ISG Provider Lens™

Digital Business Transformation

Digital Continuous Delivery – Increasing Enterprise Agility

U.S. 2019

Quadrant Report

A research report comparing provider strengths, challenges and competitive differentiators

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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 August, 31, 2018. 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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ISG Provider Lens™

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EXECUTIVE SUMMARY

While digital transformation has been one of the hottest topics of discussion among enterprises, consultancies, research companies and academics for a decade, it is inherently difficult to understand fully in terms of scope, breadth of reach and potential impacts across the enterprise. Digital transformation comprises many technological topics, business coverage areas, organizational functions and business processes. As organizations analyze these digital transformational, the overall Internet of Things (IoT) and information and communication technology (ICT)-enabled world is increasingly evolving, causing exponential change.

Enterprises are by necessity evaluating means to increase their competitiveness. A large part of this challenge is not just technological, but is also related to transforming established processes and traditional management practices. Often, the question is: How can companies enjoy a sufficient degree of flexibility, speed and collaboration across departments and enterprise boundaries, so they can deliver benefit to themselves and their (ever more mobile) customers?

Enterprise agility goes far beyond software development agility and encompasses how organizations can adjust business, development and operations workstreams to survive and thrive in environments where competition and customer requirements are constantly changing. This adjustment, and the speed at which it is realized, is relevant and critical for the whole enterprise value stream.

Digital transformation evolves through virtualization in the technology and operations spaces plus integration of the virtual and physical worlds. From the systems and IT infrastructure perspective, "virtual" refers to running on the cloud and includes software defined architecture and infrastructures. Digital transformation of functions includes automation, artificial intelligence (AI) and cognitive technologies, coupled with feedback and analytical capabilities that can be applied in both the real world (such as production facilities, customer contact centers, retail environments and other customer interaction points, including mobile) and in the virtual world by automating the response and interaction with clients, partners and governments.

Digital business is open to “communities.” Constant interaction through social media and feedback mechanisms, coupled with usage pattern capture and analysis, feed the business strategy, product roadmap and sales campaigns. Businesses should understand communities as one of the mandatory requirements to bolster their overall digital business success. There was a saying many years ago: “You do not exist if Google search cannot find you.” A similar situation holds true today: Businesses do not seem to exist if they are not mentioned in social media. The prime difference from being findable on Google is that you cannot buy that social media marketing spot today; it needs to be conquered through interaction, volume of mentions and relevance.

Digital transformational strategies and implementations, therefore, require relationships, operations, products, virtualization and community that include feedback and analytics to be successful long term.

As there is no industrywide or cross-industry architecture and process model, nor a standardized one-size-fits-all solution currently, ISG advises enterprises to reach a firm level of understanding of the following solutions and approaches as part of any potential digital transformation program:

- Customer journey mapping that connects customer interactions to business functions, products and digital functions, and the respective alignment of the company's own activities.
- Lean product management to improve business responses, based on customer feedback, and to manage modular components.
- Agile software development life cycles (SDLC) for faster application development and to account for continuously changing customer requirements and potential improvements.
- DevOps to improve cross-functional collaboration between the IT department and the responsible line of business, and for faster feedback on potential digitalization opportunities.
- Software-defined data centers (SDDC) and networks (SDN, SD-WAN) to improve overall network utilization and provisioning, while removing vendor dependencies.

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Enterprise agility requires organizations know and master multiple deployment models and methodologies and take an adaptive approach to using them. That is a basic requirement for real enterprise flexibility. Enterprises need to develop the freedom to use the suitable model to achieve the specific speed needed to address their business requirements, depending on the use case.

For companies, this implies changing their sourcing approaches to procure products and services that are increasingly digital transformational. Such products and services are often software defined to give vendor independence with maximum flexibility.

The following points provide a framework of key characteristics of digital services, including their differentiation from less digitalized services:

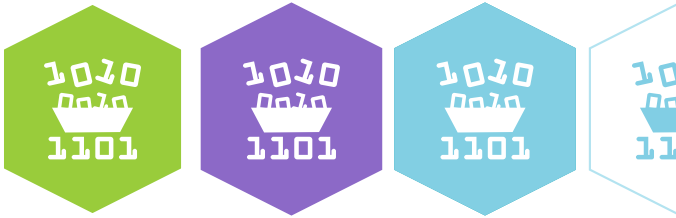
- Digital transformational services combine maximum automation with autonomy, providing multi-platform compatibility.
- Service delivery is based on ubiquitous communications and information networks. This includes stationary and mobile networks and low-power wide-area (LPWA) networks such as narrowband IoT (NB-IoT). The required always-on connectivity is ensured through standardized interfaces, automated, software-defined provisioning and capabilities that are fully based on business- and user (class)-specific SLAs.
- Despite a high degree of automation, digital services provide individual variants (such as efficiency prioritization, dynamic response and provisioning, automated policy mapping, high security) that are based on an integrated service management approach.

Performance can be adjusted based on information from the digital customer journey (for example information gathered by cookies and movement profiles). Service variations and improvements are location- and time-independent and are performed based on preferences, user class or other influencing factors.

- Service performance can be guaranteed, independent of use rates and based on automated and predictive system provisioning tools.
- Container technologies or other digital transformational architectures (such as SDN) support a large variety of infrastructure types and workload platform independence within a software-defined operations environment. Previously separate IT areas, such as servers, storage, networks or non-IT devices plus information and applications, are now managed based on an SDN approach.
- Service billing is done through multiple channels (for example, credit card, PayPal and similar approaches, mobile wallets and cryptocurrencies).
- Smart contracts and transactions that are based on coded specifications and requirements and can be used to control and check contractual relationships automatically are also gaining relevance. Depending on the contract, use is based on rules from a variable (on-demand scaling) or rigid usage agreement. The agreement always contains reserved instances to ensure the availability of immediate additional performance that is not included in the contract. Blockchain is entering the field to enable such scenarios and can be considered as a disruptive service, for automated contracts and in other areas.

- Product-specific support is mostly personalized, based on conversational user interfaces (CUIs), chatbots and natural language processing (NLP). Image recognition elements and even artificial or cognitive intelligence, based on integrated neural networks or cloud ecosystems, are also used to automatically detect and anonymize anomalies and translate them into patterns or best practices.
- Self-healing mechanisms, reporting and forecasting models are used to detect and contain problems and resolve them, if possible. To trace and improve forecasts or to automate methods, results and reports are stored and shared with involved parties according to the DevOps model to improve the quality of a service.
- The highly modular service or microservice is provisioned ad hoc and provides an API-controlled data model that classifies and handles device and personal data, information and applications. If necessary, management is done via command line or code and is ensured via standardized interfaces. Graphical user interfaces (GUIs) are optional. If GUIs are implemented, they are available natively for the device and/or platform (framework) to ensure ease of use for inexperienced end users.
- Based on a maximum degree of standardization and the use of open-source technology, services may be published in community directories such as GitHub. Services are optimized and versioned to ensure code transparency and integration into additional digital ecosystems, platforms and industry- or user-specific innovations.

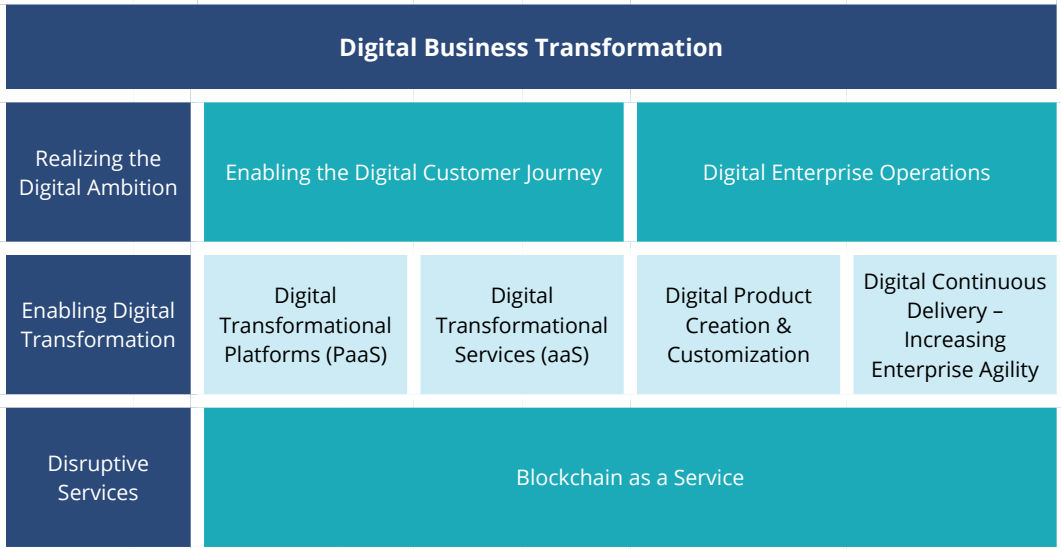
- Increasingly, a service is produced within decentralized, globally scaling ecosystems with complementary business partners and offerings. Users of such services can become providers, or "prosumers," and contribute their own data or content. Ultimately, they become part of the value or supply chain. Chaining individual services into new (mash-up) services, based on theoretically infinite numbers of third-party services that can be accessed by heterogeneous and unknown customers, serves as the basis for exponential growth, innovations and the success of niche products (long-tail marketing) and non-linear business models. This kind of business model is currently used by hyperscale companies such as Facebook, Amazon, Apple, Netflix and Google, collectively referred to as FAANG.



ISG Provider Lens™

Introduction

Simplified illustration



Source: ISG 2018

Definition

The digital transformation megatrend is a top priority on corporate agendas. The delivery of digital transformational solutions coupled with corporate agility is fully supported by advisors and researchers that are concentrating upon future-oriented business models. The focus is on enabling businesses to efficiently address individual customer expectations and requirements, rapidly, with minimal unplanned cost, effort or disruption for the enterprise, thus increasing the corporation's competitiveness. This requires companies to move to a digital transformational technology and process level as soon as possible and then strive for continuous change – both internally and externally. This study covers three overriding aspects of Digital Transformation. The general aspects and the specific quadrants covered within each one are presented below.

1. Realizing the Digital Ambition, comprised of two quadrants: Enabling the Customer Journey, Digital Enterprise Operations.
2. Enabling Digital Transformation: PaaS, XaaS, Digital Product Creation and Customization, Digital Continuous Delivery.
3. Disruptive Services: Blockchain.

Definition (cont.)

Scope of the Report

Enabling the Digital Customer Journey

A customer journey comprises the individual cycles clients experience before and during the decision-making process while buying or using a product or service, and their product or service experience after making the purchase. Digital technologies can be used to allow for a completely new customer experience. This category comprises agencies and service providers that have specialized in developing comprehensive portfolios of digital go-to-market and business strategies, brand communications, creative service, design and experience offerings. The providers are not limited to their own underlying technology and solutions, ensuring an integrated strategy to roadmap the digital customer journey offering to the enterprise client.

IT vendors, strategy advisors and service providers such as IBM, Accenture and Deloitte continue to take over marketing agencies and are raising their internal competencies to strengthen their presence in marketing departments. Concurrently, marketing agencies are strongly enhancing their digital and IT technology competencies.

Digital Enterprise Operations

This segment covers the digitization of the processes of a typical large-scale organization. Digitization is accomplished using an ecosystem of components, tech platforms, processes and system integration. There may be a mix utilizing PaaS, in-house operations/data center or as-a-service (aaS) operations and main data center functions in a managed and integrated (end-to-end) manner. It includes DevOps tools and improvement to all operational and rapid provisioning processes.

Digital enterprise operations providers help customers operate smart, IT-based infrastructures, platforms and networks that connect sales, service and partners across the whole value chain. This market segment combines traditional operational excellence, including highly sophisticated technology, with managed services know-how and an in-depth understanding of customers' business and industry-specific challenges.

These implementations are often considered starter steps in the journey from traditional or current operations toward cloud-based operations that map to the inspirational enterprise "customer journey" plans. They are, in many cases, considered initial iterations that are

Definition (cont.)

replaceable by more customized and comprehensive PaaS and/or XaaS offerings. The transition occurs as the enterprise becomes more mature in its aspirations and further along its strategic roadmap of the overall digital transformation process, tempered by business and customer feedback, usage patterns and new requirements based on the initial operating offering.

Digital Transformational Platforms (PaaS)

This segment lists and grades all the PaaS multi-tenant platform solutions, which can be integrated together and offered to enterprise by system integrators (and potentially by vendors acting in a SI role). It focuses upon solutions with a high degree of automation that are ready to use out of the box (pre-built), and those which need customization by the SI (and partners) but are designed for ease of customer tailoring and modification (via open, modular and customizable components). Data center managed service, IaaS and hybrid cloud management are optional, because a client may have another provider for infrastructure management. Cloud computing is the foundation and the philosophy behind these platforms, which can be enhanced and refined based on an expansive partner ecosystem.

Solutions may consist of a technological mix, including hybrids of in-house developments and best-of-breed solutions by leading product and platform-as-a-service providers. They are embedded in Web platforms and cloud marketplaces, which provide networking effects and integrate and distribute products or services from the platform provider and third parties.

Many systems integrators are established players in this segment. Their entry may have resulted from prior histories of being involved with integrating cloud management and orchestration technological advances and event processing services, coupled with their ecosystems of internal and partner offerings and adaptation capabilities.

Digital Transformational Services (aaS)

This segment evaluates and grades “cloud first” aaS service providers that are focused on digital transformation with out-of-the-box solutions or solutions (often open or modular) that are easy to customize for specific enterprise needs. The provider can manage the solution or service end to end if required. This may be individually focused part areas of the entire digital transformation enterprise service chain (for example, CRM or mobile apps and IoT integration, microservice and API integration and provisioning, ERP, etc.) or may be complete solutions based upon the overall design and transformational roadmap for the enterprise, as delivered through strategic planning.

Definition (cont.)

Solutions may consist of a technological mix, including hybrids of in-house developments and best-of-breed solutions by leading product and platform-as-a-service providers. They are embedded in Web platforms and cloud marketplaces, which provide networking effects and integrate and distribute products or services from the platform provider and third parties.

Many systems integrators are established players in this segment. Their entry may have resulted from prior histories of being involved with integrating cloud management and orchestration technological advances and event processing services, coupled with their ecosystems of internal and partner offerings and adaptation capabilities.

Digital Product Creation and Customization

This segment covers the creation of new digital products from ground up for enterprise, either as new service components for the business, or by adapting existing but outmoded service components. These developments and customizations may be offered as a service but fall short of the full continuous delivery paradigm. Monetization of these products should be built in and part of the development process. Some examples of digital transformational products include application accelerators, browse-and-buy capability for mobile end users, hotspot marketing, try-before-buying/demo subscriptions, and digital mirroring that simulates trying a product and provides stats and customer acceptance feedback.

Accelerating innovation for using digital transformational products and methods to translate information into revenues is based on lean, flexible and customer-centric business processes. The processes should be supported with inclusive agile development that is highly mapped to the goals. The current mantra focused on “information excellence” urges enterprises to scrutinize and improve all of their processes related to creating products and services. Major challenges for companies include developing the functionality and processes to evaluate and support ideas within the context of current digitalization trends.

Digital Continuous Delivery

Digital continuous delivery gives organizations the ability to develop and deliver high-quality software faster and more efficiently than ever before. It allows the use of development pods, innovation labs and direct feedback from end users and customers to increase the relevance of software being released into the market, and to shape new specific products and microservices. End -user and customer feedback is often captured automatically via use pattern analytics. Enterprises can have in-house continuous development and innovation staff, access resources jointly with in-house and external partner companies or through an as-a-service arrangement, with only the management and authorization function remaining in-house.

Providers of this set of services must be able to offer all of the benefits and practices of companies in the Digital Product Creation & Customization quadrant, and also offer a workplace

Definition (cont.)

or shared workspace experience for collaboration. Under this environment, employees or user groups crowdsource to develop new products and services designed for new digital experiences. The providers have assets to support product ideation and prototype testing, such as: collaboration tools, virtual reality labs, IoT platforms for prototyping, telepresence for remote team collaboration, design thinking, A/B tests and methodology experts to facilitate product creation. Prototypes can be created and tested very quickly using agile methods. Providers that compete in this market can engage by project or as a continuous permanent innovation lab and may share revenues from product monetization.

Blockchain as a Service

This is potentially a vast and highly disruptive area. Although commonly associated with Bitcoin and other cryptocurrencies, blockchain technology has many other applications. Simplistically, a blockchain is a type of distributed ledger or decentralized database that keeps continuously updated digital records of who owns what, with a network of replicated databases, synchronized via the Internet and visible to anyone within the network. Blockchain networks can be private, with restricted membership like an intranet, or public. When a digital transaction is carried out, it is grouped in a cryptographically protected block with other transactions that have occurred in the last 10 minutes (or less) and the record is sent to the entire network.

Bitcoin is merely the first and most well-known use of distributed ledger technology. In fact, Bitcoin is only one of approximately 700 applications that use the blockchain operating system today. One example of blockchain's evolution and broad application beyond digital currency is the development of the Ethereum public blockchain, which is providing a way to execute peer-to-peer contracts. Another example is provenance and authenticity tracking, which allows a chain of evidence based on numbers, codes, readable tags and even photographic evidence to be available in an unbroken chain from an item's manufacturer or provider, through distributors and third parties, to the purchaser/end user. The process can provide evidence of the item and record all steps in its supply chain from origin to end user. Such distributed ledger approaches increasingly are being used for tracking art and other valuable objects, and in areas such as aircraft and vehicle maintenance part inventory supply and control.

Blockchain's decentralized, open and cryptographic nature allow people to trust each other and transact peer to peer, making the need for intermediaries obsolete. The technology and processes it enables also bring unprecedented security benefits. Hacking attacks that commonly impact large centralized intermediaries like banks would be virtually impossible to carry out on a blockchain, because every block ever made on a subject, across the entire internet or network, would have to be overwritten, as would the backups.

Our quadrant report examines Blockchain as a Service providers.

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.

Provider Classifications (cont.)

Each ISG Provider Lens™ quadrant may include a service provider(s) who ISG believes has a strong potential to move into the leader's quadrant.

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.

Not In

This service provider or vendor was not included in this quadrant as ISG could not obtain enough information to position them. This omission does not imply that the service provider or vendor does not provide this service.

Digital Business Transformation - Quadrant Provider Listing 1 of 4

	Enabling the Digital Customer Journey	Digital Enterprise Operations	Digital Transfor-mational Platforms (PaaS)	Digital Transformation Services (aaS)	Digital Product Creation & Customization	Digital Continuous Delivery - Increasing Enterprise Agility	Blockchain as a Service
Accenture	Not in	Product Challenger	Not in	Leader	Not in	Product Challenger	Leader
Agilepoint	Contender	Not in	Not in	Market Challenger	Market Challenger	Product Challenger	Not in
Alegri	Not in	Contender	Not in	Not in	Not in	Product Challenger	Not in
AppliedBlockchain	Not in	Not in	Not in	Not in	Not in	Not in	Contender
Atos	Leader	Product Challenger	Leader	Product Challenger	Product Challenger	Product Challenger	Not in
BCG	Product Challenger	Not in	Not in	Not in	Not in	Not in	Not in
BT	Not in	Not in	Not in	Product Challenger	Not in	Not in	Not in
C3IoT	Not in	Not in	Not in	Not in	Not in	Contender	Not in
Capgemini	Not in	Product Challenger	Not in	Product Challenger	Product Challenger	Not in	Product Challenger
Cognizant	Leader	Product Challenger	Leader	Leader	Leader	Product Challenger	Rising Star
Deloitte	Not in	Not in	Not in	Product Challenger	Not in	Leader	Not in
Deloitte Digital	Product Challenger	Not in	Not in	Not in	Not in	Not in	Not in

Digital Business Transformation - Quadrant Provider Listing 2 of 4

	Enabling the Digital Customer Journey	Digital Enterprise Operations	Digital Transfor-mational Platforms (PaaS)	Digital Transformation Services (aaS)	Digital Product Creation & Customization	Digital Continuous Delivery - Increasing Enterprise Agility	Blockchain as a Service
DXC Technology	Leader	Leader	Leader	Leader	Product Challenger	Leader	Not in
Ernst & Young	Product Challenger	Not in	Not in	Not in	Not in	Not in	Not in
Fujitsu	Not in	Product Challenger	Product Challenger	Product Challenger	Not in	Not in	Not in
GE	Product Challenger	Not in	Market Challenger	Product Challenger	Market Challenger	Market Challenger	Not in
HCL	Leader	Leader	Leader	Leader	Leader	Leader	Leader
Hexaware	Not in	Not in	Not in	Not in	Leader	Not in	Product Challenger
IBM	Not in	Leader	Leader	Leader	Leader	Not in	Leader
IBM iX	Leader	Not in	Not in	Not in	Not in	Leader	Not in
Infinite	Not in	Not in	Contender	Rising Star	Not in	Not in	Contender
Infosys	Product Challenger	Product Challenger	Product Challenger	Not in	Not in	Not in	Product Challenger
Intellectsoft	Not in	Not in	Product Challenger	Not in	Not in	Not in	Contender
ITC Infotech	Not in	Not in	Not in	Not in	Contender	Not in	Not in

Digital Business Transformation - Quadrant Provider Listing 3 of 4

	Enabling the Digital Customer Journey	Digital Enterprise Operations	Digital Transformational Platforms (PaaS)	Digital Transformation Services (aaS)	Digital Product Creation & Customization	Digital Continuous Delivery - Increasing Enterprise Agility	Blockchain as a Service
KPMG	Product Challenger	Not in	Not in	Not in	Not in	Product Challenger	Not in
LTI	Not in	Not in	Rising Star	Not in	Leader	Not in	Product Challenger
Luxoft	Not in	Not in	Not in	Not in	Product Challenger	Not in	Not in
Mindtree	Not in	Not in	Not in	Not in	Product Challenger	Not in	Not in
Mphasis	Leader	Product Challenger	Product Challenger	Product Challenger	Rising Star	Not in	Product Challenger
NTT DATA	Not in	Leader	Product Challenger	Product Challenger	Not in	Not in	Leader
Oracle	Not in	Not in	Market Challenger	Not in	Not in	Not in	Not in
Phillips Blockchain Labs	Not in	Not in	Not in	Not in	Not in	Not in	Market Challenger
Publicis.Sapient	Leader	Not in	Not in	Not in	Not in	Not in	Not in
Salesforce	Not in	Not in	Market Challenger	Leader	Not in	Not in	Not in
Softtek	Not in	Not in	Not in	Not in	Contender	Rising Star	Not in
Sprint	Not in	Product Challenger	Not in	Product Challenger	Not in	Not in	Not in

Digital Business Transformation - Quadrant Provider Listing 4 of 4

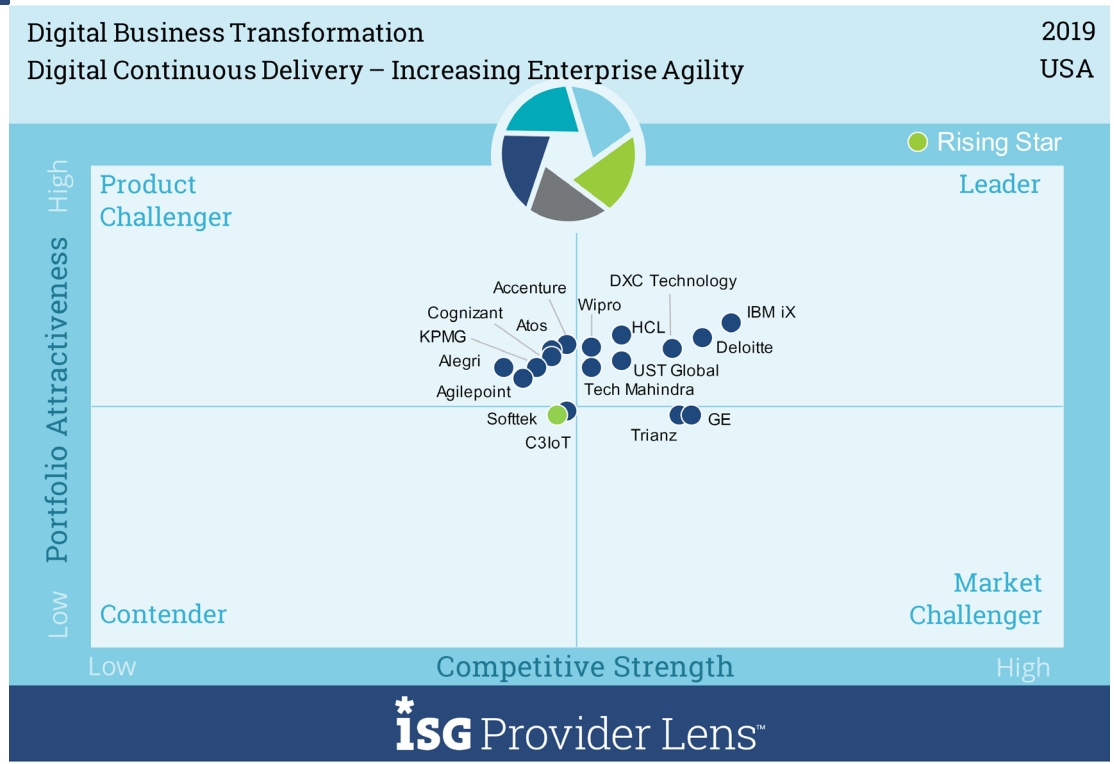
	Enabling the Digital Customer Journey	Digital Enterprise Operations	Digital Transfor-mational Platforms (PaaS)	Digital Transformation Services (aaS)	Digital Product Creation & Customization	Digital Continuous Delivery - Increasing Enterprise Agility	Blockchain as a Service
TCS	Not in	Product Challenger	Product Challenger	Not in	Product Challenger	Not in	Product Challenger
Tech Mahindra	Market Challenger	Leader	Product Challenger	Leader	Leader	Leader	Leader
Trianz	Not in	Not in	Not in	Not in	Not in	Market Challenger	Not in
Unisys	Not in	Product Challenger	Not in	Not in	Not in	Not in	Not in
UST Global	Product Challenger	Not in	Leader	Not in	Product Challenger	Leader	Leader
Verizon	Not in	Leader	Leader	Product Challenger	Not in	Not in	Not in
Wipro	Not in	Leader	Product Challenger	Not in	Leader	Leader	Leader
Workday	Not in	Not in	Not in	Contender	Not in	Not in	Not in
Zensar	Not in	Not in	Not in	Not in	Not in	Not in	Market Challenger

Digital Business Transformation Quadrants

DIGITAL CONTINUOUS DELIVERY – INCREASING ENTERPRISE AGILITY

Definition

Digital Continuous Delivery gives organizations the ability to develop and deliver high-quality software faster and more efficiently than ever before. It allows the use of development pods, innovation labs and direct feedback from end users and customers to increase the relevance of software being released into the market and to shape new specific products and micro services. End-user and customer feedback is often captured automatically via usage pattern analytics. Enterprises can have in-house continuous development and innovation staff, access resources jointly with in-house and external partner companies or through an as-a-service arrangement, with only the management and authorization function remaining in-house.



Source: ISG Research 2018

DIGITAL CONTINUOUS DELIVERY – INCREASING ENTERPRISE AGILITY

Definition (Cont.)

Providers of this set of services must be able to offer all the benefits and practices of companies from within the Digital Product Creation & Customization space (as described in the preceding segment) and also offer a workplace or shared workspace experience for collaboration. Under this environment, employees or user groups crowdsource to develop new products and services designed for new digital experiences. The providers have assets to support product ideation and prototype testing such as: collaboration tools, virtual reality labs, IoT platforms for prototyping, telepresence for remote team collaboration, design thinking, A/B tests and methodology experts to facilitate product creation. Prototypes can be created and tested very quickly using agile methods. Providers that compete in this market can engage by project or as a continuous permanent innovation lab and can share revenues from product monetization.

Closely related to the Digital Product Creation segment of the digital transformation market, continuous delivery is a process that enables development teams to almost constantly roll out well-tested code that is always in a production-ready state based upon real customer or business need. To achieve continuous delivery and required changes from the business, market or user groups (as captured via collaboration or usage tools) feed requirements given to application development teams. The teams then incorporate automation to produce and deliver updates more rapidly and with fewer errors. Once a new feature or update is complete, the code is immediately available for deployment to test environments, pre-staging or live production. In continuous delivery, software is continuously tested for production readiness with feedback provided automatically whenever a change is made. Building, testing and releasing software faster and more frequently reduces the cost, time and risk of deploying changes by allowing for ongoing, incremental updates to applications in production.

To achieve these goals, closed systems must be broken down and analyzed to determine their suitability and potential degree of openness towards the market. Theoretical models must be transferred into data-driven or virtual systems, and processes must be transferred from people to machines. Providers must have process competence and know about the need to tap into external networks (which are mostly cloud-based) as sources of information, knowledge and trends. Providers also need to have change management skills to involve employees across multiple departments and explain the benefits of changing core processes and must possess continuous agile development skills.

DIGITAL CONTINUOUS DELIVERY — INCREASING ENTERPRISE AGILITY

Definition (Cont.)

Continuous delivery automatically deploys each app or software build that passes the full automated test cycle. Instead of waiting for a human to decide what and when to deploy to production, a continuous deployment system deploys everything that has successfully traversed the creation/testing/deployment pipeline. Although the new code now is automatically deployed, techniques exist to activate new features or applications later, or only for specific subsets users if the enterprise desires. Deploying automatically pushes applications, features and fixes to customers quickly, helps avoid version and configuration control conflicts for deployed products and applications, and delivers competitive benefits.

Continuous delivery into deployment also allows organizations to benefit from consistent early feedback. Features can immediately be made available to users and defects or unhelpful implementations can be caught early, before the developers devote additional effort in a direction that will not deliver business or user benefits.

Separating the deployment of code from its release to users is an extremely powerful part of continuous delivery and deployment. Code can be deployed to production without initially activating it or making it accessible to users. Then, the organization decides when to release new functionality or features independent from deployment. This gives organizations a great deal of flexibility by separating business decisions from technical processes. If the code is already on the servers, then deployment is no longer a delicate part of the release process, which minimizes the number of individuals and the amount of work involved at the time of release.

In this segment, we consider those providers offering development and deployment services and those that are capturing business and user requirements or providing innovation labs or methods, workplace experiences, development pods and related services.

DIGITAL CONTINUOUS DELIVERY — INCREASING ENTERPRISE AGILITY

Observations

The companies recognized in our Leader category this year are all well-known large-scale providers of innovative solutions that are recognized internationally and are all multi-award winners in a variety of categories. The Leaders and the Rising Star are highlighted below.

- IBM iX has a strong range of visionaries, ideation studios, business and technology realists and experienced implementation teams from within iX, its partners such as Salesforce, and the greater IBM ecosystem. This combination makes iX a powerful "constellation" and end-to-end solution provider. As a leading ideation-to-impact company, iX places its focus on bringing the three key areas of strategy, creativity and technology together to form innovative but consistent solutions for its clients to capitalize on digital transformation. It utilizes its U.S. and international design and co-working studios and innovation centers to assist in this endeavor. The company has the ability to pull together teams from within iX, IBM as a whole and the enterprise itself from earliest concept ideation through to realization and implementation, and continuous improvement in operation to deliver against agreed business strategy.
- Deloitte, led by its Technology Strategy and Architecture (TS&A) practice, has delivered numerous agile transformations leveraging SAFe and Enterprise Value Delivery (EVD) to help clients understand their readiness for a scaled agile transformation, build a plan for success, and obtain the coaching and knowledge needed to guide their journey. It recently announced that the U.S. Consulting Practice has become a Scaled Agile Framework® (SAFe®) Gold Partner with Scaled Agile Inc. SAFe applies lean-agile practices and values and is the leading framework to drive enterprise agility. The partnership reflects Deloitte's significant experience in supporting organizations through agile transformations into continuous delivery programs.
- DXC Technology operates 25 application delivery centers, 23 cloud centers, including centers in the U.S., and has thousands of delivery and operations experts. These experts utilize DXC's Solution Composer with robotics and an AI engine to simulate and model potential target environments. The proprietary DXC Bionix™ platform is used to bring significant next-generation development methods and tools to bear and evaluates DevOps cases for improvement in operations within continuous development and improvement cycles.

DIGITAL CONTINUOUS DELIVERY — INCREASING ENTERPRISE AGILITY

Observations (cont.)

- UST Global offers a host of services in areas in the U.S., including its Digital, Consulting, Managed Innovation, Human Centered Design, Advanced Analytics, Algorithms, Cyber Security, Product development, Application Development services. It provides application delivery with continuous delivery and improvement methods. UST Global has significant abilities for assisting with thought leadership, together with comprehensive execution capabilities and a U.S. presence supported by large partners in the digital services space. These resources help the company deliver digital maturity assessments, strategy, change management and implementation with a continuous delivery bias.
- HCL is strategically focused on all areas of digital transformation and enterprise digitization globally in four key transformational areas – People, Processes, Technology and Eco-system – each of which has business, process and delivery methods associated with it. HCL applies DevOps focused around Docker and Puppet on the Nutanix infrastructure, allowing for POC deliveries and the ability to rapidly scale to full commercial enterprise-wide deployments. The company has an enviable list of reference clients and high visibility projects worldwide.
- Tech Mahindra (TechM) has a strong and deep consulting and technology background globally, extensive DevOps and cloud-first expertise and efficiency-boosting transition programs that use established methods. Tech Mahindra has a comprehensive portfolio of industry-specific solutions through which enterprises can realize continuous delivery within digital transformation. Clients can use the company's 3T approach or the proprietary ADOPT framework to build in DevOps efficiencies. DevOps initiatives can be applied to both existing applications and to future state cloud-based and mobile-first applications. In addition, NewAgeDELIVERY (NAD) is an e2e IT service delivery engine that originates with a design thinking-based approach to rework the requirements and leads to automated delivery thru continuous development, integration, testing and deployment. This uses crowdsource-based scaled agile planning, focusing on AI led reusable digital assets that results in enhanced productivity and velocity for project execution. The engine is continuous learning and takes insights from historical and in-life data generated through the system to feed in intelligence to the AI driven elements.

DIGITAL CONTINUOUS DELIVERY — INCREASING ENTERPRISE AGILITY

Observations (cont.)

- Wipro's DevOps framework includes a continuous delivery model to provide on-demand IT delivery. Its Global Agile Model for Enterprise (W-GAME) is a step-by-step model that focuses on aligning people, processes, practices and tools and uses various lean principles and agile approaches. Wipro also has a proprietary framework called 3D (Discover, Develop and Deliver) to help clients in their agile transformation, as well as CLiK and Renaissance ecosystem. Together, this forms a richness of tools, methods and processes to fit any enterprise need.
- Softtek is the Rising Star in the category. It has delivery centers the U.S. as well as globally. The company offers application software development, testing, security and support, including continuous delivery models, business process outsourcing (BPO), IT infrastructure management, security and support. It also acts as a value-added reseller (VAR) for SAP SE, Informatica, Cognos, Business Objects and other software products. It has a strong partner portfolio, including AWS. Softtek infuses a DevOps mindset into agile pods to expedite code analysis, functional and security testing, environment provisioning and continuous deployment. It seeks to execute these tasks via automation and implements SAFe agile methodologies to help its customers adopt and implement distributed agile at an enterprise level.

HCL

Overview

HCL's digital transformational capabilities are underpinned by three services groups with areas of focus ranging from traditional system integration to creating IP through to the development of new products and platforms, including legacy application modification using ADM coupled with rapid collaboration via its scale digital delivery center. These groups call upon teams from with other areas of HCL engineering as required and collaborate on continuous delivery/continuous improvement as part of the overall transition process for clients.

Strengths

SDLC capabilities: HCL has strong and deep in-house knowledge for creating application and solution pilots and scaling them into production, utilizing DevOps and continuous delivery/improvement processes across the entire software development life cycle (SDLC). Its use of state-of-the-art cloud-based enterprise management and service delivery platforms delivers strong credibility.

Impressive portfolio of partners: The companies HCL works with, and those it has invested in or outright acquired, bring specific and overlapping expertise into HCL's offerings.

Digital focus: HCL has more than 7,000 modern application developers and consultants engaged in digital platforms and application reengineering, including the DevOps and continuous delivery and improvement area. HCL has also established multiple co-innovation labs with customers in a wide range of industries.

Proven ability to deliver at scale: The company has proven its competency with continuous delivery and improvement models through many success reference stories utilizing HCL's Custom Application Development services on both modern and legacy platforms.

Caution

HCL should attempt to widen its reference and capabilities base across more verticals to allow the full landscape of industries access to its innovation and next-gen initiatives in digital transformation, continuous development and customer-led improvement areas.

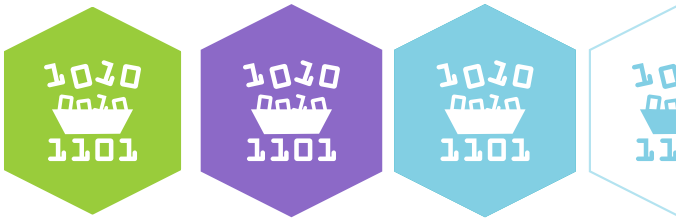
2019 ISG Provider Lens™ Leader

HCL delivers innovative and effective continuous delivery and improvement solutions in digital transformation in the U.S.

Methodology

METHODOLOGY

The ISG Provider Lens™ 2019 – Digital Business Transformation research study analyses the relevant software vendors and 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 Digital Business Transformation market
2. Use of questionnaire-based surveys of service providers/vendor across all trend topics
3. Interactive discussions with service providers/vendors on capabilities & use cases
4. Leverage ISG's internal databases & advisor knowledge & experience (wherever applicable)
5. Detailed analysis & evaluation of services & service documentation based on the facts & figures received from providers & other sources.
6. Use of the following key evaluation criteria:
   - Strategy & 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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Jan Erik Aase, Editor

Editor

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