incorporated at the process and system levels. This approach adds value beyond contractual constructs. Currently, 80 percent of the company’s ASM projects have used this “Zero Distance” approach.

L3 automation: Infosys' Nia AI platform can considerably reduce effort for L3 engineers involved in application enhancements and bug fixes. Nia's natural language processing capabilities, text analytics and machine learning techniques can be applied to automate bug localization, root-cause and impact analysis, and test-plan generation. Automation can reduce the effort for those activities by almost 60 percent.

Caution

Compared to many peers, Infosys has been a laggard in aggressively pursuing next-gen application deals. Given that ASM contracts make up a significant portion of its revenue and represent a shrinking share of discretionary spend by clients, the company needs to be more aggressive in its go-to-market strategy to sustain growth.

2017 ISG Provider Lens™ Leader

ASM work has always been a sweet spot for Infosys and currently contributes almost 60 percent of the overall application practice revenue. With the inclusion of Nia, Infosys has gained a much-needed boost required to differentiate itself in the U.S. market.
Overview

NTT DATA’s (NTT) revenue for ASM revenue was approximately $330 million in the U.S. market in 2016. It has approximately 3,300 employees providing support and maintenance services to U.S. clients.

Strengths

Comprehensive ASM delivery framework: NTT addresses all phases of application lifecycle management, from strategic thinking to ongoing optimization via its Dynamic Application Management and Outsourcing solution, DynAMO. The solution encompasses knowledge and expertise from NTT’s enterprise-wide units and is designed to support various aspects of an engagement, including collaboration, business alignment, incident prevention, portfolio optimization and innovation, and can adapt for continuously changing operating models.

Presence across service towers: NTT has strong presence in various service towers including data center, private cloud, end-user computing and managed network services. Hence, it can be a suitable option for midsize to large, integrated deals.

Caution

NTT needs to invest more to develop technology- and industry-specific proprietary solutions.

2017 ISG Provider Lens™ Leader

NTT has a standardized approach to ASM and can be a fit for clients looking to save costs by optimizing their application production environment.
**Overview**

TCS generated an estimated $4.6 billion from the U.S. ASM services market in 2016, which it served through approximately 31,800 employees engaged in providing support and maintenance services.

**Strengths**

*Investment in R&D:* The success of its automation and financial services platforms Ignio and BaNCS has given TCS the confidence to make further R&D investments. The company is dedicating non-billable teams to work in its R&D centers with a long-term focus on developing intellectual property that can be monetized through additional offerings. To maximize innovation potential, TCS offers an environment that encourages collaboration through the TCS Co-Innovation Network (COIN™), which provides access to an ecosystem of various TCS customers, entrepreneurs, industry and academia experts.

*Automation focus:* TCS has a holistic approach to automation; every single unit responsible for delivery has responsibility to include automation. TCS is continuously investing in developing new IP, tools and platforms. These developments have led to Digitate, a dedicated unit to develop cognitive products, and TCS MasterCraft, a set of software automation tools that enable businesses to optimize their IT service delivery processes.

*Global Delivery:* TCS has one of the broadest and biggest delivery networks, with more than 100 global, regional and local centers. Customers can access resource pools and skills from across the globe along with time zone compatibility.

**Caution**

This market has become highly commoditized, with incumbents losing some or all of their scope to new competitors more than half the time when contracts are put up for competitive rebid. Because TCS is one of the biggest players, it needs to continuously evolve to win new business and retain existing clients.

**2017 ISG Provider Lens™ Leader**

TCS seeks to capitalize on the next wave of outsourcing expansion by pursuing a non-linear growth strategy (wherein revenue growth is not dependent on a proportionate rise in hiring). It is pursuing that by industrializing certain aspects of application maintenance, developing domain expertise to seek differentiation and investing in R&D facilities staffed with non-billable teams to develop intellectual property.
Overview

Tech Mahindra's (TechM) ASM services revenue was approximately $1.2 billion in the U.S. market in 2016. It has approximately 19,200 employees that provide support and maintenance services to clients in the U.S.

Strengths

Application migration competency: TechM has dedicated consulting and enterprise architecture (EA) practices to provide application portfolio rationalization services supported by home-grown tools and templates. It has helped more than 500 customers migrate to open platforms, packaged solutions and external-hosted platforms. Some of the key platforms it has worked with include CareXa, Socio, CartFULL, Cloud Aggregation Platform (CAP), MDS, Modular Enterprise Managed Services (mEMS) framework, Tecnico and PRISM.

Managed services toolkit: The SureSmart Toolkit provides a set of TechM-developed tools that incorporate robotic process automation (RPA), self-learning, self-healing and AI. The tools can be integrated with third-party products to achieve high-end automation beyond just task or process automation. The TechM SureSmart Toolkit for Managed Services is powered by three main tools: CUBES, which provides application, infrastructure and network support automation; UNO, a set of RPA solutions; and TACTiX, a set of industry-specific AI applications for business and IT operations.

Multiple engagement models: TechM offers multiple flexible pricing models including T&M, fixed-bid, ticket-based, application-based, outcome-based (including gain share and incentive models), shared risk-reward pricing, transaction-based pricing and a utility or XaaS model. It also is open to exploring alternative models with clients, such as business outcome-driven, flat-rate card, risk ownership through unit pricing, IP monetization and joint ventures.

Caution

TechM has made progress in infusing automation elements (including RPA, AI, machine learning) in its key projects. However, its peers have similar solutions in place. Some have even gone a step further to develop more complex and impactful automation solutions using cognitive computing principles. Some examples of such solutions include Infosys' Nia and Wipro's Holmes.

2017 ISG Provider Lens™ Leader

TechM application modernization capabilities, innovation focus, and next-gen capabilities make it a compelling choice for clients looking to move forward on the maturity curve.
Wipro

Overview
Wipro's ASM services revenue was approximately $1.1 billion in the U.S. market in 2016. It has approximately 14,300 employees working in ASM for U.S. clients.

Strengths

Managed services expertise: Wipro has developed a robust managed services model called ServiceNXT that is predictive, proactive and highly automated. ServiceNXT comprehensively addresses infrastructure, application and security IT operations requirements in an integrated or standalone mode. Fifty-four percent of Wipro's ADM revenue is generated from managed contracts.

Cognitive capabilities: Wipro's HOLMES cognitive solution leverages semantics, machine learning, pattern recognition and knowledge-modeling technologies to enable solutions that add valuable context, intelligence and automation to enterprises. Holmes application types include cognitive process automation, intelligent virtual agents, knowledge process systems, visual computing and human interface, autonomous applications and anticipatory and predictive systems.

Transformation capabilities: Wipro's transformation approach is based on business value realization. It features domain expertise for KPI-based transformation and process classification, a show-and-tell approach to depict the future state of business, a bi-modal execution model, more than 100 tools and accelerators and an alliance with SAP for innovation.

Caution
Wipro's ASM revenue growth in the past three years has been moderate, at less than 6 percent.

2017 ISG Provider Lens™ Leader
Wipro has a mature managed services practice with an equally strong portfolio of handling off-the-shelf and custom applications. In recent years, it has made tremendous progress in augmenting its ASM offerings with automation and transformational capabilities, thereby guaranteeing quantifiable business outcomes.
RISING STAR: LTI

Overview

In 2016, LTI had approximately 5,700 employees providing ASM services to U.S. clients and produced estimated revenue of $292 million.

Strengths

**IP-led growth:** LTI leverages its proprietary Mosaic platform that provides a ready-to-use reference architectural framework and integrates LTI proprietary tools and widely adopted open source and third-party tools. Mosaic is a highly modular platform that introduces components like Mosaic Automation, Mosaic Things, Mosaic Experience, Mosaic Decisions and Mosaic Artificial Intelligence in managed contracts as required. This modular approach gives LTI flexibility and scalability for engaging with clients.

**Engineering Legacy:** LTI shares a strong relationship with its parent company L&T Group, a $16 billion conglomerate serving the engineering, construction, financial and technology sectors. This relationship has helped LTI create robust vertical-specific offerings. LTI also frequently collaborates with L&T Group's technology division to develop technology-driven solutions.

**Two-tier approach to transformation:** LTI is pursuing a dual strategy. First, it has a strategic focus to renew and build on offerings like managed services, enterprise solutions, IMS and testing. Second, it seeks to build significant strength in five areas: digital, analytics, IoT, cloud apps and automation. This dual strategy, coupled with its industry experience and domain expertise, provide end-to-end transformation capabilities.

Caution

LTI generates almost 38 percent of its ADM revenue from staff augmentation services, which is very high percentage for a provider that is designing its offerings around next-gen ADM. It needs to increase its number of managed services engagements to reap real benefits from the investments it is making to create next-gen technologies.

2017 ISG Provider Lens™ Rising Star

LTI is among the very few midsize players that can provide end-to-end ADM services. Its experience working with both packaged and custom software, running multi-year maintenance deals and a strong testing practice make it an attractive alternative to large multinational providers for managed AMS contracts.
APPLICATION TESTING QUADRANT

Definition

Application testing identifies bugs to assure the successful execution of an application. Testing also ensures application code meets its functional and technical requirements from the design and development perspectives. Application testing is used across the application lifecycle, including the build and operate phases.

Observations

- All the leaders identified in this report have a high degree of automation across testing phases and offer a consultative approach to testing.
- IBM and TCS have impressive depth and breadth of services with proprietary tools and accelerators across domain and industry verticals.
Infosys, TechM, DXC Technology, Wipro, Cognizant and Accenture are prominent leaders in the space with dedicated testing practices. All have domain expertise and an extensive partner network.

Cognizant has local presence and scale. Its proprietary tools and frameworks cover the entire testing value chain.

CGI has rich testing experience offering flexible contracting models with delivery proximity to U.S.-based clients.

With its next-gen approach to testing, HCL is showcasing impressive growth. Mindtree has an Agile-based approach to testing, is engaging in co-innovation with clients and has displayed high flexibility in its testing assignments.

Atos and Capgemini have domain expertise, highly trained resources and good alliances in the testing space.

The following services providers were considered for this quadrant but were not positioned in the quadrant:

Fujitsu, Genesis 10, KPIT, Luxoft, Persistent, Quinnox, Unisys and Zensar.
Overview

Accenture’s 2016 revenue from application testing services in the U.S. market was approximately $1 billion. The company has approximately 35,000 FTEs globally engaged in providing testing services to U.S. clients.

Strengths

- **Industry-oriented global engagements**: Accenture has more than 30 centers strategically located across the globe. Eighty percent of the FTEs engaged in testing services have industry specialization. The combination makes Accenture an ideal provider for multi-region engagements that require deep industry expertise.

- **Vertical expertise**: Accenture has a library of approximately 35,000 industry-specific use cases. It has presence across almost all industries but is particularly strong in BFSI, healthcare, manufacturing and communications.

- **End-to-end capabilities**: Accenture’s testing services incorporates assessment, strategy, test planning, execution, quality improvement and reengineering. The company is positioned to provide value at each node of the process chain.

Caution

Although Accenture provides independent testing services to midsize players, the value that Accenture can bring in such contracts is relatively low.

2017 ISG Provider Lens™ Leader

Accenture is an ideal partner of choice for large multi-region testing engagements with deep industry expertise.
Overview

Atos’ application testing services revenue from the U.S. market in 2016 is estimated to be $125 million. It has approximately 1,200 FTEs providing testing services to clients in the U.S.

Strengths

**Skilled resources:** Atos has approximately 9,000 testing resources across the globe with more than 85 percent certified in either CSTE, ISTQB, CTM or ITIL. These resources are organized by domain centers of excellence and technology centers of excellence to foster a strong focus on innovation. Atos also has approximately 550 dedicated mobile testers.

**Strong partnerships:** Alliances with leading test automation companies and specialist service providers help meet various enterprise testing requirements. A few of Atos’ major testing partners include Perfecto Mobile, Odin Technology, Infostretch, Smartesting and Neotys.

**Multi-industry focus:** Atos has more than 30 years of testing experience with clients in multiple industries, including financial services, public sector, health, energy, utilities, manufacturing, retail, transportation, telecom, media and technology.

Caution

The majority of Atos’ resources are based in Europe, so U.S.-based clients have limited access to onshore resources. In addition, clients do not have a lot of flexibility to opt for offshore-heavy models to save costs.

2017 ISG Provider Lens™ Leader

Atos has commendable technical expertise spanning multiple industries but is limited by its presence for U.S.-based clients.
Overview

Capgemini's application testing services revenue in the U.S. market in 2016 is estimated at $280 million. The company has approximately 3,700 FTEs providing testing services to clients in the U.S.

Strengths

Good coverage across deal bands: Capgemini's testing engagements are well distributed among deal sizes, ranging from $1 million to greater than $20 million.

Strong in BFSI: Most of Capgemini's testing services clients as measured by value and volume belong to the banking, financial services or insurance industries.

Strong IP: Capgemini's proprietary tools, including SmartQA, iTAP, SmartFoundry, Command Center and NFT Hub, help bring value across different testing stages by ensuring both agility and quality.

Caution

Capgemini's average automation achieved across test phases including system testing, regression testing, compliance testing, load testing, and user acceptance testing is less than 30 percent, which is well below the industry average.

2017 ISG Provider Lens™ Leader

Capgemini is a good fit for clients looking for managed testing services with a healthy mix of offshore/onshore delivery.
Overview

CGI received an estimated $350 million in revenue for application testing services in the U.S. in 2016. Its resources for supporting U.S. clients include an estimated 1,800 FTEs.

Strengths

Automation: CGI has automated more than 65 percent of the tasks across test phases. The company follows an industrialized approach to testing via its “Automation Test Service Management (ATSM)” automation testing framework. ATSM and CGI's investment in other tools and frameworks have helped the company achieve faster time to market and improved application quality.

Flexible contracting models: CGI offers an array of engagement models from staff augmentation to testing-as-a-service. It also offers an outcome-based pricing model.

Proximity: CGI is headquartered in Canada and has approximately 15,000 application outsourcing FTEs employed in North America. Through its global delivery models, it has additional offshore capabilities. Thus, CGI is well positioned to offer hybrid delivery models to meet client requirements.

Caution

CGI has been reporting low revenue growth for the past two years in an otherwise growing market. Its testing resources strength has also remained stagnant since 2014.

2017 ISG Provider Lens™ Leader

CGI has a robust testing framework that delivers impressive real-world results. It is continuously adopting a customer-centric approach, where it is open to engagement through long-term partnership models or by providing cost effective as-a-service offerings.
Cognizant's 2016 revenue from application testing services in the U.S. market was approximately $1.4 billion. It has approximately 23,000 FTEs (estimated) providing testing services to clients in the U.S.

**Automation leadership:** Cognizant has been able to achieve the industry-leading level of approximately 65 percent of automation across test phases.

**Delivery support:** Cognizant has more than 50 in-region development centers, 10 digital assurance labs and other resources for localized QA delivery.

**IP-based solutions:** Cognizant has one of the largest sets of testing products for varying client needs across the test management lifecycle. A few of its major products include ADPART (which automates test design), “fastest” (the brand name for a cloud-based, on-demand software testing service), Tebot (for automated end-to-end testing of wearables), MINT (platform for mobility testing) and SPRITZ (a scriptless test automation platform).

**Caution**

Most of the QA tools and platforms Cognizant has developed are industry agnostic, with exceptions for healthcare and, to some extent, the financial industry. The company could invest more to develop industry-specific IP to increase its win rate for contracts that require deep industry expertise.

Application testing is one of Cognizant’s core strengths and helps position it as a leading ADM provider with true end-to-end transformation capabilities.
DXC TECHNOLOGY

Overview

DXC Technology (DXC) generated approximately $700 million in revenue from the U.S. application testing services market in 2016. It has approximately 4,000 FTEs that work in testing services in the U.S.

Strengths

Automation platform: The Enterprise Test Automation Platform (eTAP) consists of an executive dashboard, test planning toolkit, reusable automation assets, test design toolkits, test data, test execution and test management, plus packaged application accelerators. The platform covers the full testing lifecycle and provides reporting via single interface. This framework has helped DXC achieve up to a 40 percent reduction in automation cost for more than 60 engagements.

Domain and vertical integration: DXC has a wide range of testing services (including test consulting, application testing, application security testing, enterprise solution testing and emerging technology testing) that are mapped to industry-specific tools, reusable scripts and accelerators. DXC has specialized vertical solutions for the banking, insurance, healthcare, manufacturing, energy, CPG and retail industries.

Test center of excellence (TCoE) services: Based on DXC’s deep knowledge of frameworks and industry specialization, its TCoE services support full-fledged testing function reorganization for clients.

Caution

Before the formation of DXC, HPE’s testing organization worked predominantly with its own set of testing products that were developed by HP’s software division. Going forward, the resource pool will need to be trained and acquaint itself with various third-party toolsets.

2017 ISG Provider Lens™ Leader

DXC is an ideal partner for enterprises that are looking for any of the following competencies: testing division overhaul, cloud-based as-a-service expertise, global managed services contracts and industry-specific expertise.
HCL TECHNOLOGIES

Overview

HCL Technologies' (HCL) revenue for application testing services in the U.S. market in 2016 was approximately $243 million. It has approximately 4,000 FTEs engaged in providing testing services to clients in the U.S.

Strengths

**Quality as a Service:** QaaS is HCL's next-gen approach to testing and has provided confirmed benefits, including reducing cost, defects and time to market for clients. HCL's Quality as a Service approach has three core aspects to its value proposition: just-in-time (via use of reusable, decoupling, core and flex models), industrialized processes (which is a platform approach to testing that includes automation and analytics) and the use of Six Sigma methodology. Other elements in the QaaS approach include HCL's test center of excellence and its tools-as-a-service offering.

**Agile and flexible engagement models:** HCL works on a range of flexible models including pay-per-use and lab-on-rent that enable rapid ramp up/ramp down of resources to provide scalability.

**Proprietary platform:** Test Factory in a Box (TFiB) is HCL’s flagship testing service delivery platform. It acts as a one-stop shop for all enterprise testing needs. Testing services are set in motion through a target operating model powered by tools and guided by a detailed workflow. The workflow seamlessly integrates process, tools, templates, guidelines, utilities and allied organizational enablers.

Caution

Most of HCL’s proprietary frameworks and tools are industry agnostic. Thus, the company may not be a good fit for testing projects that require deep industry expertise.

2017 ISG Provider Lens™ Leader

The biggest strength of HCL’s business assurance and testing services lies in its ability to quickly deliver solutions with flexible contracting models at a relatively low cost.
IBM's application testing services revenue from the U.S. market is estimated at more than $1 billion for 2016. IBM has approximately 7,600 FTEs engaged in providing testing services to clients in the U.S.

**Strengths**

- **Market-leading software platform:** The IBM Rational Test Workbench offers software testing tools for a DevOps environment including API testing, functional UI testing, performance testing and service virtualization.
- **Strong in emerging areas:** IBM has strong capabilities around cloud-based testing and leveraging Watson's cognitive capabilities for adaptive testing and decision-making.
- **Breadth and depth:** IBM's testing portfolio includes a wide range of services, from design to run. Services extend to legacy systems, packaged applications, web applications and mobile applications. IBM also has industry-specific testing solutions and offers an as-a-service model.

**2017 ISG Provider Lens™ Leader**

IBM has a fairly comprehensive software testing portfolio. It is an excellent choice for large clients that require support from multiple locations and across multiple technologies. IBM also is valuable for clients that are looking for a testing provider with deep analytics expertise.

**Caution**

Although IBM has clients across deal bands ranging from $1 million to more than $20 million, it may not be suitable for simpler testing projects given its higher price points.
Infosys is an ideal choice for clients looking to run their testing operations in a managed mode with full life-cycle management. It also provides flexibility to contract through innovative and flexible models.

**Strengths**

- **Flexible contracting:** Besides resource-based pricing, Infosys offers its Test Unit Estimation model specifically for functional testing. It also uses alternative contracts like output- and outcome-based pricing models.

- **Capabilities in emerging areas:** Infosys has developed capabilities for testing big data, mobility and cloud. These capabilities are offered as managed services and through an as-a-service model.

- **IP toolset:** Infosys has an impressive proprietary toolset for automation, data warehousing, DevOps and machine learning. Some of its notable frameworks and tools include Infosys API Test Platform (iFAST), AI-led QA Test Suite Optimizer, Infosys DevOps Platform (IDP) and Infosys Data Warehouse Testing Solution (Peraware).

**Caution**

Infosys provides testing as part of large ADM engagements and as a standalone service. However, for standalone deals, it mostly focuses on mid-to-large deals (>$2 million engagements) or contracts that cover the entire testing lifecycle.
Mindtree is focusing on next-gen testing contracts that emphasize creating a seamless testing environment and on customer centricity across a connected network of mobile and smart devices, business applications and other media.

Standalone testing provider: Approximately 80 percent of Mindtree's existing contracts are standalone wins, a number that reflects and affirms dedicated focus on this practice.

Agile and automation: Mindtree has growing expertise in Agile and DevOps environments and 45 percent of its current testing projects are running in Agile. The company has been able to automate approximately 64 percent of all tasks across test phases.

Proprietary tooling: Mindtree has invested heavily to develop differentiated testing offerings that are in tune with today's dynamic test environment. Its major platforms include the Dynamic Test Engineering Platform (DTEP), a unified platform for continuous testing that provides centralized access to several other proprietary resources and accelerators, and MIST, a complete scriptless E2E unified automation framework enabling faster script development and test execution for web, desktop and mobile.
TCS

Overview
In 2016, TCS generated approximately $1.6 billion in revenue from the U.S. application testing services market, which it supports with an estimated 16,000 FTEs.

Strengths

Accelerated testing: TCS has a rich set of tools and frameworks to automate the test environment, resulting in accelerated delivery. Examples include: Non-Prod Environment Tracking and Release Automation (NETRA) for automating application testing, integration and deployment; OMNI, a unified test automation solution for mobile and web services; and the eSwift reusable test automation framework that leverages HP business process testing (BPT) to automate testing of enterprise apps like Oracle ERP, SAP, Siebel, PeopleSoft and Salesforce. TCS has been able to achieve more than 60 percent automation across test phases through such tools.

Next-gen testing contracts: TCS is taking a transformational approach to testing by which it assesses process maturity and decides on methodology through its TIARA proprietary framework. TCS commits to a desirable end-state, suggests next-gen commercial models like pay-per-use and conducts in-depth assessments and rollouts for frameworks, tooling and automation, test data and environment, and digital assurance services. It claims customers can save an average of $2 million by following this approach.

Global Delivery Model: TCS has delivery centers and centers of excellence distributed across regions but they are unified in processes, automation tooling and training to ensure a uniform delivery experience. Through this model, it is able to attract different skills and resources from different regions while simultaneously ensuring optimization.

Caution
TCS has very strong assurance services in banking, insurance, retail, communications and healthcare. However, it has considerably fewer clients in other industries.

2017 ISG Provider Lens™ Leader

TCS offers an impressive portfolio of frameworks, tools and platforms for end-to-end transformation with assured cost savings and effort reduction, thereby, providing competitive advantage to clients.
TECH MAHINDRA

Overview
Tech Mahindra’s (TechM) application testing services revenue was approximately $722 million from the U.S. market in 2016. It has approximately 13,000 FTEs providing testing services to clients in the U.S.

Strengths
Highly automated: TechM is able to automate almost 65 percent of processes across test phases. It also has its own test automation framework IP integrated with open source DevOps tools to meet the needs of buyers seeking integrated offerings.

Assets: The company has developed frameworks and tools to gain expertise across the testing lifecycle. Some of these are e-Convergence, its test automation framework IAF, Near Zero Touch Automation (NZTA), its integrated test and defect management framework OPTIMA, and a quality check to HP application migration toolkit.

Industry expertise: TechM is particularly strong in a few of its traditional industry segments like telecommunications, automotive and BFSI. It also has created multiple solutions in the testing domain aligned to these industries.

Caution
TechM has a large testing practice with a solid IP repository. However, in the past it has been perceived as a Tier 2 provider. The company needs to create more awareness about its positioning as a leading Tier 1 provider. It also needs to enhance its online and social media presence.

2017 ISG Provider Lens™ Leader
TechM can be a good fit for clients that are looking to optimize their testing practice or create internal centers of excellence supporting multiple client locations.
**Overview**

Wipro’s application testing services generated revenue of approximately $419 million in the U.S. market in 2016. It has approximately 8,400 FTEs engaged in providing testing services to clients in the U.S.

**Strengths**

**Automation led-testing:** Wipro has made investments in automation to develop tools that can automate and accelerate the testing environment and maintain quality. Two of the primary tools include NXT, a next-generation QA delivery hyper-automation platform applicable across the testing lifecycle, and Assure, a next-generation IT wellness platform designed to improve predictability in application quality, reduce cost of quality and build self-healing quality processes. Wipro has been able to automate more than 60 percent of tasks across test phases.

**Resource skills:** Testers at Wipro are trained to work on several third-party automation tools/frameworks including Selenium, QTP, Cucumber, Junit, Maven, Testng, Lisa, TestComplete, Watir, Visual Studio Test Professional, SoapUI, FitNesse, eggPlant, Appium and Perfecto Mobil.

**Caution**

**Offshore-heavy model:** Only 15 percent of Wipro’s application resources are onsite. Thus, Wipro can face challenges with enterprises that are looking for a higher percentage of resources onsite.

**2017 ISG Provider Lens™ Leader**

Wipro’s heavy investments in automation and IP development, skilled resource pool and complementary next-gen offerings make it a good fit for large U.S.-based customers looking to achieve enterprise agility to gain competitive advantage.
**END-TO-END ADM - BFSI QUADRANT**

**Definition**

End-to-End ADM – BFSI industry – This quadrant highlights services providers that can execute all elements under the ambit of application outsourcing, including consulting, development, support, maintenance and testing for clients in the banking, financial services and insurance sector.

**Observations**

- Cognizant and TCS, with predominant focus on the BFSI industry, compete well against the Western-heritage Tier 1 services providers Accenture and IBM. All four have differentiated offerings across the change and run functions and have presence across sub-segments of the BFSI industry.
HCL, Capgemini, Infosys and Wipro get most of their clients from the BFSI industry. These providers have developed proprietary solutions and accelerators for clients across the ecosystem. All of these providers have expertise in implementing and managing third-party software.

DXC Technology, with the combined might of CSC and HPE, has impressive transformational capabilities.

Virtusa is a specialist firm in the financial domain that employs a consulting-led approach to transformation. Post the Polaris acquisition in 2015, it has been successful in winning multiple large deals in the BFSI industry.

LTI has a deep focus on BFSI with impressive toolsets, strong consulting capabilities and marquee clients in the sector.

The following services providers were considered for this quadrant but were not positioned in the quadrant:

Atos, Birlasoft, Ciber, Fujitsu, Genesis 10, Infinite, ITC Infotech, KPIT, NIIT, Persistent, QuaTest Group, Quinnox, Softtek, Unisys and Zensar.
Overview

Accenture's ADM services revenue from BFSI clients in the U.S. is estimated to be $1.5 billion for 2016. It has approximately 7,000 ADM FTEs catering to BFSI clients in the U.S.

Strengths

**BFSI platform expertise:** Accenture is among the few providers that are equally capable of consolidating their clients' application landscapes on external platforms like SAP HANA or Oracle, or of building custom, intrinsic platforms. Accenture can do this because of its partnerships with top-level technology providers and its industry know-how.

**ADM – BPM synergy:** Being a leader in the BPM space for finance and accounting, Accenture brings deep platform integration services and has been fairly successful in developing complementary business services for BFSI companies.

**Digital capabilities:** Accenture recently has won many large digital contracts on the strength of its strong portfolio of mobility services, cloud capabilities, technology stack and consulting heritage.

**Automation:** Accenture is rapidly progressing in its ability to offer automation solutions by acquiring technology capabilities to serve its BFSI clients. In 2016 Accenture partnered with IPSoft to launch the Accenture Amelia practice for virtual agent technology deployment to clients in the banking and insurance industries.

Caution

Most of Accenture's large BFSI clients fall in the change-the-bank (CTB) category, which means their projects focus on generating new revenue streams via disruptive technologies. Over the last five years, large India heritage firms such as TCS and Cognizant have surpassed Accenture in terms of ADM revenue from the U.S. BFSI market. The primary reason is that these companies focus more on run-the-bank (RTB) services, i.e. saving cost, increasing profitability and maximizing efficiency. In spite of CTB being a high growth area, financial institutions still spend more on RTB services.
Currently, India is Capgemini's major offshore delivery location. As Capgemini looks to further grow its BFSI business in the U.S. market, it needs to scale up its delivery options in other locations.

End-to-End ADM - BFSI

Capgemini generated revenue of an estimated $500 million in ADM services from BFSI industry clients in the U.S. in 2016. It serves the space with approximately 5,900 U.S.-based ADM FTEs.

Overview

Capgemini has a well-distributed client base across deal bands. However, approximately 34 percent of its deals generate more than $20 million in annual revenue. The scope of these deals include end-to-end ADM services from consulting to transformation and operations.

Partnership: Capgemini has longstanding partnerships and experience with many leading software vendors in the financial sector including FLEXCUBE (banking), Guidewire (insurance), Temenos (banking), Calypso (capital markets), EbaoTech (insurance), FirstData (cards) and Clear2Pay (payment). The partnerships allow Capgemini to work on a wide variety of engagements with a tailored approach.

Domain-specific IP and tooling: Capgemini has developed proprietary solutions for each sub-domain in the BFSI industry. For example, PriceLab and TRIVEO are meant for banking, Capitol for capital markets, and Insurance Connect for insurance. It also has broader ADM platforms that help optimize projects applicable to the BFSI sector, such as Command Center and Revitalization Factory. Thus, Capgemini maintains a highly comprehensive solutions portfolio.

Strengths

Ideal for large transformation projects: Capgemini has a well-distributed client base across deal bands. However, approximately 34 percent of its deals generate more than $20 million in annual revenue. The scope of these deals include end-to-end ADM services from consulting to transformation and operations.

Partnership: Capgemini has longstanding partnerships and experience with many leading software vendors in the financial sector including FLEXCUBE (banking), Guidewire (insurance), Temenos (banking), Calypso (capital markets), EbaoTech (insurance), FirstData (cards) and Clear2Pay (payment). The partnerships allow Capgemini to work on a wide variety of engagements with a tailored approach.

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Caution

2017 ISG Provider Lens™ Leader

After the acquisitions of iGATE and TCube Solutions, Capgemini has gained strong momentum for growing its existing accounts and increasing its share of wallet from newly added clients in the U.S. With its industry-leading partnerships and end-to-end solution capabilities in the BFSI industry, Capgemini is a suitable candidate for executing large ADM transformation contracts.
Cognizant is a behemoth in the financial services sector in the U.S. Its scale and breadth of offerings in this industry remain unprecedented.

Due to consolidation and volatile market conditions in the U.S., Cognizant’s revenue growth has remained unsteady in last couple of years. As the BFSI segment makes up close to 40 percent of its revenue, changing market dynamics can have a direct impact on the company’s financial growth and performance.

Cognizant’s ADM services revenue from BFSI clients in the U.S. is estimated to be $3.4 billion in 2016. It has approximately 51,000 ADM FTEs (estimated) catering to BFSI clients in the U.S.

**Domain-plus-technology strategy:** The BFSI and healthcare industries (with loosely connected and complex legacy systems) are categorized under mature category by Cognizant. The go-to-market strategy for such clients is an advisory led domain-plus-technology play with a focus on application rationalization and modernization, migration through accelerators and platforms, and end-to-end transformation.

**Performs well across deal sizes:** Cognizant has a well-diversified portfolio of clients, and the revenues are well distributed across the deal bands. Thus, it is well equipped to work on both small engagements that require low cost execution as well as large contracts with end-to-end transformational capabilities.

**Partnerships:** The BFSI and healthcare industries (with loosely connected and complex legacy systems) are categorized under mature category by Cognizant. The go-to-market strategy for such clients is an advisory led domain-plus-technology play with a focus on application rationalization and modernization, migration through accelerators and platforms, and end-to-end transformation.
DXC TECHNOLOGY

Overview

DXC Technology's (DXC) maintains a U.S. workforce of 5,000 ADM FTEs that cater to domestic BFSI clients. The company's U.S. ADM services revenue from the BFSI industry reached an estimated $850 million in 2016.

Strengths

- **Rich product set:** Given HPE and CSC's core focus on the BFSI segment, DXC is equipped with one of the most comprehensive toolsets, which includes RDAR, INGENIUM, ProductXpress and RADIENCE from HPE and Celeriti, Boomerang and CyberLife from CSC.

- **Industry partnerships:** DXC has deep industry partnerships with financial product vendors like Temenos and FICO. It also has been a long-time member of partnerships with large technology firms such as Oracle and Microsoft.

- **Complete ITO capabilities:** DXC is responsible for not only handling the applications but also the infrastructure portfolios for many of its large financial services clients in the U.S. It can be an ideal choice for companies looking to outsource large, bundled ITO deals.

Caution

DXC needs to rework its pricing strategy. It has lost multiple large-scale deals in the last five years by not being the most cost-effective option.

2017 ISG Provider Lens™ Leader

DXC has scale, toolsets and partnerships to retain, acquire and grow its BFSI business. Its success will be dependent on how well DXC is able to leverage its newfound scale to appropriately price its solution and offerings for the U.S. market.
HCL TECHNOLOGIES

Overview
HCL Technologies’ (HCL) generated ADM services revenue from the U.S. BFSI industry was approximately $585 million in 2016. It has an estimated 9,300 ADM FTEs focused on BFSI clients in the U.S.

Strengths
Micro-verticalized approach: HCL has dedicated domain solutions spanning specific areas such as cards and payments, trade finance, treasury, cash management, core banking, consumer lending and commercial and corporate lending.

Innovation labs: It has six innovation labs and Agile centers globally that are dedicated to key themes like mobility, customer experience, IoT and co-innovation.

Rich toolset: HCL has developed a rich toolset that propagates a specialized approach to ADM services. For example, FENIX is an operating model specifically designed for the BFSI industry with cloud and digital transformation as its core goals. HCL developed FinEdge (built on Microsoft Dynamics) and SFDC – Wealth CRM to boost its system integration capabilities.

Caution
Approximately 70 percent of HCL’s BFSI clients in the U.S. are large clients that generate more than $20 million in annual revenue. The client mix reinforces HCL’s position as an end-to-end ADM player in this industry. However, the revenue is lowest among India heritage Tier 1 vendors, leading to a limited number of clients.

2017 ISG Provider Lens™ Leader
HCL can be a right partner of choice for financial enterprises looking for end-to-end ADM services with a focus on modernization, digitalization and cloudification.
Overview

IBM ADM services generated approximately $2.1 billion in revenue from the U.S. BFSI industry in 2016. The company has approximately 10,000 ADM FTEs catering to BFSI clients in the U.S.

Strengths

**Breadth of services:** IBM is uniquely qualified to provide a breadth of services across various financial platform implementations. It offers services for finance and business process transformation, change management, organizational design, application development and consulting integration, managed services – for both support and cloud infrastructure – and business process outsourcing.

**End-to-end digitization:** IBM has several successful deployments of digitally native systems that are built on integrated processes, run on cloud platforms and create actionable business insights. Its deployments often rely on IBM's wide range of proprietary tools; its notable solutions include Bluemix cloud, WebSphere, API economy, MobileFirst and Watson.

**Core system transformation:** IBM follows a very structured and effective approach to core modernization. It first rationalizes the application portfolio, then follows a service-oriented approach to align business architectures with componentization. Next, it uses third-party packages to balance rewriting the existing software. IBM can add value across the process through its industry-specific tooling, proven methodologies and pool of highly experienced industry consultants and engineers.

Caution

Clients that have limited contract scope or only want service providers to run their operations without making disparate changes to the existing ecosystem may find IBM services expensive.

2017 ISG Provider Lens™ Leader

IBM has deep domain and technical expertise across the banking, financial markets and insurance industries. IBM enhances its experience with its analytics, cloud and cognitive capabilities to produce astonishing results.
Overview

Infosys' ADM services revenue from the U.S. BFSI industry is estimated to be $640 million for 2016. It has approximately 13,860 ADM FTEs working with BFSI clients in the U.S.

Strengths

**Focus on key areas via subsidiaries:** Infosys has established subsidiaries to focus on key emerging areas. For example, Edge Verve Systems was launched to focus on cloud and blockchains, while Sava Systems is oriented to digital experience solutions, including mobile commerce and in-store shopping experiences.

**Deep industry alliances:** Infosys has deep alliances with D+H, Misys, Smart Stream, SAS and Atomize to cater to clients in the U.S. market. It has even created centers of excellence for a complete suite of services around Misys-LoanIQ, Smart Stream TLM and SAS Financial Crime.

**Broad industry coverage:** Infosys solutions cover multiple BFSI sub-segments including cards and payments, mortgage, treasury, compliance, core financial services and insurance. Infosys also has its own core banking software platform, Finacle, which is among the top omnichannel banking solutions in the U.S.

Caution

Infosys' attrition rate has been high in the past year. The company reported an attrition rate of 19.2 percent for Q1 2017. The rate can be a cause of concern, especially for long-term engagements.

2017 ISG Provider Lens™ Leader

Infosys has a well-thought-out strategy for the BFSI industry with investments in the right areas, an impressive product portfolio, good industry segment coverage and a well-distributed clientele across engagements of all sizes.
TCS

Overview

TCS generated an estimated $2.3 billion from its ADM services in the U.S. BFSI industry, which it serves with approximately 20,000 ADM FTEs.

Strengths

Industry-specific tooling: TCS has multiple tools and intellectual property specifically developed for the BFSI industry. These include BaNCS Digital for the banking, capital markets and insurance industries. BaNCS provides core systems covering loans, deposits, wealth management, digital channels and risk and compliance components. It is a solution of choice for more than 300 banks worldwide. The TCS xCOS accelerated customer on-boarding solution is designed to help banking, financial services and insurance companies consolidate and transform their new account opening processes across the organization.

IP creation in emerging areas: TCS has invested to develop frameworks and proprietary tools enabling it to foray into emerging, fast-growing areas in the BSFI sector. For example, the TCS Connected Home solution provides a smartphone app to link customers to insurers to support areas like risk prevention, customer profiling and safety improvement through processing and analyzing data generated via sensors at the customer end.

Experience: BFSI accounts for more than 35 percent of TCS’ ADM revenue and is its largest client segment. TCS has BFSI clients of all sizes, and BSFI is home to some of the company’s longest-term relationships. TCS is highly experienced with projects that vary in size, scope, industry sub-segments and IT environments.

Caution

The next level of investment required for the BFSI industry will be for newer areas like blockchain. TCS needs to maintain its strategy of creating products around emerging areas to sustain its competitive edge. It also should explore the possibility of inorganic growth by acquiring fast-growing technology firms.

2017 ISG Provider Lens™ Leader

TCS’ continued investments in next-generation projects, experience and domain-specific expertise, along with its delivery excellence, make it a partner of choice across deals of all types in the BFSI industry.
Virtusa generated an estimated $520 million in U.S. ADM services revenue from the BFSI industry in 2016. The company has approximately 10,750 ADM FTEs catering to BFSI clients in the U.S.

**Domain expertise:** Virtusa is a specialist firm in the BFSI industry with more than 70 percent of its overall revenue coming from this segment. It combines Virtusa’s deep domain expertise in consumer and retail banking with Polaris’ strength in corporate and investment banking. The company also has a range of proven solutions for insurance industry sub-segments, including property and casualty, life insurance, wealth management and health. VirtusaPolaris has made at least six acquisitions that have augmented its consulting capabilities for the BFSI segment.

**Innovation:** Virtusa offers innovation-as-a-service through its fintech lab. The lab is hosted in the cloud and provides sandboxes and a banking data model to develop proofs of concept and create workable prototypes.

**Business-focused transformation:** Virtusa’s strength lies in digitally enabled transformation, where the goal is to achieve customer centricity, generate revenue and digitize processes. It engages through some innovative models as selling digital products (productizing elements of a digital environment) and as-a-service offerings.

Although Virtusa provides application management services, that is not a primary strength of the provider. Its primary strength lies in complex high-end development projects and digital transformation capabilities.

Virtusa is a good fit for clients looking for business-led innovation and Agile-based delivery capabilities and domain expertise. It is also an excellent option for clients that want to explore emerging technologies to develop proof-of-concept projects or run pilots.
Overview

Wipro saw extensive ADM services activity in 2016 with U.S. BFSI clients, claiming an estimated $985 million in revenue and a headcount of 13,680.

Strengths

Solutions/IP across industry sub-segments: BFSI accounts for approximately 35 percent of Wipro’s business and is its largest industry segment. Wipro’s product portfolio covers the entire BFSI ecosystem with specific proprietary tools woven around key services and technologies. Examples include the ReconX reconciliation service that can handle complex transactions and enables transactional data optimization across the data lifecycle. TransformX provides a fully-managed service for institution-to-institution (I2I) integration. Wipro’s other BSFI-specific solutions include the WGS Gallagher loan origination system (LOS) and Holmes Anomaly, a big data platform to detect fraud and process violations.

Willingness to foray into emerging areas: Wipro is exploring emerging technologies like blockchain. It established a blockchain innovation lab and has already released multiple blockchain-based industry solutions, consulting frameworks and technology assets. Wipro has a few use cases in banking for cross border remittance, clearing and settlement for alternative rails and lending (including mortgage, auto and alternative). Its insurance use cases include reinsurance, shared economy insurance business network and claims settlement and subrogation.

Caution

Almost 75 percent of Wipro’s BFSI clients claim revenue of less than $2 million per year. Thus, its revenue base is bottom heavy. For a service provider of Wipro’s scale and presence, such clients should not form more than half of the base.

2017 ISG Provider Lens™ Leader

Wipro has strong presence in the U.S. BFSI industry. It offers a full range of services spanning all the industry sub-segments. Wipro has developed deep domain knowledge through continuous IP development and also has formed good industry alliances to facilitate further growth.
Overview

LTI generated revenue of approximately $290 million in ADM services for the BFSI industry in 2016. It has approximately 6,700 ADM FTEs serving BFSI clients in the U.S.

Strengths

**Domain experience:** LTI has experience in building large-scale solutions for BFSI clients. It has built a complex derivatives settlement platform that settles $60 trillion worth derivatives trade and has built one of the largest global custody platform. It also has built one of the industry’s largest data lakes to manage financial and regulatory reporting for one of the largest global banks.

**Assets and partnerships:** LTI has more than 20 solutions, plus expertise working on packaged software from more than 25 vendors.

**Next-gen solutioning:** LTI has developed emerging technology solutions to take advantage of the next wave of client investment in the BFSI industry. For example, it has developed solutions that use blockchain for trade, machine learning for financial crime investigation, and various technologies for its investor services automation stack.

Caution

LTI has the right set of offerings and domain experience for the U.S. BFSI industry. To better compete with the larger players in the market it needs to ramp up its scale and presence, organically or inorganically.

2017 ISG Provider Lens™ Rising Star

LTI has a comprehensive set of application offerings spread across the BFSI value chain. Its focus on new solution development in emerging areas is a move in the right direction.
Definition

End-to-End ADM – Healthcare & Life Sciences Industry – This quadrant highlights services providers that can execute all elements under the ambit of application outsourcing including consulting, development, support, maintenance and testing for clients in the healthcare and life sciences (HCLS) industries.

Observations

- With its transformational capabilities and deep-industry knowledge, Accenture is a top leader. Cognizant and TCS also have developed industry-aligned offerings, invested to develop products and IP and have large-scale operations.

- HCL is taking a data-driven approach to transformational contracts, whereas IBM is focusing on scaling its cognitive capabilities to serve future clients.
Observations (cont.)

- DXC has a tailor-made approach to HCLS industry clients and also is investing in emerging domains and technologies.

- NTT Data primarily focuses on the HCLS industry through a comprehensive services portfolio and strong partnerships. It caters to clients of all sizes.

- Wipro has been reporting high growth from the U.S. HCLS industry. It also is looking to grow inorganically in this space.

- Infosys has a moderate size healthcare practice compared to other leaders but caters to all the industry sub-segments and has the required domain expertise to win large contracts.

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Additional Participating Providers

The following services providers were considered for this quadrant but were not positioned in the quadrant:

Birlasoft, Ciber Fujitsu, Genesis 10, Hexaware, Infinite, ITC, Infotech, KPIT, LTI, Luxoft, Mindtree, Mphasis, NIIT, Persistent, QualiTest Group, Quinnox, Softtek, Unisys and Zensar.
Overview

Accenture's ADM services revenue from the U.S. HCLS industry is $1 billion for 2016. The company has approximately 5,000 ADM FTEs to serve its HCLS clients in the U.S.

Strengths

Innovation and design thinking: Accenture uses design thinking to prepare its clients for the future. It infuses innovation in its offerings via its Innovation Architecture, in which it combines capabilities from its various units (e.g. Accenture Research, Accenture Ventures, Accenture Labs, Accenture Studios, Accenture Innovation Centers and Accenture Delivery Centers) to deliver scalable, disruptive solutions to clients.

Platforms and accelerators: Over the years, Accenture has heavily invested on building apps, analytics, performance accelerators, platforms and methodologies to help companies reorganize their operations to improve customer engagement, brand performance and patient outcomes.

Digital transformation solutions: Accenture has a strong suite of continuously evolving next-generation, point-specific technology solutions. Its balanced portfolio of application and infrastructure services combined with its consulting capabilities make it an ideal provider for large transformation engagements.

Caution

Accenture is not the most appropriate partner for traditional outsourcing clients that are looking only for labor arbitrage, because Accenture's solution pricing is at the higher end because of its advanced capabilities.
Cognizant's ADM services revenue from the U.S. HCLS industry is $3 billion for 2016. It has approximately 34,000 ADM FTEs (estimated) catering to HCLS clients in the U.S.

**Overview**
Cognizant categorizes the Healthcare and BFSI industries as mature because of their loosely connected and complex legacy systems. The company's go-to-market strategy for such clients is a domain-plus-technology play with a focus on application rationalization and modernization, migration through accelerators and platforms and end-to-end transformation.

**Strengths**
- **Domain-plus-technology strategy:** Cognizant categorizes the Healthcare and BFSI industries as mature because of their loosely connected and complex legacy systems. The company's go-to-market strategy for such clients is a domain-plus-technology play with a focus on application rationalization and modernization, migration through accelerators and platforms and end-to-end transformation.
- **Proprietary tools:** Cognizant has a portfolio of more than 20 tools and other IP that are focused on HCLS and addressing the needs of the U.S. market. These include its TriZetto and ClaimsSphereTM solution suites, StarSERV solution for managing Medicare star ratings, TranZform for patient management collaboration, and TruProvider for managing provider data.
- **Extensive partner network:** Cognizant has an extensive network of more than 50 domain and technology partners that meet various needs of clients in the U.S. HCLS industry. Some of the major partners include Optum, McKesson, Healthwise, Micro-Dyn and Zelis.

**Caution**
About three quarters of Cognizant's HCLS client engagements generate $2 million or less in annual revenue. Additionally, only 10 percent of its contracts generate more than $10 million annually. This client mix makes Cognizant less dependent on individual accounts. However, in hindsight, it also indicates that Cognizant has a limited number of large contracts that leverage its entire range of HCLS offerings and services.

Cognizant's success in the U.S. HCLS market can be attributed to its industry-leading tools and platforms, application frameworks and a robust partner ecosystem.
DXC TECHNOLOGY

Overview

DXC Technology (DXC) earned in excess of $1 billion in ADM services revenue in 2016 from U.S. HCLS industry clients. The company has approximately 9,300 FTEs serving these clients. It delivers across all three segments of the HCLS market (Payer, Provider and Life Sciences) delivering the full end to end lifecycle of ADM.

Strengths

Tailor-made approach: DXC can work on an array of HCLS engagements with varying objectives. Its services can help clients develop and adapt to IT platforms for innovation and effective models, transform processes and improve business innovation, lower administrative costs, reduce fraud and abuse and accelerate development process to enhance agility. It includes its tailored made IP Applications covering Electronic Medical Record (EMR) applications, clinical applications, healthcare claims and healthcare and life sciences administrative and regulatory applications, and a new Open Health Connect (OHC) platform.

Well-distributed client base: DXC’s client engagements include project-based engagements that focus on selective processes and apps; vertically based engagements that generate between $2 million and $20 million. The mix of clients include major Provider, Payers, Pharmas and State and Local Authorities; in the US 1.3 billion healthcare claims are processed annually through DXC ADM solutions. Across Life Sciences, DXC has a strong presence among the global and US Fortune 500, working with pharma, biotech, medical distribution, and medical device manufacturers; seven of the eleven U.S. Fortune 500 pharmaceutical companies are DXC clients.

Willingness to foray into new technology areas: DXC is stepping into newer technology areas like industrial machine learning (IML), which uses big data to improve healthcare standards. Applications could lead to better clinical decisions, lower readmission rates and fewer adverse events. The company has developed a successful IML proof of concept. It has also made a number of U.S. based acquisitions in HCLS to extend its portfolio.

This includes Tribridge, who offer the full suite of Dynamics 365, ERP and CRM business applications and proprietary software. Population Health Management and XuberHealth a major provider in Payer healthcare claims management software, are other examples.

Caution

DXC is likely to face more competition from niche, local and specialist firms to win project-based development contracts. Such client engagements currently form a significant portion of its HCLS revenues.

DXC Technology (DXC) earned in excess of $1billion in ADM services revenue in 2016 from U.S. HCLS industry clients. The company has approximately 9,300 FTEs serving these clients. It delivers across all three segments of the HCLS market (Payer, Provider and Life Sciences) delivering the full end to end lifecycle of ADM.

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HCL TECHNOLOGIES

Overview

HCL Technologies (HCL) generated an estimated $285 million in revenue from ADM services to U.S. HCLS clients in 2016. It has approximately 4,600 ADM FTEs to serve those clients.

Strengths

The 4I Framework: Innovation around the patient is the focal point of HCL’s comprehensive framework, which was guided by “the four Is” – intelligence, interaction, integration and insight. It contains a strong intelligence layer, comprising patient segmentation, benchmarking, analysis, simulation and more. The interaction layer is multi-channel and includes social media, mobile, in person and web support. The integration layer collects and organizes information from multiple sources, including from pharma companies, labs, providers and others. For example, through a partner, HCL has built a platform that can integrate data from more than 160 medical devices in real time. Finally, the insight layer provides actionable care and business recommendations.

Well-distributed client base: HCL clients in the HCLS industry are well distributed across revenue bands ranging from less than $2 million to more than $20 million in annual revenue.

Analytics-driven Transformation: HCL takes a data-driven approach to transformation projects, integrating front-end processes with business outcomes, and analytics power revenue and patient care optimization.

Caution

HCL solutions are not as strong in biotechnology (based on its referenceable use cases) compared to its pharmaceutical, healthcare and medical device competencies.

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Over the past three years HCL has significantly ramped up its offerings, invested in analytics, developed many proprietary solutions and formed multiple industry partnerships to become a notable player in the U.S. HCLS market.
Looking at IBM’s core focus, investments and services portfolio, it is evident the company believes cognitive technology is the future of HCLS industry, and it is prepared to ride that wave.
Infosys has strong consulting and system integration capabilities in the HCLS industry. Although its HCLS practice is smaller than many of its peers, it has offerings spanning the supply chain.

**Overview**

Infosys' ADM services revenue from the U.S. HCLS industry is estimated to be $135 million from 2016. The company has approximately 2,900 ADM FTEs catering to HCLS clients in the U.S.

**Strengths**

- **Sub-segment offerings:** Infosys provides end-to-end ADM services across pharmaceuticals and biotechnology, medical devices, healthcare payers and provider segments.

- **Domain expertise:** Infosys has domain capabilities through development of various industry-specific tools and platforms like Sava, which can be used to create digital health platforms, and CarePlus, an integrated customer communications management platform that Infosys promotes as a key enabler for care-as-a-service.

**Caution**

HCLS is still a growing practice for Infosys. The industry generates a moderate source of revenue for Infosys. Approximately 75 percent of its engagements generate less than $2 million a year. Infosys has very few large HCLS clients.

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NTT DATA

Overview

NTT DATA's (NTT) ADM services revenue from the U.S. HCLS industry was approximately $475 million in 2016. It has 1,600 ADM FTEs catering to U.S. HCLS clients.

Strengths

Strong focus and well-distributed client base: NTT generates almost 63 percent of its total ADM revenue from this segment. It caters to clients of all sizes; clients are uniformly distributed across revenue bands. On an annual basis, approximately 15 percent of its clients generate revenue of less than $2 million, about 20 percent are between $2 and $5 million, another 20 percent are at the $5 million to $10 million level, approximately 30 percent are between $10 and $20 million in revenue, and the remaining 10 percent spend in excess of $20 million.

Proprietary tools and partnerships: NTT has developed various industry-specific tools such as Hitoe: a functional material that acts as a sensor-capturing bio signals from the heart and muscles; HIPAA, which is a compliant cloud service that provides Oracle Healthcare Foundation as-a-service. It partners with several tool vendors, including AnatomyWorks and Imbio, and platform vendors including Enli, HNC, Epic to meet different client demands.

Caution

The combination of NTT and Dell Services (which it acquired in November 2016) has created an attractive services portfolio for the HCLS industry. However, near-term market success will be dependent on how well the two entities are able to integrate.

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NTT provides end-to-end application services for the HCLS industry. Given its high focus and deep domain expertise developed through IP creation and partnerships, it is an ideal provider for executing deals of all sizes with varying scopes of services.
TCS

Overview

TCS’ ADM services revenue from the HCLS industry is estimated to be $700 million from the U.S. market in 2016. It has approximately 2,900 ADM FTEs to serve HCLS clients in the U.S.

Strengths

Product-based revenue: TCS’ services revenue from the HCLS industry continues to be well complemented by its platform-based business, which has helped it establish a separate revenue stream and highlights its domain expertise in this industry. The TCS Advanced Drug Development Product is a cloud-based clinical trials solution that is being used by of the top 10 global pharmaceutical companies.

Partnerships: TCS has many important industry and domain partnerships that enhance its value proposition. It has a specialized partnership with Oracle HSGBU for all life sciences products. Similarly, it has professional services agreement with Veeva for Veeva CRM and Veeva Vault.

Value for money: Approximately 77 percent of TCS's human resources are in India. It can provide HCLS solutions at good price points by optimizing the onshore/offshore resource mix.

Caution

Under HCLS, TCS appears to have most clients in the pharma, medical devices and biotech segments within the life sciences industry. Although the healthcare industry seems to be smaller focus for TCS, it has some interesting use cases in the segment for IoT, digital and cloud solutions.

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TCS’ global delivery network, combined with its proprietary products and next-gen solutions developed for HCLS companies, makes it a highly attractive option for U.S. outsourcing clients.
Wipro's ADM services revenue from the HCLS industry was approximately $290 million in the U.S. market in 2016. It has approximately 2,000 ADM FTEs catering to HCLS clients in the U.S.

**Overview**

Wipro has been actively looking to acquire companies to fill any voids in its current portfolio. In 2016, Wipro acquired Healthplan, an independent technology and Business Process-as-a-Service (BPaaS) provider in the U.S. health insurance industry. The move was made to strengthen Wipro's U.S.-based payer portfolio and gain access to Healthplan's back-office technology platform. Wipro currently targets multiple industries and sub-segments within life sciences, including payer, provider, medical devices and pharmaceuticals.

**Strengths**

**Inorganic growth:** Wipro has developed multiple frameworks and solutions for better collaboration, improved quality and better outcomes for entities throughout the HCLS ecosystem. A few of its notable solutions are its collaborative care-focused HomeCare Platform, Medicare Advantage 360 Platform, Connected Health and HealthInsights.

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**Caution**

HCLS has been among Wipro's fastest-growing segments for the last four years. The company has made good progress in developing domain expertise and increasing its presence through acquisitions. However, its practice size (in revenue) is still moderate when compared to its global peers. Wipro should continue to look at potential acquisition targets, especially in the life sciences space.

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Wipro's impressive growth in HCLS can be attributed to its investments for developing domain-specific solutions, its resource augmentation, strategic acquisitions and large client wins in the past few years.
Methodology
### METHODOLOGY

The research study “ISG Provider Lens™ 2017 - ADM Services” analyzes the relevant software vendors/service providers in the U.S. market, based on a multi-phased research and analysis process, and positions these providers based on the ISG Research methodology. The study was divided into the following steps:

1. Definition of the ADM Services target market
2. Use of questionnaire-based surveys of service providers/vendor across all trend topics
3. Interactive discussions with service providers/vendors on capabilities and use cases
4. Leverage ISG’s internal databases and advisor knowledge and experience (wherever applicable)
5. Detailed analysis and evaluation of services and service documentation based on the facts and figures received from providers and other sources.
6. Use of the following key evaluation criteria:
   - Strategy and Vision
   - Innovation
   - Brand Awareness and presence in the market
   - Sales and partner landscape
   - Breadth and Depth of portfolio of services offered
   - Technology Advancements
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