Research Agenda, Q1 2017

Cloud Transformation

Covering the technology and services, economics and business models driving enterprise cloud transformation, and the re-invention of the IT industry.

The Cloud Transformation Channel is the evolution of 451 Research's Cloud and IT Service Markets Channel. It provides a point of intellectual convergence for our organization around cloud and digital transformation. We track firms bringing innovation and disruptive approaches to support cloud and digital transformation at end organizations – whether it's technology or services, economics or business models. The worlds of hosting, cloud, outsourcing, systems integration, telco, distribution and technology vendors are converging on this opportunity, and in the process these market participants must re-invent themselves. The Cloud Transformation Channel also tracks how the industry is itself being transformed by cloud, how this opportunity can be addressed, and what investment opportunities will be presented as part of these transformations.

ABOUT 451 RESEARCH

451 Research is a preeminent information technology research and advisory company. With a core focus on technology innovation and market disruption, we provide essential insight for leaders of the digital economy. More than 100 analysts and consultants deliver that insight via syndicated research, advisory services and live events to over 1,000 client organizations in North America, Europe and around the world. Founded in 2000 and headquartered in New York, 451 Research is a division of The 451 Group.

Analysts

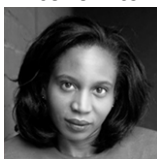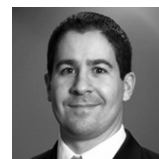|					
William Fellows Founder & Research VP	**Jean Atelsek** Analyst, Digital Economics	**Carl Brooks** Analyst	**Liam Eagle** Research Manager, Hosting & Cloud	**Eric Hanselman** Chief Analyst	**Yulitza Peraza** Associate Product Manager
Agatha Poon Research Director, AP Services	**Melanie Posey** Research VP, VotE, Cloud Transformation	**Dr. Katy Ring** Research Director, IT Services	**Dr. Owen Rogers** Research Director, Digital Economics Unit	**Al Sadowski** Research Vice President, Infrastructure	**Greg Zwakman** VP, Market and Competitive Intelligence

Overview

Cloud is rapidly entering an entirely new phase, one destined to prove far more transformative and disruptive than the initial phase of cloud computing. It is driving comprehensive transformation of digital assets in organizations of all kinds as IT decision-makers begin to view this emerging cloud construct as a proxy, and indeed an agent, for broader digital transformation agendas. There has been a change in attitude toward the use of cloud over the last 18 months, especially in regulated industries with financial services, insurance and healthcare firms converting to cloud. Regulators themselves are beginning to address the suitability of cloud and hosting for use in their markets – and this is happening globally. The inevitability of cloud means transformation is becoming mainstream.

Cloud Transformation

'Cloud first' is the new normal. Enterprises are getting started with cloud and -as-a-service (-aaS) deployments wherever possible, instead of starting new datacenter builds or developing infrastructure services that offer no differentiated value than can already be found in public cloud. Increasingly, cloud is being mandated in RFPs submitted by organizations to their service provider partners. The speed at which enterprises go to cloud – and the extent to which they can ultimately shift to it – depends on how 'shrink-wrapped' cloud can become and the extent to which it can be de-risked. This channel will analyze the capabilities and suitability of the technical, financial and advisory services users are being presented with to help them undertake cloud transformation. The ability to crack this next wave of buyer opportunity will be the key to success for suppliers, but to do this they will need to raise their IQs. Using data from our 35,000-strong global enterprise commentator network, this channel will identify opportunities for supply-side innovation, development and investment.

Digital Transformation

Technology is radically changing the ways we do things across various aspects of life as more and more processes become automated. Digital processes are changing the way we bank, use transportation, and monitor and manage our health, as well as how we access and use technology in the workplace. Digital-native entrants in every market are introducing this shift to digital processes. It is the new business process re-engineering.

However, the vast majority of organizations are not digital-native companies. This means that one of the biggest and most persistent challenges facing companies today is how to respond to a new generation of technology aimed at destroying their core profit engines. Such technologies give consumers a better experience at a lower price, and consequently, most organizations need to respond in order to compete more effectively in the digital economy.

Digital transformation is becoming a business requirement, no longer a nice-to-have. And so organizations are looking to IT service providers to help them transform their businesses, making use of the cloud technology pillars of IaaS, PaaS and SaaS.
In response to buy-side requirements for digital transformation support, many IT service providers are establishing 'digital transformation' practices, bringing together expertise in cloud services, mobility services, social media tooling, analytics and cybersecurity. The primary opportunity for these practices lies with customer experience (CX) projects, focusing on the digital transformation of the customer experience for their clients. This year we will likely also see the emergence of 'worker experience' projects and capabilities to better support the internal operations of buy-side organizations. Moreover, for the IT services industry the requirement for digital transformation is triggering a skills war around advanced technologies, which in turn is fueling acquisition activity.

Digital Infrastructure

Digital transformation goes hand in hand with the a digital infrastructure (DI) strategy that enables users to better align facilities, IT hardware and software stacks, communications and service-delivery mechanisms with their consumption requirements, in pursuit of an optimal state. It is both holistic and hybrid and because cost is key, DI has an intrinsic economic imperative. We think of DI as the analog to physical infrastructure – roads, trains, distribution depots and so on. Every organization needs a DI strategy, yet few are currently planful when it comes to digital manifests. However, it's our understanding (from primary research with enterprise end users) that organizations that do not consistently improve the efficiency of their digital infrastructure will find themselves at a competitive disadvantage, in terms of both cost and business agility.

Emerging Markets – APAC

Digital transformation is a global phenomenon that transcends institutional and geographical boundaries, propelled by a widely varying mix of macro and microeconomic factors. Some global strategists suggest that the pace of digitalization in emerging economies has exceeded that of well-developed mature markets. There is some truth in it as we examine the regional development in Asia-Pacific vis-à-vis its counterparts in Europe and North America, with Asian businesses more willing to leapfrog 'straight to' emerging technologies such as cloud computing, big data and enterprise mobility. Additionally, the lack of massive overhead in legacy environments helps shorten the decision-making processes of business organizations.

Digital strategy is starting to become – or at least is being talked about as – a national priority, at least among ICT regulators in developing Asia. In the end, it's all about bridging the communication gap between local governments and citizens, driving greater efficiency and transparency. From promoting smart cities and building cloud computing software parks to digitizing government IT systems with G-Cloud projects, individual economies including Australia, New Zealand, Malaysia, Singapore and Thailand have raised their profiles in the global cloud computing landscape. This in turn has helped ignite investor interest, with investments coming from local and foreign vendors, VC capitalists and corporate-led startup accelerator programs.

There is no shortage of innovative tech startups, driven by the continued growth of a vibrant investor community. And the early success of billion-dollar startups such as JD.Com, NetEase and Xiaomi, just to name a few, drives further competition among investors. Technology innovation has rewritten the rules of competition as a new breed of providers comes online and foreign players emerge as important investors and active players in Asia-Pacific. On the demand side, like other consumer technologies impacting enterprises, digital transformation will play a critical role in empowering corporate users, who traditionally relied heavily on their IT departments for service procurement and application delivery. This shift in the power base will require providers of all kinds to tread carefully to navigate user-specific requirements and expectations.

Weighing the intricacies of e-infrastructure development against economic diversity across the Asia-Pacific region, we find it instructive to characterize individual economies within three distinct groups: fast-growing China and India; leading North Asia and Pacific countries; and Southeast Asia, by virtue of their economic position and ICT development. For analysis purposes, the Cloud Transformation Channel will assess the extent to which Asian economies are shaping their digital transformation paths, identify near-term growth opportunities based on a set of macro and micro factors, and dissect the supply and value chain moving forward.

New-Style IT Services

Digital processes are changing the way consumers bank, use transportation, and monitor and manage their health, as well as how they access and use technology in the workplace. However, the vast majority of consumers do not work for digital-native companies. This means that one of the biggest and most persistent challenges facing companies today is how to respond to a new generation of technology aimed at destroying their core profit engines. Such technologies give consumers a better experience at a lower price, and consequently, organizations need to respond in order to compete more effectively in the digital economy.

A big part of the technology answer to supporting the kind of organizational agility we need in the digital era lies with the adoption of cloud technology. By virtue of its levels of abstraction, it is the best technology we currently have access to that can lower the barriers between business requirements and IT capabilities.

Building upon this cloud capability there are new opportunities arising as buy-side organizations move from investment in automating back-office systems to creating engaging front-office systems. Companies want to have a digital strategy in place using advanced technologies in social media, analytics and mobility, and this offers transformational opportunities that play well for companies with advisory arms. There are also growing professional service revenue opportunities from working with SaaS vendors.

With the rise of digital services, we are actually creating more granular information silos that are connected, but typically not integrated, and so there are new service opportunities being created around cloud brokerage and orchestration, and around data integration (especially as big data extends the use of analytics), cloud managed services, custom applications consumed as a service, SaaS and business-as-a-service (BaaS) offerings. These are the new service offerings that we are analyzing as they come to market.

Best Execution Venue – Achieving a 'Right Mix'

In a recent 451 Research study of 1,155 technology and business decision-makers across nine countries and eight vertical industries, nearly three-quarters said cloud will become the primary application deployment method within two years. Two-thirds of this will be via third-party service providers and one-third into on-premises cloud environments. Moreover, as enterprises seek to optimize the use of resources to meet different application and workload needs – which we refer to as best execution venue (BEV) – this study finds the mix of cloud infrastructure used will be roughly three quarters private cloud and one quarter public cloud in a hybrid or multi-service deployment model. We find this pattern across a broad range of organizational types and vertical markets – which we call the 'right mix.'

BEV strategies center on the notion that every class of IT-related business need has an environment where it will best balance performance and cost, and the IT organization should be able to select that environment (or even have the application select it automatically) as part of the general practice of IT. So there's a strong element of associated business value in assessing BEV, because it presents the IT practitioner with an opportunity to improve efficiency and time to market with the available IT infrastructure. Users expect to be able to make decisions about how and where to run applications and workloads and from where to source services based on workload profile, policies and SLA requirements. BEV strategies will enable users to find the most suitable services to meet their needs. Cloud management services operationalize these strategies.

The choice of venue – be it on-premises, public, managed private or hybrid cloud – will depend on the class of workload and the level of service delivery capability it entails. So a BEV for a customer-facing enterprise application may be entirely (or just subtly) different from that required for a batch computing application, a cloud-native app, or a test and development suite. What is clear is that regardless of the application class and its specific needs, the advent of automated, self-service and consumption-based cloud services means we can begin to make informed decisions about how and where to run applications and workloads, and from where to source services.

Cloud Management Platform – Operationalizing BEV (and Searching for the Cloud 'Uber' App)

We believe the cloud industry can emulate Uber's model to increase the rate of cloud adoption and for its use as an agent for digital transformation in organizations. After all, Uber and other disruptors across the industry are taking advantage of cloud and cloud applications to innovate and digitally transform industries.

Key to the success of Uber, Airbnb and other industry disruptors has been a focus on the user experience, the service model and bringing innovation to the business model. We believe cloud management services can help to deliver these. Like Uber, they can help enterprise IT users navigate to their destinations by improving their ability to find, access and use cloud services. They can help answer questions such as 'What tools can help me implement a digital infrastructure strategy?', 'How do I make internal services as flexible as an AWS or Azure?' and 'How do I make our business look at us like a service?', as well as 'Am I paying too much?' and 'What are the other options?' There is a wide range of cloud management services available – a comprehensive segmentation of this market is provided in our report *Cloud Management Platform Market Map 2016*, which includes companies we will be following in this channel.

Collectively, cloud management platform (CMP) services enable users to apply cloud decision criteria in the selection of cloud applications and services. This includes, but is not limited to, cost, compliance, utility, governance and auditability. The point is that rules are applied to every application. The impact of this on the internal IT operating model is considerable because it addresses many of the adoption issues with cloud. Adopting the -aaS operating model of cloud – consumption-based, service-driven with a retail model discipline – brings a baked-in process change and can pave the way for digital transformation.

Key activities supported by a CMP include advisory and planning, transformation engine (integration and migration), the self-service catalog, security and governance, cloud service broker (including marketplace, blueprinting and decision engine), consumption management and optimization, and pricing and TCO tools. As a whole, they are also often referred to as orchestration, and they enable users to apply cloud decision criteria in the selection of cloud applications and services. At a high level, it will mean users begin to move from compliance in selecting multiple individual services, to risk assessment in selecting federated services, which affects the internal IT operating model considerably because it tackles many of the issues associated with adopting cloud. Cloud brings with it a baked-in process change: The -aaS model is consumption-based and service-driven, with a retail model discipline. Major vendors are looking to assemble these capabilities to deliver what is effectively a cloud 'Uber' app for IT delivery and consumption.

The Outcome Economy

Cloud computing is causing a rethink of and gradual change in how IT is consumed, and it is moving out into the mass market. The majority of the opportunity for providers is moving 'beyond infrastructure' into managed services and helping enterprises meet business goals. The real value of cloud delivery lies with its application to business outcomes.

Enterprises are increasing their use of third-party vendors to host business services, using private and public tenant options to complement or replace on-premises systems rather than source hardware and software themselves. This is part of the adoption of IaaS and SaaS within organizations – it is an approach that makes enterprises more efficient and agile in responding to change. However, as an increasing number of buyers are beginning to realize, a tool is only as useful as the manner in which it's applied. IaaS is necessary but insufficient. Enterprises are seeking vendors that not only host solutions on their behalf, but also take part in managing the tool to ensure business goals are met. In this way, the customer receives a hosted business service as well as gains access to the process knowledge and real-world experience of the service provider. Multiple cloud vendors have become available to meet different enterprise needs.

Enterprises are therefore seeking suppliers that can bring expertise in running specific workloads or application tasks, whether as SaaS or hosted business process. They are seeking application modernization and transformation (such as moving enterprise applications onto public cloud), and providers that can guarantee a pricing model to guard against future upgrade costs. What we are seeing is the rise of the outcome economy. This is reflected in contracts that specify outcomes to be delivered on an -aaS basis with increased revenue or decreased costs as the SLA, rather than products or services as the inputs to them. It is outcome-based business service delivery, and it is what buyers are telling 451 Research they want.

IT as a Service

Buyers are beginning to have a more mature understanding of cloud technology's transformational capabilities and are looking for different kinds of external services. The vast majority of the market is still looking at cloud delivery as a way to source IT infrastructure more quickly without capex, but as more buyers are moving into deploying cloud-enabled production applications, they are looking at how they can offer more business-oriented services themselves.

Such buyers are often developing IT as a service (ITaaS) as an operational model where the IT department of an enterprise is acting and operating as a distinct business entity, creating services for the other lines of business (LOBs) within the organization rather than serving as a cost center.

Business as a Service

At present, the majority of buyers and suppliers are using cloud technology to mimic existing ways of doing things. However, cloud technology enables a different approach to sourcing services because the virtualization and layers of abstraction it provides mean that IT service providers can more easily be used to out-task digital process capabilities. These can directly deliver differentiating business outcomes, and this is the direction in which the cloud transformation service market is moving.

With cloud transformation services, service providers are used to augment the abilities and resources of the internal IT teams, bringing specific knowledge and expertise supported by IaaS, PaaS and SaaS technologies and best-practice frameworks. This approach requires an agile deployment capability that integrates architects, developers and delivery operations. The business model is very different from one that can deliver a large SAP or Siebel implementation, or that can completely take over running a whole IT function or technology tower. If pursued well, cloud transformation creates a much stickier service model than traditional services around application management, information technology outsourcing or business process outsourcing have in the past.

The digital services market is built on the need for continuous service improvement, so cloud transformation services succeed where an agile, incremental business relationship with the customer develops, often drawing on project services while using the -aaS delivery model. The requirement for continual service improvement in the digital age also suggests that a cloud-tasking collaborative model of working with external service providers will be most appropriate because organizations will begin to look for ongoing service development and integration agility from IT service providers in areas that are closer to the heart of the business. The mechanism for both buyers and providers moving to this cloud-tasking service acquisition and delivery model is the cloud management platform.

Additional Topic Areas

The Cloud Transformation Channel will also cover:

- Innovation
- Application modernization
- Services integration and management (SIAM)
- Advisory
- Digital agencies
- Innovation labs
- Analytics as a service

Note

In addition to the market dynamics listed above, the Cloud Transformation Channel will continue to collaborate with fellow 451 Research analysts across other channels as we assess the wider implications of the increased industry focus on Cloud Transformation. Numerous vendors overlap areas of our research, and some have multiple products in different technology domains.

Upcoming Research on Cloud Transformation

Voice of the Enterprise (VotE)

Combining 451 Research's industry-leading analysis with an extensive network of more than 50,000 senior IT professionals, Voice of the Enterprise tracks adoption across thousands of organizations and exposes the major opportunities for enterprises, IT vendors, suppliers and investors. Each quarter's survey has a focused theme, as indicated in the table below.

	Workloads and Key Projects	Organizational Dynamics	Vendor Evaluations	Budgets & Outlook
Cloud Transformation	Q1	Q2	Q3	Q4
Hosting	Q1	Q2	Q3	Q4

Supply-Side Research

Understanding the pace of growth and identifying the segments and industries driving value in the market is the focus of 451 Research's market tracking and forecasting methodologies. Through quarterly updates, 451 Research delivers its tracking and forecasting of the supply of key business application market indicators by region and country.

		Updates
Enterprise Market Monitor	Cloud Computing	Quarterly
	Cloud-Enabling Technologies	Quarterly

Technology & Business Insight Reports

M&A Outlook 2017: Infrastructure Management

Analysts: Al Sadowski, William Fellows, Katy Ring, Matt Aslett, Carl Lehmann, John Abbott, Jay Lyman, Nancy Gohring, Jason Stamper, James Curtis, Owen Rogers, Scott Denne, Brenon Daly

Publication Date: Q1 2017

Even after a recent record tech M&A run, dealmakers still had ambitious shopping plans in 2016. Across the globe, tech acquirers announced $500bn worth of transactions in the just-completed year, ranking 2016 as the second-highest annual total since the internet bubble burst. More than any other year, 2016 saw an expansion of buyers beyond the 'usual suspects,' as old-line companies got caught up in transforming their businesses through M&A.

Business as a Service Maturity Model

Analyst: Katy Ring

Publication Date: Q1 2017

The rapid pace of technology change is creating a number of challenges for the IT services community. In particular, providers with a core competency in IT outsourcing and application services are endeavoring to remodel their offerings and delivery capabilities to address buyer requirements around systems of engagement. As we approach the second phase of cloud market development, where the emphasis moves from IaaS to address business outcomes (business as a service, or BaaS) rather than technical services, where should IT service provider business development bets be placed?

Cloud Service Delivery Market Map 2017

Analyst: William Fellows

Publication Date: Q2 2017

This report profiles competitors by major segment with a graphical display of the market and key segments. The analysis includes key attributes for each segment and a view of each vendor's solution relative to those attributes. The 451 Research Market Map™ is designed to provide a view of the vendor landscape.

Consuming Cloud: The Rise of the Cloud Service Broker

Analyst: William Fellows

Publication Date: Q2 2017

Cloud services will dominate the market, ushering in the widespread use of cloud services brokerage to deliver the right combination of these offerings to meet different needs. Success for service providers will therefore depend on their ability to deliver multiple cloud service types – and for those services to be destinations not only for new application deployments, but also for modernized and migrated applications. This is why every services supplier – except for hyperscalers – is becoming a cloud services broker. Five years ago, 'cloud services brokerage' was a technical term reserved for niche players. In this report we examine the expanding role and cast of service brokers in managing cloud service delivery for enterprise – software-driven platforms that will span the IT organization from inside out and beyond. Enterprises have or will have multiple cloud environments to manage, private and public, and the need for software-centric control is stronger than ever.

Essential Ecosystems: The Most Important Channel Programs for Cloud

Analyst: Carl Brooks

Publication Date: Q3 2017

Every major cloud infrastructure provider now has a channel delivery ecosystem and multiple moving parts. Here's how the most important ones work and what that means for service providers and consumers large and small. This report explores the current state of the cloud channel and the major trends that will shape it in the immediate future.

Preview: Trends in Cloud and IT Services 2018

Analyst: William Fellows

Publication Date: Q4 2017

Cloud and IT service markets continue to evolve rapidly. This report provides a view of key trends that will affect the market in 2018. It details the top trends, likely impact and recommendations for each.