

## Hype Cycle for Application Services, 2021

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Initiatives: [IT Services and Solutions](#); [Applications and Software Engineering Leaders](#)

There is a new urgency in application services on accelerated engagements, digital as a default, delivery resilience and services anytime/anywhere. SPVM leaders must track the evolution of emerging market offerings to make informed investment decisions for an optimal services sourcing strategy.

### Strategic Planning Assumptions

By 2023, lack of skills and increasing complexity will force the majority of clients to seek smaller, more agile cloud migration partners.

By 2023, business-outcome-based contracting will rebound, exceeding pre-COVID-19 levels driven by the need to support digital transformation mandates.

## Analysis

### What You Need to Know

Accelerating digital transformation to achieve adaptable, resilient business platforms is the emerging priority for enterprises. This is driving a focus on solutions rather than just services and a move to new digital delivery models — “being digital” rather than merely using digital tools to deliver traditional services more efficiently.

For 2021, this shift in priorities significantly changes how quickly businesses must identify and buy relevant services. Enterprises have had to rapidly connect with customers, digitize operations and rebuild revenue. This has driven an acceleration in the need for IT services but, more than that, it has accelerated the need for services to move beyond the traditional delivery of using digital tools. The emerging services, such as continuous product-centric services and the evolution of work from home (WFH) to anywhere services, use new delivery models with embedded digital ways of working that focus on outcomes and solutions. We can clearly see this in the new entrants to the Hype Cycle.

This Hype Cycle describes the pace and maturity at which application service offerings are evolving to support the post-COVID-19 normals of digital acceleration, platform resilience, anywhere services and composable business.

### The Hype Cycle

Progressive organizations <sup>1</sup> are embracing “being digital” and the 2021 Hype Cycle reflects this renewed focus on revised delivery models for application services. The innovation profiles that were related to technology alone have been removed and the remaining services-specific profiles fall into three areas: traditional services that improve by using digital technologies; services going digital by breaking into components; and new delivery models that are changing how services are consumed, being digital.

Using digital technologies, such as cloud, AI and automation, are services such as data and analytics services, service integration and management (SIAM) and multicloud management. Service providers have packaged tools, processes and capabilities to make these services easily purchased and more effective for traditional IT delivery.

The idea of assembling components to make business platforms has been very hot in recent years and the associated services are part of the second set of services on this Hype Cycle. Services such as API testing services, PMO/PPM as a service, and IoT services are evolving rapidly to support the idea of a composable business. Parts of traditional services are being broken up to support this idea of assembling as needed rather than a long-term engagement for a bundle of generic IT services.

Gartner's 2021 IT Services Survey <sup>2</sup> highlights how organizations are shifting services sourcing from cost-led to business-focused with co-creation and product-centric strategies. This can be seen in the third group of services on the Hype Cycle that includes continuous product-centric services, quality engineering, continuous quality, ecosystem SIAM, autonomous testing and anywhere services.

Many profiles have been renamed in line with the services focus and the following profiles have been added to the Hype Cycle this year:

- Anywhere services
- Ecosystem SIAM
- Continuous quality
- Autonomous testing
- SaaS post-go-live services
- Managed IoT services
- Outcome-based service contracting for IT/OT services
- API management PaaS

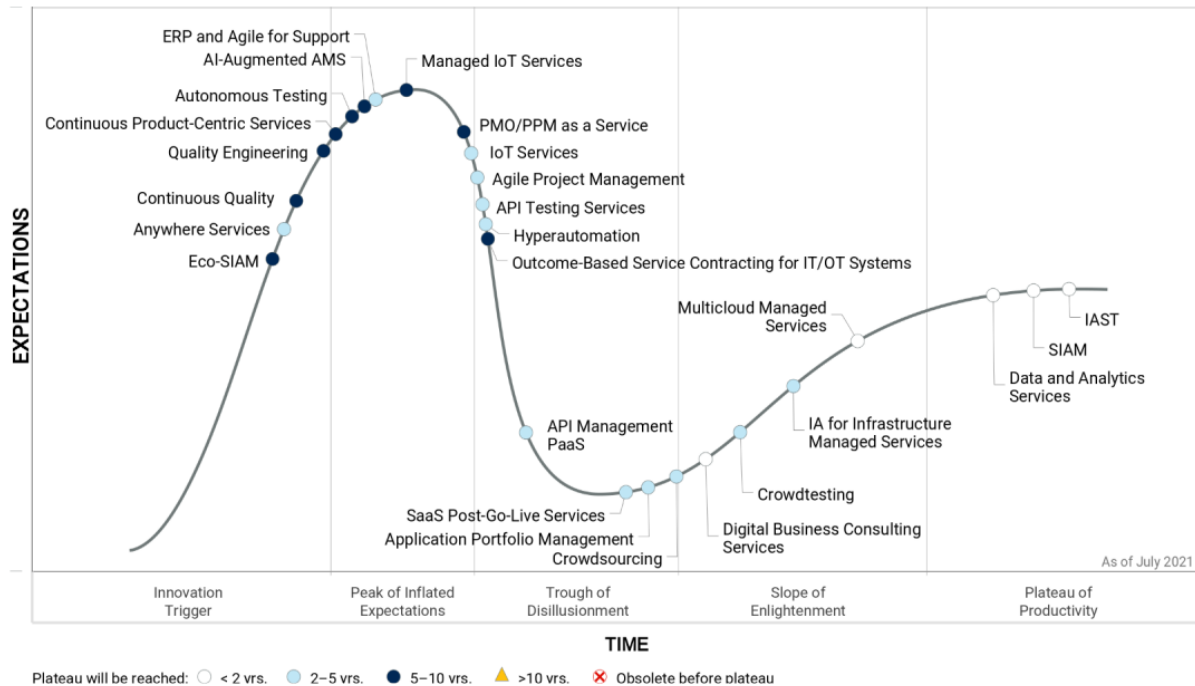
#### Name Changes:

- Managed crowdsourced communities renamed to crowdsourcing
- Cloud service brokerage renamed to multicloud managed services
- Managed IOT services shortened to IOT services
- Intelligent automation for application managed services shortened to AI-Augmented AMS

- Interactive application security testing shortened to IAST

**Figure 1: Hype Cycle for Application Services, 2021**

## Hype Cycle for Application Services, 2021



**Gartner**

Source: Gartner (July 2021)

## Downloadable graphic: Hype Cycle for Application Services, 2021

### The Priority Matrix

The Priority Matrix is a useful shortcut for visualizing risk and reward in different innovation profiles on the Hype Cycle. The 2021 profiles showing the most significant benefits (high or transformational) are typically in the earliest stages of maturity, but they have relatively fast adoption rates or are passing through the Peak of Inflated Expectations. A good number now are delivering high benefits with less than two years to maturity; a fair amount are in the two- to five-year range; and the largest number are in five to 10 years.

The services Hype Cycle contains a large variety of innovations, most of which can have a large impact on the particular service area, but the impact on the business as a whole depends on the transformational nature of that service. For example, those of moderate benefit, such as anywhere services, can make a huge impact on access to capabilities and have significant savings accrued on the IT delivery model, but the organization itself will not change. However, digital business consulting, data and analytics services, multicloud managed services, and IAST have a high impact on the organization in the very near term. DBCS is for transforming the business itself, data and analytics services are providing new insights for business change, MCMS is supporting the inevitable move to cloud technology platforms, and IAST is securing the security of the new platforms created. Sourcing, procurement and vendor management (SPVM) leaders should make sure they are progressing those innovations now.

**Table 1: Priority Matrix for Application Services, 2020**

(Enlarged table in Appendix)

Benefit ↓	Years to Mainstream Adoption			
	Less Than 2 Years ↓	2 - 5 Years ↓	5 - 10 Years ↓	More Than 10 Years ↓
Transformational	Digital Business Consulting Services	Agile Project Management	Outcome-Based Service Contracting for IT/OT Systems	
High	Data and Analytics Services IAST Multicloud Managed Services	API Testing Services Application Portfolio Management ERP and Agile for Support Hyperautomation IA for Infrastructure Managed Services IoT Services	AI-Augmented AMS Autonomous Testing Continuous Product-Centric Services Continuous Quality Managed IoT Services PMO/PPM as a Service Quality Engineering	
Moderate	SIAM	Anywhere Services API Management PaaS Crowdsourcing Crowdtesting SaaS Post-Go-Live Services	Eco-SIAM	
Low				

Source: Gartner (July 2021)

## On the Rise

### Eco-SIAM

Analysis By: Jim Longwood, Andrew Miljanovski, DD Mishra

**Benefit Rating:** Moderate

**Market Penetration:** 1% to 5% of target audience

**Maturity:** Adolescent

#### Definition:

Ecosystem service integration and management (Eco-SIAM) is a role that coordinates and integrates service delivery management of an ecosystem of internal and external IT services providers in a hybrid IT service environment that includes traditional, cloud, and emerging digital, agile, DevOps, XaaS and IoT services. It can be undertaken by the client or by a third-party service provider appointed by the client or a combination of both.

#### Why This Is Important

As digital, agile, DevOps, cloud, product-centric approaches and IoT adoption have grown, multivendor management of hybrid IT service ecosystems has become more complex. Eco-SIAM is an evolution of the traditional SIAM role, which focused on managing multiple (three to seven) traditional service providers to deliver end-to-end service outcomes. Eco-SIAM helps SPVM leaders address the need to manage more providers and diverse service types in a more dynamic environment with new tooling demands.

#### Business Impact

The Eco-SIAM role is key to achieving end-to-end business and service outcomes in contemporary multisourced and product-centric service ecosystems. IT operations now involve many more service providers, service types and interdependencies. End-to-end service outcomes are even more critical to ensure business disruption is not caused by the failure of one provider in the service value chain.

#### Drivers

The evolution of the Eco-SIAM role from the traditional SIAM role is being driven by the following factors:

- Increasing adoption of digital and new service categories by contemporary enterprises requiring a more ecosystem-based vendor management approach to deal with even more complexity.
- The need for increased speed in adopting and onboarding new service categories and providers.
- Moving to product-centric service delivery involving multidisciplinary project and service teams.
- Increasing complexity of integrating handoffs between provider services at the process, toolset and operational level.
- The need to interface more diverse service delivery categories such as agile, DevOps, digital, cloud/XaaS, IoT and niche communications service providers.
- Need for intelligent automation of service interfaces, along with end-to-end performance monitoring and reporting.
- Evolution of SIAM-focused toolset offerings, usually ITSM-based, to simplify integration, e.g., from 4me, ONEiO and Perspectium.
- The traditional SIAM role was based on a more static scenario, typically involving three to seven more-traditional service providers, versus a more dynamic and complex environment, often with double the number of providers involved in the service value chain.

## Obstacles

- If your SPVM function isn't managing your existing service providers effectively, e.g., using the traditional SIAM role, then it's not possible to create a collaborative team-based ecosystem necessary for the Eco-SIAM role to succeed.
- Deciding whether to insource or outsource the role via a managed service or hybrid approach is not straightforward and can involve much politics among different IT groups such as I&O, architecture, vendor management and procurement.
- Building and justifying the business case for adopting the Eco-SIAM role is challenging to build and get approved. Ensure you include resourcing, tooling and/or external vendor costs along with key benefits to the organization.
- If taking a DIY approach, obstacles include lack of budget to buy and integrate the required toolsets, so consider the build-operate-transfer model in this scenario.

- A “big bang” implementation mentality is an obstacle to taking a workable staged implementation journey of the role.

## User Recommendations

Leverage traditional SIAM lessons learned, such as:

- Allocate senior SPVM staff to deliver and manage the Eco-SIAM role and service providers.
- Foster a collaborative working environment built on trust among all parties.
- Ensure your business case has a suitable budget for a staged Eco-SIAM implementation journey.
- Use workable OLAs outlining team expectations via clear identification of individual and joint roles and responsibilities, allocation of agreed end-to-end KPIs, and performance measures.

Include specific critical success factors for Eco-SIAM adoption:

- Evaluate emerging offerings, e.g., for SLA/OLA auditing and solution brokering as well as SIAM-focused toolsets.
- Evaluate best-of-breed SIAM providers for bundled communications and IoT services.
- Ensure a can-do and dynamic attitude to delivery of digital services particularly in agile and DevOps scenarios.
- Ensure that candidate providers work collaboratively and dynamically together in your ecosystem.

## Sample Vendors

Capgemini; Orange Business Services; Unisys

## Gartner Recommended Reading

[The SIAM Role Is Critical in Managing Multiple Outsourced Service Providers](#)

[Product-Centric Organizations Must Repackage Outsourcing Deals to Incorporate Agile and DevOps Services](#)



[Build on Your Vendor Management Capabilities When Insourcing the MSI-SIAM Role](#)

[Use Our Checklist to Evaluate and Enhance Your Readiness for the Dynamic Sourcing of Digital Business](#)

## **Anywhere Services**

**Analysis By:** Alan Stanley

**Benefit Rating:** Moderate

**Market Penetration:** 5% to 20% of target audience

**Maturity:** Emerging

### **Definition:**

The pandemic in 2020 pushed service providers to extreme levels of remote delivery and with that came the realization that optimal location and use of on-site resources needs to be reevaluated. The concept of Anywhere Services moves away from the “shore” concept to one where services can be delivered remotely and anywhere.

### **Why This Is Important**

The concept of Anywhere Services is not a new technology or a massive capability shift, but a new way of thinking about IT services delivery. With the rise of agile methodologies and advances in technologies, the most suitable locations for IT services delivery have been evolving. But the sudden and immediate move to remote delivery has made all organizations to at least reevaluate their sourcing strategies. At Gartner, we call this concept Anywhere Services.

### **Business Impact**

With the rapid move to 100% remote delivery, it is now clearer that much of the historic interaction was more about lack of trust rather than purely more effective delivery. The need now is to look very carefully at what are the optimal features that are needed for delivery of services. Now it is a combination of cost, availability, time zone overlap, security, and cultural affinity that define the resource required. It is not offshore or onshore but anywhere that meets the requirements.

## Drivers

- Traditionally, colocation and social interaction were hallmarks of a successful agile team. Through new practices, such as remote collaboration techniques and maintaining personal connections, agile teams managed the move to distributed agile with little to zero reported delivery disruption.
- During the COVID-19 pandemic, application development and maintenance projects continued, and a high degree of remote delivery was achieved.
- During the pandemic recovery process, organizations are asking the following questions: If off-site is an option, can it be to a low-cost location? Is this a desirable and sustainable model? Do I still need internal staff, providing this work?

## Obstacles

- Anywhere Services is a concept and not related to a particular technology (although collaborative tools and connectivity have of course contributed immensely). It will very quickly become mainstream for IT services sourcing.
- Organizations with strict requirements associated with security and sovereignty of data may need to balance these requirements against the upside of Anywhere Services.
- Progressive organizations will accelerate delivery and reduce costs by leveraging this option and holding service providers more accountable for outcomes as they separate themselves from the “where” on the IT services delivery.

## User Recommendations

IT leaders looking at their IT services sourcing strategy should:

- **Forget “shore” and think “time.”** IT leaders must move their analysis of resource requirements criteria to real-time, near-time, off-time and, if fully automated, no-time.
- **Establish revised security policies.** The “shore” is still significant where security and privacy is concerned, but work from home (WFH) imposes additional factors. Assess the combination of country and delivery location and update/create controls accordingly.

- **Contract for consultative resources and not for dedicated teams when appropriate.** As all implementation and consulting work will be primarily remote, contracts should use service provider staff on an as-needed basis, with a reduction in overall billable time.
- **Reevaluate what roles are required in-house versus outsourced.** The opportunity exists to source any activity much more widely and at cost-effective locations. Reevaluate the reasons you are using for internal staff.

## Gartner Recommended Reading

[Setting Up Remote Agile in a Hurry?](#)

[Market Trends: Post-COVID-19 Planning Assumptions for Consulting and Outsourcing Firms](#)

[Forecast Analysis: Remote Workers Forecast, Worldwide](#)

[How Agile, Digital and Automation Drive the Increase in Nearshore IT and Business Services and What to Do About It](#)

[Security Best Practices for Work-From-Home Scenarios](#)

## Continuous Quality

**Analysis By:** Joachim Herschmann, Jim Scheibmeir

**Benefit Rating:** High

**Market Penetration:** 5% to 20% of target audience

**Maturity:** Adolescent

### Definition:

Continuous quality is a systematic approach toward process improvement to achieve the quality goals of business and development. A continuous quality strategy fosters a companywide cultural change to achieve the goal of making “quality” the responsibility of all. It synchronizes quality assurance and testing with DevOps processes and encompasses the practices that help mitigate risks before progressing to subsequent stages of the software development life cycle.

## Why This Is Important

Many DevOps organizations are practicing continuous integration and continuous deployment, yet a continuous approach to quality is often missing. The ability to consistently deliver business value with high quality has become critical for organizations seeking to mature their DevOps processes. Continuous quality encourages a holistic and proactive approach with functional and nonfunctional requirements driving the design, development and delivery of products.

## Business Impact

The adoption of a continuous quality strategy significantly improves an organization's ability to serve and delight its customers. Continuous quality enables solutions to be delivered at a greater release rate and with fewer defects than traditional quality control practices. It provides the framework for operational excellence that drives value, supports the realization of business outcomes for customers and streamlines operational processes.

## Drivers

- Raised end-user expectations for application quality, which require a shift to a more holistic view of what constitutes superior quality that delights users.
- The pressure to innovate rapidly in order to launch differentiated products in the market quickly without compromising on quality.
- The ability to consistently deliver business value with consistently high quality to mature DevOps processes.
- The need to ensure that teams are equipped to create a superior user experience, build features that fit the market's timing, and enable the characteristics of an application that deliver value faster than they create technical debt.

## Obstacles

- Lack of clear goals: Successful continuous quality requires clear goals that are aligned with the priorities of the business.
- Internal pushback: Continuous quality requires engaging stakeholders across the organization and empowering them to be more accountable. Such a holistic approach can be seen as restrictive and requires consensus on usage across all team members.
- Loss of productivity: Changing organizational culture and engaging in new practices require significant investment and time. This will impact current timelines and can cause a decrease in productivity prior to reaching steady productivity.
- Limitation to testing only: Continuous quality includes designing a product with quality in mind, building it with clear quality objectives and facilitating the discovery of issues early in development.
- Focusing only on tools: Continuous quality requires a change in organizational culture. Tools are enablers of quality but tools on their own won't solve problems.

## User Recommendations

- Move away from the traditional application- or project-centric model of quality to a holistic quality approach by adopting an ecosystem-centric view of quality and a focus on business outcomes.
- Accelerate product delivery by championing a continuous quality mindset and involving stakeholders across the organization.
- Allocate ownership and appoint staff with the required skills needed for continuous quality by identifying the required roles, technologies and practices.
- Enable collaboration with user experience (UX) designers and customer experience (CX) teams to infuse quality right from the inception of an idea.
- Establish relevant quality metrics based on the joint objectives that the business and IT are trying to accomplish.
- Task teams with developing continuous quality practices before choosing tools.

## Gartner Recommended Reading

[Innovation Insight for Continuous Quality](#)

[Adopt a Performance Engineering Approach for DevOps](#)

[Improve Software Quality by Building Digital Immunity](#)

[Maverick\\* Research: Software Testing and the Illusion of Exterminating Bugs](#)

[Innovation Insight for Autonomous Testing](#)

## **Quality Engineering**

**Analysis By:** Susanne Matson, Jaideep Thyagarajan

**Benefit Rating:** High

**Market Penetration:** 5% to 20% of target audience

**Maturity:** Adolescent

### **Definition:**

Quality engineering is the discipline of injecting quality across all stages of the software development life cycle (SDLC). It is the application of lessons learned and IP generated through quality assurance to engineer better business, IT or OT processes, products, solutions, services and applications from the outset of a development project.

### **Why This Is Important**

Quality engineering (QE) is more widely practiced in organizations leveraging agile practices and DevOps methodologies. By enabling continuous quality, QE supports organizations to advance their continuous integration, continuous deployment and continuous delivery initiatives and programs. QE is supporting the continued improvement work for better agility and integration.

QE is essential to ensure differentiated user experiences in today's competitive digital markets.

## Business Impact

- QE service offerings can help improve differentiation in developing or improving business, IT or OT processes, products, solutions or services.
- Benefits to be gained in development projects include: time to market; improved overall quality; decreased costs due to automation and elimination of manual labor; and improved consumer experience.

## Drivers

- Organizations look to apply a QE approach to help them gain efficiency and business benefits by not separating the ideation and requirements phases from design, build and test. These are often owned by different entities — business versus IT.
- As organizations focus on what needs they have after the accelerated digital transformation following the pandemic, more users identify QE as a domain to look into. The intent is to help them reach quality needs at an increased pace.
- QE as a competence is focused on applying lessons learned on what works within a domain, for a specific purpose and for a specific user base. Applying analytics and intelligent automation during the development life cycle as part of QA services will enable organizations to engineer better processes, products, solutions or services without having to go through multiple iterations.
- Organizations use quality engineering to implement quality across the entire SDLC through standardization and more effective use of tooling.

## Obstacles

- Although QE is commonly embedded as an integral component in business or technology consulting, challenges within the application services domain remain.
- The skill level needed for a quality engineer is more complex than traditional testing work.
- Cultural issues such as lack of collaboration between teams such as testing, development and operations teams can hinder QE.
- Finding the right QE vendor partner can be a challenge.

## User Recommendations

- Formalize the inclusion of QE in the development process, as the default mechanism to feed relevant product, solution or service artifacts into the ideation phase.
- Feed best practices into the functional and technical design, and do not wait for QA to identify flaws during development or, even worse, in production.
- Leverage service providers' ability to apply an integral approach. These different capabilities can then be combined across development, agile, DevOps, advisory and industry teams.
- Utilize automation, predictive analytics and machine learning to support QE as they can help improve focus, effectiveness and insight into the testing process.
- Apply an integral approach from business, IT and OT perspectives, and actively focus on identifying, consolidating and maintaining QE artifacts as part of any development project.

## Sample Vendors

Accenture; Capgemini; Cognizant; Deloitte; IBM; Infosys; TCS; Wipro

## Gartner Recommended Reading

[Application Testing Services must Evolve to Meet Client Demands in Agile and DevOps](#)

[Magic Quadrant for Application Testing Services, Worldwide](#)

[Critical Capabilities for Application Testing Services, Worldwide](#)

[Optimize Application Testing Quality and Speed With Embedded Intelligent Automation Services](#)



## At the Peak

### Continuous Product-Centric Services

Analysis By: Neil Barton

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Early mainstream

#### Definition:

Continuous product-centric services are those delivered by an external service provider under a long-term contract to supply a multidisciplinary team that builds, deploys and supports software using agile and DevOps approaches.

#### Why This Is Important

The post-COVID-19 digital surge is accelerating the speed at which organizations are using agile, DevOps and cloud. This is causing buyers of IT consulting and outsourcing to negotiate commercial models which are very different from the implementation statements of work (SOWs) and managed service contracts of the waterfall era.

#### Business Impact

- Purchasing continuous product-centric services helps organizations achieve the rapid time to market offered by agile and DevOps using global delivery models.
- The services are ideal for cloud-native software development projects, making use of self-service provisioning, automated testing and frequent automated deployment of changes.

#### Drivers

- One of the underlying principles of DevOps is to eliminate delays and waste.
- However, functional outsourcing creates delays in the handoff from one supplier to another of tasks such as provisioning, releases to production and incident escalation.
- This tension has been exacerbated by the recent growth of product-centric models (see [Strategic Roadmap for Becoming a Digital Product Delivery Organization](#)).

- The writer Martin Fowler describes product-centric teams as “durable, ideate-build-run teams working on a persistent business issue.”

## Obstacles

- Buyers of custom software development services prefer contracts where suppliers are accountable and manage delivery risk. Vendor accountability is very hard in an agile environment when the developers come from one supplier, the testers from another, and production support from a third.
- Buyers are therefore now sourcing an integrated multidisciplinary squad or pod, in which everyone on the team except the product owner comes from the same supplier. Gartner terms this “continuous product-centric services.”
- On smaller contracts to build digital business cloud-hosted customer-facing applications, continuous product-centric services are widespread and normal. Recently, buyers of large outsourcing contracts have turned away from outsourcing IT functions in favor of the continuous product-centric model. See [Case Study: The Estée Lauder Companies Is Transforming Its IT Services Sourcing for Digital Delivery](#).

## User Recommendations

- Sourcing and vendor managers of multiyear IT outsourcing contracts must evolve the scope of their contracts. Existing contracts are likely to be structured in functional silos such as consulting, development, testing or operational support.
- To get the best from DevOps, make contract changes to add new continuous product-centric services.
- Over time, consumption of functional outsourcing services can be scaled down while consumption of continuous product-centric services is ramped up. (See [Product-Centric Organizations Must Repackage Outsourcing Deals to Incorporate Agile and DevOps Services](#).)

## Gartner Recommended Reading

[How Functional Outsourcing Will Radically Change in a World of Agile and DevOps](#)  
[Market Insight: Grow DevOps Services Into Continuous Product-Centric Services](#)  
[Predicts 2020: Agile and DevOps Are Key to Digital Transformation](#)  
[5 Metrics to Demonstrate High-Performance Agile Development Services](#)  
[The Future of DevOps Toolchains Will Involve Maximizing Flow in IT Value Streams](#)

## Autonomous Testing

Analysis By: Joachim Herschmann, Jim Scheibmeir

Benefit Rating: High

Market Penetration: 1% to 5% of target audience

Maturity: Adolescent

### Definition:

Autonomous testing comprises AI- and ML-based technologies and practices to make software testing activities independent from human intervention. It continuously improves testing outcomes by learning from the data collected from performed activities. It extends traditional test automation beyond the automated execution of test cases to include fully automated planning, creation, maintenance and analysis of tests.

### Why This Is Important

Software engineering leaders seeking to release faster without degrading quality are looking for more efficient ways of testing which includes all phases of the testing life cycle. As such, autonomous testing is a driver for a holistic approach to automating the broader set of quality and testing activities related to requirements quality, design quality, code quality, release quality, and operational resilience in an integrated way. This increases the degree of autonomy for those activities.

### Business Impact

The adoption of autonomous testing has the potential to significantly improve an IT organization's ability to serve and delight its customers. It can be an enabler for adjusting testing scenarios and overall software quality parameters as part of a continuous quality initiative aimed at optimizing end-user experience. It will also help to constitute a closed-loop system that provides continuous feedback about critical quality indicators.

## Drivers

- A high dependency on human expertise and interaction limits how quickly modern digital businesses can design, build, and test new software.
- Where automated testing is already in place, current levels of automation often remain below expectations due to a continued dependency on human intervention in maintaining the automation as applications under test (AUT) evolve.
- The pressure to innovate quickly in order to differentiate in the market without compromising on quality relies both on a higher velocity and a higher degree of autonomy of the related activities.
- While delivery cycle time is decreasing, the technical complexity required to deliver a positive user experience and maintain a competitive edge is increasing. The answer is not more testing but more intelligent testing enabled by AI technologies.

## Obstacles

- Risk of doing nothing: Waiting until feature-complete autonomous testing solutions are available leads to a loss in competitive advantage, and reduced agility and innovation.
- Unrealistic goals: Underestimating the time required to acquire new skills and setting wrong expectations about the time required to become successful.
- Managing data quality: Gathering, cleaning and processing of data and training of the model are not trivial tasks and require adequate skills. Moreover, they are not yet autonomous processes.
- Internal pushback: Autonomous testing requires significant investment in new areas such as data science and analytics. While this will motivate some team members, others may see the approach as a threat to their known way of working and they may be afraid to adjust.
- Immaturity of tools: Currently available tools are still relatively new, have a narrow scope of technology coverage and still need to prove their value.

## User Recommendations

- Set the right expectations about where autonomous testing can provide value, what its current limitations are and what is needed for it to be successful.
- Maximize the impact of autonomous testing by leveraging it as an enabler of a systematic approach to achieve the quality goals of business and development. Focus on key business value enablement and determine where it can help with revenue, cost, and risk management.
- Familiarize yourself with advanced analytics and ML. Invest in augmented analytics tools that employ ML algorithms to mine existing data for current and future projects.
- Allocate ownership and appoint staff with the required skills such as data analytics by identifying the required roles, technologies and practices.
- Select tools that best match available skills and development style by assessing application profiles and different teams' needs.

## Sample Vendors

Applitools; Diffblue; Functionize; mabl; ProdPerfect; Testim

## Gartner Recommended Reading

[Innovation Insight for Autonomous Testing](#)

[Innovation Insight for Continuous Quality](#)

[Improve Software Quality by Building Digital Immunity](#)

[Infographic: Artificial Intelligence Use-Case Prism for Software Development and Testing](#)

## AI-Augmented AMS

Analysis By: Gunjan Gupta, Brett Sparks

**Benefit Rating:** High

**Market Penetration:** 5% to 20% of target audience

**Maturity:** Adolescent

**Definition:**

AI-augmented application management services (AMS) is the application of technologies such as machine learning, artificial intelligence for IT operations, natural language processing and other AI technologies to automate the support, maintenance and enhancement of a portfolio of business applications.

**Why This Is Important**

To improve their services, AMS providers are increasingly leveraging AI. The four primary use cases are:

- Using ML and RPA to proactively filter, prioritize and diagnose errors prior to an incident.
- Automating email, ticket or phone call requests, inclusive of correct routing and proposal of common solutions, from L1 support using ML and NLP
- Focusing on defect prediction, test data generation and test insights bots using AI/ML
- Applying AI for privacy preservation while accessing and processing data

**Business Impact**

AI-augmented AMS offers multiple potential benefits:

- Improved customer satisfaction
- Increased quality of managed systems and data processed
- Better responsiveness to the business
- Potential delivery cost reductions of over 50%, depending on how many incidents can be prevented or resolved by automation
- Bots and ML capabilities can be easily scaled up, freeing development teams to concentrate on higher-value efforts directly impacting their business or creating new digital products

## Drivers

- Due to market demand, AMS service providers use these platforms to improve the quality and price competitiveness of service delivery mostly for transactional tasks such as test execution, application operations and incident resolution.
- Large service providers have built their own platforms for intelligent automation. Examples include IBM's Watson, Accenture's myWizard and AIP+, TCS's Digitate Ignio, Wipro's HOLMES, Infosys' Nia, Cognizant's Automation Center, DXC Technology's DXC Bionix, HCL Technologies' DRYiCE, Capgemini's Intelligent Automation Platform, and Atos's SyntBots. Small and midsize service providers are building platforms with software partners such as IPsoft, Arago and Ayehu.
- Clients also ask for improved reliability of their existing business applications and seek service provider support to enhance system maintenance using AI capabilities.

## Obstacles

- The intelligence of the current solutions does not seem to increase at the same speed as the increased complexity of client application and infrastructure architectures. However, the providers continue to make investments in adding new bots and use cases to their offerings.
- Investment in automation tools is expensive, but often the benefits do not become clear until after implementation. These tools work well (or badly) depending on data volume, data quality and the sophistication of the learning algorithms. Vendors find it hard to commit to benefits before they have seen the client's data.
- Most of the use cases are focused on reducing run and operational issues, not on the high-value tasks of understanding a business need and crafting a solution.

## User Recommendations

- Sourcing and procurement teams should expand their evaluation of competitive bids for managed services to take into account the commitments that service providers are willing to make using their automation platforms.
- Ensure that incident log data or repetitive workload tasks are comprehensive, clear and complete, and not brief, terse or ambiguous, as AI systems will learn by reading these incident logs and identifying patterns in them.
- Sourcing and procurement teams should work closely with providers to identify how they can adopt AI-augmented managed services by quantifying the value delivered. The value delivered should be reduced effort, higher quality and cost savings, and not just adding a new technology to the ecosystem.

## Gartner Recommended Reading

[How Agile, Digital and Automation Drive the Increase in Nearshore IT and Business Services and What to Do About It](#)

[Optimize Application Testing Quality and Speed With Embedded Intelligent Automation Services](#)

[How to Invest in Intelligent Automation for Application Management Services Infographic: Artificial Intelligence Use-Case Prism for Software Development and Testing](#)

[Emerging Technologies: Critical Insights Into AI-Augmented Software Development](#)

## ERP and Agile for Support

Analysis By: Tim Faith

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Adolescent



**Definition:**

Agile support for ERP focuses on delivering new business capabilities in a rapid and iterative fashion. Use of agile allows for faster improvements to ERP systems through internal development or activating new features provided by a vendor. Agile support is composed of small dedicated product teams (from the business and IT) collaborating closely together to ensure velocity and quality.

**Why This Is Important**

Agile support for ERP is near the peak of hype. The adoption of agile in ERP support is further along than for ERP implementation, due to the smaller scale of incremental updates. Enterprises have deployed pockets of agile practice in their front-office or custom applications. Enterprises are expanding agile in support of back-office systems such as ERP.

**Business Impact**

- Agile practices have shown to produce better alignment of business and IT resources.
- Applying agile to support ERP applications enhances ability to deliver value within the cadence of vendor product updates.
- By focusing on the frequent testing and demonstrating of working configurations and extensions in sprints, application leaders can quickly respond to ensure quality and value.

**Drivers**

- The pace at which ERP application vendors deliver updates/enhancements puts emphasis on frequent cycles of evaluation, configuration, testing and adoption in shorter time periods.
- Businesses adopting ERP SaaS applications are seeking enhanced capabilities and accelerated business value, instead of a technology upgrade.
- Organizations are leveraging automated testing options to execute as often as possible, based on vendors' release schedule or major integration changes to external systems.
- Product management techniques are crossing into packaged application support, requiring more focus on business processes for delivering value.

## Obstacles

- The COVID-19 pandemic and associated remote-working challenges and headcount reductions inhibit the ability to stand up for agile teams.
- Current ERP support teams focus less on value enhancement and more on “business as usual.”
- Cost cutting may lead organizations to use application management services (AMS) for ERP support more extensively. While AMS providers may adopt agile internally, their support structures are not aligned well to the product team characteristics of being dedicated, proactive and collaborative.
- Financial barriers may not dissipate until 18 months to three years with enterprises then focusing on other areas of business for building competitive advantage.
- Organizations may adopt an ERP Strategy that views ERP applications as systems of record for standardization.

## User Recommendations

Application leaders focused on ERP must:

- Enhance collaboration with business partners by establishing fusion teams of business and IT talent aligned to deliver value in business processes.
- Develop versatile support staff and grow their agile competencies through coaching and mentoring from internal or external resources in agile practices.
- Ensure a high-quality, compliant application is provided that identifies and mitigates risks quickly.
- Apply agile governance practices on an ongoing basis to support and monitor the product teams and align their efforts across the organization.

## Gartner Recommended Reading

[How to Build Agile ERP Support With Product Teams](#)

[Solution Path for Agile Transformation](#)

[Agile Product Management Teams Require Combined Generalist and Specialist Skills to Succeed](#)

## Managed IoT Services

Analysis By: Eric Goodness

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

### Definition:

Managed IoT services are third-party services that support part or all of an end user's production IoT solution on an ongoing basis. Delivery of managed IoT services is most often enabled by cloud-based tools and skilled personnel observing structured processes in an operations center. However, there is demand for on-premises delivery, especially where IoT integrates with a certain class of OT systems.

### Why This Is Important

Managed IoT services integrate and aggregate a range of technologies included within the categories of edge devices, IoT platforms and IoT-enabled applications. Overall, managed IoT services converge IT and OT through integration and offload the day-to-day monitoring, management and related analytics of IoT systems that contribute to business outcomes. Additionally, the service addresses a significant lack of skills to design, build and run IoT solutions.

### Business Impact

There is increasing demand for IoT-enabled business benefits, such as improved customer experience, creating new "servitized" products, and new value creation such as revenue and insights from data. An enterprise deploys managed IoT services to substantially reduce the time to value of deploying IoT and to contractually shift the risk of IoT success to external providers to ensure planned benefits and outcomes associated with digital business.

### Drivers

Enterprises recognize the need to offload the management of their IoT solutions for a number of reasons, including:

- Cost reductions
- Access to skills that do not exist within the company

- Improved user experience, such as the use of predictive maintenance
- Effective monitoring and management to guarantee a certain level of availability and performance
- Security

Managed IoT services moved further toward the Peak of Inflated Expectations on the Hype Cycle. The move is based on the increase in IT-centric and IoT service providers now offering managed IoT services and the use-case examples being shared with Gartner. Perhaps the fastest-growing use of managed IoT services lies with discrete manufacturers creating smart connected products.

## Obstacles

Obstacles for success with managed IoT services include:

- A lack of end-user experience for upfront planning and strategy development for these services.
- An inability to focus on simply scoped use cases, such as condition-based monitoring of a non-IT asset, which are generally more successful than broader, far reaching digital transformation projects.
- A lack of experience to identify and define remedies for nonperformance based on business impact.
- A lack of service providers with deep expertise and experience across a wide range of use cases.

## User Recommendations

Align MSP attributes and capabilities within your sourcing selection criteria, including foundational elements, such as:

- Expertise in creating and managing complex multisourcing agreements that span the technologies, service delivery, and outcomes and SLAs.
- Professional services for the integration of devices, platforms and pushing sensor data to enterprise applications.
- Alignment of your key performance indicators (KPIs) with the SLAs of the managed services proposed.

## Sample Vendors

Accenture; Atos; Cognizant; Insight Enterprises; Orange Business Services; TCS; Wipro

## Gartner Recommended Reading

[Forecast: Internet of Things, Endpoints and Communications, Worldwide, 2020-2030, 1Q21 Update](#)

[Service Provider Insight: IoT Market Size by Sector](#)

[3 Areas to Drive IoT Differentiation Beyond Functions and Features](#)

[Survey Analysis: Focus on Practical Outcomes for IoT Projects](#)

## PMO/PPM as a Service

Analysis By: Anthony Henderson, Jim Longwood

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

## Definition:

PMO/PPM as a service (PPMaaS) includes PPM consulting, implementation and operational project services contracted to service providers for a fixed or variable and scalable program of work. PPM is an aggregate of all aspects of project, program, product and portfolio management. This includes PMOs, enterprise PMOs (EPMOs), and major IT initiatives for program operation and governance. It excludes offerings purely focused on staff augmentation or training services.

## Why This Is Important

For most organizations, major projects and programs cause spikes in demand for project or PMO resources. Few organizations can retain enough full-time staff with the necessary skills and experience to address all aspects of project, program and portfolio management, including the operations of business-unit PMOs and enterprise PMOs. One way to address these capability gaps is to contract for PPMaaS from specialist external managed service providers.

## Business Impact

Using PPMaaS-based resources helps organizations:

- Access experienced project and program managers, scaling up more quickly to meet variable demands, with a scalable pool of skilled resources bringing best-practice processes.
- Create an opportunity to develop, mentor and grow internal skills and capabilities.
- Focus attention on delivering the business outcomes in a more timely fashion without being distracted developing inexperienced contractor resources.

## Drivers

- With digital transformation and continuous change, traditional command and control project management practices are rapidly shifting to adaptive and product-based practices. CIOs are seeking flexibility, cost control, skills and experience, and more-dynamic capacity improvements to meet these requirements. This shift is driving demand for an increased usage for short- and long-term specialist PPM resources and services.
- Organizations need to keep pace with the varying demands and business fluctuations that are the norm in today's digital environment. To meet variable demand requirements, PPMaaS offerings range from traditional time and materials (T&M), to project-based and prepackaged PMO-managed services using a scalable catalog of PPM-related services.
- CIOs also wish to focus their existing resources on identifying candidate digital technologies and related agile/DevOps implementation services, often on a product-based approach. Using external PPMaaS providers frees up their key resources to focus on these new initiatives to reduce costs and improve productivity.

## Obstacles

- While leveraging PPMaaS can also drive efficiencies and reductions in costs, establishing internally or externally sourced PPM activities introduces new costs and risks. Often, externally provided PPMaaS requires assistance from sourcing, procurement and vendor management (SPVM) leaders. As this is an emerging trend, SPVM groups need to quickly increase their insight and experience in going to market, establishing and managing short- and long-term PPM contracts for these services.
- Elements such as contracting a provider whose resources are culturally compatible with your internal staff and understanding the nuances of delivering project resources in your industry, can be obstacles to the successful use of PPMaaS. Poor management of attrition rates of the PPMaaS provider can also reduce the efficiency of using these offerings.

## User Recommendations

- Define short- and long-term objectives, and conduct a needs assessment to determine what levels of services and experience make sense.
- Ensure that the PPMaaS offerings provide flexible and scalable access to talent when needed, with or without long-term commitment or extra permanent hires. Many providers offer it as an on-demand resource or as an add-on to existing implementation services.
- Ensure knowledge transfer provisions are included in the contract to reduce long-term dependency and development of the retained organization skills when services are complete.

## Sample Vendors

Capgemini; Core Consulting Group; CUPE International; DXC Technology; Jumar; MI-GSO | PCUBED; PM Solutions; Prosource; TCS; Tech Mahindra Business Services

## Gartner Recommended Reading

[How to Effectively Employ PPM and PMO as a Service](#)[Identify a Clear Statement of Requirements When Sourcing Services for Emerging PPM and PPMaaS Offerings](#)[Market Guide for Providers of PPM as a Service](#)

## IoT Services

Analysis By: Eric Goodness

**Benefit Rating:** High

**Market Penetration:** 20% to 50% of target audience

**Maturity:** Mature mainstream

**Definition:**

IoT services encompass support, maintenance and professional services to provide a range of business and technical expertise in support of initiatives where IoT is used to enable targeted outcomes. Various frameworks, methodologies and assets are within scope for IoT services. IoT services must be viewed within the broader remit of “digital services.” The core outcomes of IoT services lie in the enablement of data acquisition and data contribution to broader digital business strategies.

**Why This Is Important**

There is a lack of internal resources skilled in IoT technologies and how to operationalize the integration of IT, OT and IoT. Demand for IoT services continues to show strong growth across all enterprise sectors. The availability of a broad and deep pool of providers that can balance technical expertise with sector-specific acumen is key to accelerating the adoption of IoT for digital business impact.

**Business Impact**

Buyers seek IoT services to:

- Improve the processes related to strategy development and vendor due diligence relating to IoT technologies and business design patterns.
- Accelerate the time to solution to recognize internal (operations, processes) and external (market, customers) benefits from digital optimization and digital transformation.
- Reduce noncore resources and mitigate the risks of deployment, integration and support.

**Drivers**

The drivers that lead enterprises to consider IoT services from external providers include:



- The use of external service providers to offer the skills and expertise not found in most enterprises. The emerging market for IoT solutions has created a unique market landscape for IoT services. The most common service providers for IoT HW and SW are OEMs and ISVs. In fact, ISVs are responsible for integrating at least 60% of the IoT platforms in the market.
- The use of ESPs offers enterprises a way to derisk the deployment, integration and implementation of IoT-centric products in the enterprise. Users are able to hold providers to various SLAs to ensure proper functionality and outcomes from the IoT solutions. Risk mitigation is also extended to cost control for project deployment.

A fast-growing market of suppliers of IoT services that spans industrial equipment OEMs, traditional IT ISVs, IT and OT system integrators, and niche IoT providers (hardware and software) offering a catalog of IoT services that span design, build and run services. Most importantly, the growing pool of providers is not only able to address technology challenges, but also increasingly able to factor in business acumen relating to sector-specific and regulatory requirements of customers.

## Obstacles

The obstacles that deter enterprises from considering IoT services from external providers include:

- Determining the suitability of providers is challenging for many users. The market for providers is fragmented and expertise is distributed unevenly, usually by technology segments, IoT devices, middleware and applications.
- The market leaders for IoT strategy tend to reside with larger system integrators and consultancies. However, users continue to use the IoT platform vendors, no matter how small, as the main pool of ESPs for development and integration services for IoT solutions.
- The market has yet to see a broad pool of third-party maintainers for IoT products. This means maintenance and support services are mostly awarded to device OEMs and middleware vendors. Most of these providers are immature or small, and customer service is often not at the same level that users experience with larger IT companies.

## User Recommendations

Users must act now to optimize the IoT service provider selection process:

- Engage service providers early to accelerate successful IoT adoption by clearly defining the activities and success metrics to support the transition of IoT POCs to field trials and into production systems and services. Service fees charged ahead of the acceptance of production systems and services may be returned/credited back to the user organization.
- Create a plan to identify where your business will provide services, augment partnered services or source services entirely to external providers by auditing and aligning internal resources to IoT project phases and success requirements.
- Ensure access to the best resources across the service life cycle by abandoning legacy vendor management approaches. Vendor size and legacy have little to do with successful design, build and run IoT solutions. The IoT market is fueled by nontraditional service providers and models, such as revenue sharing for connected products.

## Sample Vendors

Accenture; Atos; Cognizant; Hitachi; Insight Enterprises; KORE; Vodafone

## Gartner Recommended Reading

[Tech Providers 2025: MSPs Must Lead the Adoption of Emerging Tech Services for Digital Businesses](#)

[Service Provider Insight: IoT Market Size by Sector](#)

[3 Areas to Drive IoT Differentiation Beyond Functions and Features](#)

## Sliding into the Trough

### Agile Project Management

Analysis By: Robert Handler

**Benefit Rating:** Transformational

**Market Penetration:** 5% to 20% of target audience

**Maturity:** Early mainstream

#### Definition:

Agile project management is a style of project management designed for continuous, connected activities in environments with higher degrees of uncertainty and change. Conventional project management uses on-time and on-budget delivery against an initial plan as a primary determinant of success. Agile project management focuses on constant incremental value delivery through dedicated teams, embracing success metrics provided via customer feedback.

#### Why This Is Important

Increased uncertainty is driving agile project management beyond application development into business, and PPM leaders must be prepared to support this shift. Agile project management makes sense when requirements are changing and the environment is unstable, which perfectly defines the current state of business today.

#### Business Impact

Anyone faced with delivering projects in environments with changing requirements that will impact traditional plans should care about agile project management. Externally facing functions, such as those connecting to customers or business partners, will likely be most impacted favorably by embracing agile project management. This is because they are likely delivering change that is impacted by what they connect to — and agile project management enables this type of constant change.

#### Drivers

- While prior to COVID-19, we witnessed some adoption of agile concepts outside of software development, the pandemic forced most to repeatedly pivot.
- Many business leaders self-proclaimed they are now agile after pivoting in response to COVID-19, and these self-proclamations were publicized.

- While a pivot in response to external changes isn't necessarily agile, many business leaders have publicly put a stake in the ground to be agile, which is one of the key drivers of movement in a Hype Cycle.
- In response to the pandemic, a majority of organizations accelerated digital business plans and increased digital business funding, which will likely provide insight and opportunity — warranting even greater use of agile project management in related areas.

## Obstacles

- Adopting agile is not easy. It requires a change in mindset, leadership support, significant training, organization change management and dedicated resources.
- Once leaders engrain the commitment required to embrace agile for projects, they may retreat or stall — often because of change resistance from those committed to traditional ways of doing things.
- Additionally, some types of projects simply don't lend themselves to agile, so there may be justified resistance in certain areas, or possibly false starts. Traditional project management still has, and likely will always, have a place for many types of projects.
- Resistance from finance departments over increasing the use of agile project management over categorization of expenses (e.g., CAPEX/OPEX), often at the behest of auditors, may be an obstacle.

## User Recommendations

- Secure leadership commitment to enable new ways of doing projects by highlighting the benefits and addressing the concerns.
- Identify business areas that have high degrees of change and uncertainty and would benefit from agile project management.
- Enable early success by providing training, coaching and possibly experienced resources.
- Modify internal processes to allow reprioritization of work based upon changes to the environment (e.g., shifting market needs) as opposed to following a rigid plan by providing guidance on practices, principles, roles and tools that are appropriate for business.

- Evolve project dashboard metrics for agile project management which emphasize “business outcomes” and customer satisfaction over on-time/on-budget.
- Leverage early successes to propagate best practices to areas that can benefit from agile project management.

## **Gartner Recommended Reading**

[Market Guide for Adaptive Project Management and Reporting](#)

[Overview of Agile Development Methodology](#)

[The Recipe for Enterprise Agile Success Has Adaptive Program Management Ingredients](#)

[Tool: Assess the PPM Capabilities Needed to Support the Projects-to-Product Journey](#)

## **API Testing Services**

**Analysis By:** Jaideep Thyagarajan

**Benefit Rating:** High

**Market Penetration:** 20% to 50% of target audience

**Maturity:** Early mainstream

### **Definition:**

API testing services refers to a set of testing activities that is performed directly and as part of integration testing to validate if the programming interfaces meet expectations for quality, functionality, reliability, performance and security. Focusing mainly on the business logic layer of the software architecture, API testing involves using software to send calls to the API, receive output and validate the system’s response.

### **Why This Is Important**

Defective APIs directly impact digital experiences, such as mobile apps and reactive web applications, meaning that API quality is critical. Poor-quality APIs impact developer experience, which is increasingly important as organizations use APIs internally and build external developer communities. Therefore, API testing services are an important consideration to mitigate business risk and to ensure seamless integration of applications with other services.

## Business Impact

- Organizationwide API strategies benefit from API testing services to ensure quality and consistency across the entire API portfolio.
- APIs that fail to deliver the expected level of quality, security, reliability and performance can thus have tremendous business impacts, both to the organization producing it and to those consuming it.
- Risks associated with application failure have broader business impacts; hence, the quality of the APIs produced and consumed is now more important than ever.

## Drivers

- Many organizations have created API platform teams composed of API center of excellence (COE) team members with a mandate to deliver high-quality, reliable APIs
- Organizations increasingly rely on APIs as part of their daily operations, such as logistics APIs for retail deliveries, and APIs into systems of record. These APIs must be reliable and well-designed.
- APIs are treated more like products than code. They are designed for consumption for specific audiences (e.g., mobile developers); they are documented; and they are versioned in a way that users can have certain expectations of their maintenance and life cycle. Because they are much more standardized, they have a much stronger discipline for security and governance, as well as being monitored and managed for performance and scale, thereby amplifying the importance of testing them.
- API testing services offer an opportunity to test the core functionality of the app without having to interact with a potentially disparate system. This helps in early bug detection, instead of them becoming larger issues during GUI testing, and thereby protects the application from malicious code and breakage.
- APIs have become a primary attack surface for many systems. These attacks have resulted in an endless stream of data breaches and other security incidents, yielding significant damage to organizations and individuals. As a consequence, SPVM teams — along with the business leaders whose applications APIs support — express significantly increased interest in API testing and security.
- Traditional testing skills and team culture do not apply naturally to APIs, because APIs are used by other systems — not directly by end users. API testing calls for a different set of skills that involves the ability to understand the business logic of the service in addition to scripting and coding skills. Therefore, seeking specialized API testing services is becoming a matter of priority for many SPVM teams.

## Obstacles

- APIs present challenges like broader attack surface area, higher potential for unexpected misuse and unpredictable demand, among others. These challenges translate to specific testing ramifications that require strong consulting skills to factor in all the API test scenarios, which some providers may struggle with.
- API testing includes tasks like preparing the environment on which the API will exist, updating the API testing requests scheme, deciding on the sequence of API calls and validating parameters, among others. These activities often call for a strong involvement of client-side resources as well.
- Incumbent vendors offering traditional testing services may not have strong API testing skills. So the selection criteria needs to factor in API-testing-specific key capabilities, like the ability to understand basic rules of creating good APIs, to design tests that are relevant for APIs, to use API testing tools, to understand business logic of service and to locate real user scenarios, among others.

## User Recommendations

- Begin evaluation and selection efforts by assessing the overall role APIs play in your application portfolio, their criticality to the organization and the security and business risk — and technical requirements — they pose.
- Give preference to API testing services that are underpinned with intelligent test creation and automated validation, as testing a broad range of conditions and corner cases is critical with APIs, so automation clearly comes to the forefront.
- Ramp up the scope for extensive performance testing as part of services. Considering the highly exposed nature of APIs, there is a strong potential for unpredictable and volatile traffic volumes. So it is critical to determine whether your APIs satisfy SLAs in the event of surging demand.
- Examine the testing capabilities provided by existing tools in your application testing portfolio, including full-life-cycle API management platforms, which may include API testing. Tools are a key component of API testing services.

## Sample Vendors

Accenture; APImetrics; Applause; Cigniti; IBM; Postman; SmartBear; Stoplight; TCS; Tricentis



## Gartner Recommended Reading

### [The Evolving Role of the API Product Manager in Digital Product Management](#)

#### Hyperautomation

Analysis By: Stephanie Stoudt-Hansen, Frances Karamouzis, David Groombridge

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Emerging

#### Definition:

Hyperautomation involves the orchestrated use of multiple technologies, tools or platforms (inclusive of, but not limited to, AI, machine learning, event-driven software architecture, RPA, iPaaS, packaged software and other types of decisions, and process and/or task automation tools). Business-driven hyperautomation is a disciplined approach that organizations use to rapidly identify, vet and automate as many business and IT processes as possible.

#### Why This Is Important

Leveraging multiple best-of-breed tools and processes allows providers to deliver more rapid, complex and successful automation, and allows clients to deliver orchestrated automation outcomes that distinguish them from competitors. Hyperautomation not only is about automation technologies products or services, but also is the approach of combining business process design, IT architecture deployment, governance and greater business agility to drive high competitive advantage.

#### Business Impact

As organizations demand greater efficiencies and outcomes from service providers, providers are leveraging hyperautomation for greater outcomes and to distinguish themselves.

- The level of efficiency that providers have achieved through automation in areas such as service desk management, hybrid infrastructures and reduction of incidents ranges from 40% to 80%.
- Gartner estimates that by 2024, organizations will lower IT and business operational costs by 30% through hyperautomation solutions.

## Drivers

- Hyperautomation initiatives have grown and investment continues to increase. There was a demand prior to the pandemic and the crisis has served to accelerate the growth, as organizations seek to automate for future resilience.
- The pandemic has broken down business barriers to some employees' resistance to automation, based on the abundance of legacy, disconnected systems and suboptimal processes, creating an urgency to digitalize.
- Organizations trying to automate using a single solution, such as RPA, were failing because RPA alone can only automate tasks, not processes. They need the full suite of hyperautomation tools to achieve process automation and functional orchestration.
- Organizations are looking up to service providers for hyperautomation solutions, which draw on the orchestration of interrelated automation technologies and processes to streamline their environments and achieve greater outcomes.
- The hyperautomation approach integrates and orchestrates automation using AI, machine learning, event-driven software architecture, RPA, iPaaS, packaged software and other automation tools.
- Leveraging multiple best-of-breed tools and processes allows providers to deliver more rapid, complex and successful automation, and allows clients to deliver outcomes that distinguish them from competitors.

## Obstacles

- Gartner estimates over 85% of enterprises have dozens of automation initiatives underway. These have varying degrees of success, as organizations' traditional build-up of technical debt and a patchwork of technologies have made the move to automated and hybrid environments challenging.
- Hyperautomation tools are currently immature with vendors who started from different baseline solutions (RPA, BPM and low code/no code), all descending on the same destination with a hotchpotch of tools with differing levels of maturity and integration.
- Many of the solutions are horizontal in nature being sold to a wide variety of industries, and lack the process knowledge and rules requiring investment in configuring and training the tools.
- RPA, AI and iBPMS vendors often lack the combination of technology solutions to create the best process to meet customer requirements. As a result, buyers struggle to integrate disparate complex technologies to achieve their automation goals.

## User Recommendations

- Establish a mixologist approach to automation tools to avoid being overly obsessed with one technology. Avoid incorrect use by identifying vendor solutions for RPA, BPM, chatbots and optical character recognition (OCR) that can be combined to achieve the desired business outcome.
- Determine a litmus test on what needs to be automated and work with your providers to determine where you will gain your greatest ROI. Also, discuss the value of their proprietary offerings versus being vendor agnostic to avoid lock-in.
- Collaborate with your provider to create a blueprint, and continuously work to update your environments based on the hyperautomation technologies and processes that will create the greatest leverage.
- Develop automation disciplines, governance and structure within your organization by starting small with simpler automation tools such as RPA or BPM to build the foundations for wider automation.

## Sample Vendors

Accenture; HCL Technologies; Hexaware; IBM; T-Systems; Wipro

## Gartner Recommended Reading

[Competitive Landscape: Hyperautomation Service Providers](#)

[Predicts 2021: Accelerate Results Beyond RPA to Hyperautomation](#)

[Emerging Technologies and Trends Impact Radar: Hyperautomation](#)

[Tech CEOs Must Use Hyperautomation to Enhance Offerings](#)

[Communicate the Value of Hyperautomation Using ROI](#)

## **Outcome-Based Service Contracting for IT/OT Systems**

**Analysis By:** Eric Goodness

**Benefit Rating:** Transformational

**Market Penetration:** 5% to 20% of target audience

**Maturity:** Emerging

### **Definition:**

Outcome-based service contracting awards IT/OT services to an external provider based on terms for user-prescribed metrics and objectives. Vendor compensation is based primarily on business outcomes rather than technical SLAs associated with IT and OT assets under management. Outcome-based services often bundle life cycle technology management, business process management and provider-owned asset capabilities offered as an operational expense.

### **Why This Is Important**

When organizations represented by the CIO, CFO and COO collectively develop service outcomes that pertain to revenue-generating assets and processes, the potential for business value beyond cost reduction and containment is transformational. This is especially true in asset-intensive industries where this market is emerging to support converged IT and OT systems functions. Early adopters are often found in the transportation sector and within process industries in manufacturing.

## Business Impact

The benefits of outcome-based service contracting are transformational in terms of accelerating digital capabilities through the convergence of IT/OT systems while drastically reducing the costs to operate asset-intensive enterprises. However, adoption of services that span IT and non-IT assets also benefits nonindustrial enterprises. Early examples confirm improvement in customer satisfaction, reduction in capital requirements, risk mitigation, and improvement in processes.

## Drivers

The drivers that lead enterprises to consider outcome-based service contracting include:

- Faster time-to-digital optimization. Outcome-based services are increasingly used as a form of optimization and arbitrage in the enterprise. For example, energy as a service contracts are created to guarantee business outcomes in terms of energy management.
- Faster time-to-digital transformation. Increasingly, providers integrate IT and OT to create new, innovative product or service models, or to extend into new or adjacent markets. Typical use cases under management include managed, smart connected product solutions for manufacturers that seek to enhance customer experience and value, but are unwilling to hire the internal staff to design, build and operate the underlying digital systems.
- Risk mitigation. Given the complexity of converged IT/OT through the use of emerging solutions aligned with IoT, edge computing and AI, pushing solution delivery and management to a third-party partner, with the financial strength to remediate and solve service lapses, has been a successful approach to reducing the risks inherent in new technology and business models.

## Obstacles

The obstacles that deter enterprises from considering outcome-based service contracting include:

- Finding providers with the requisite business and sector acumen, processes and systems to provide guaranteed outcomes that span IT and OT requirements. The number of outcome-based service providers able to address technology and business impacts is relatively small.

- Defining and negotiating substantive and actionable nonperformance criteria for a provider. The reemergence of contracts based on definable, measurable outcomes has found traction as a managed services opportunity in heavy commercial and industrial enterprises.
- The lack of alignment between users and external service providers on expected business outcomes due to inadequate statements of work, indefinite terms relating to disputes on contingent fees, and lack of equitable criteria to measure success.
- Vendor managers and procurement teams that create RFPs are risk-averse to new contracting styles and pricing methodologies.

## User Recommendations

Sourcing leaders should:

- Connect with the leaders of, or change agents responsible for, business-focused innovation and digital initiatives within their organization to ensure that outcome-based service contracting is understood and considered by business unit teams, enterprise architects and IT leaders.
- Invest in platform-centric capabilities to monitor and manage a range of technologies and business processes. The general requirements include the capabilities to measure, rate and meter platform and systems utilization and health, and technology and business transactions.

## Sample Vendors

Accenture; Beam Dental; BOGE Kompressoren; Cognizant; Hartford Steam Boiler Inspection and Insurance Company; Xylem

## Gartner Recommended Reading

[Digital Business Service Portfolio Must Align to Multiple Buying Centers and Desired Outcomes](#)

[Strengthen IoT Product Management Teams Through IT-OT and Outcomes Capabilities](#)

[Market Trends: Asset-Based Managed Services](#)

[Align Supply Chain Performance to Customer Outcomes Using This Framework](#)

## API Management PaaS

Analysis By: Mark O'Neill

Benefit Rating: Moderate

Market Penetration: 5% to 20% of target audience

Maturity: Adolescent

### Definition:

API management PaaS (APIM PaaS) takes an on-demand approach to the delivery of API management. It provides an alternative to the purchase and installation of stand-alone, full life cycle API management software. APIM PaaS manages API access via provider-hosted API gateway services, with the option of on-premises API gateways, as well as providing an API developer portal. It is typically designed to be used with other PaaS services such as function PaaS (fPaaS) and integration PaaS (iPaaS).

### Why This Is Important

APIs are increasingly built on cloud platforms and using platform as a service (PaaS), so it is natural for API management to also be delivered as-a-service. APIM PaaS takes full advantage of cloud benefits, such as autoscaling, resiliency and robust security. It also allows some vendors to offer per-API-call pricing. APIM PaaS may include the ability to deploy on-premises API gateways, to enable hybrid API management architecture with APIs on-premises and cloud-based API management.

### Business Impact

APIM PaaS allows costs to scale with the business value of APIs, reducing the impact of a large outlay as an API program scales up. It enables APIs to be managed effectively when API traffic is unpredictable and potentially very large. APIM PaaS also brings business benefits when an APIM PaaS offering is provided as part of the PaaS platforms already in use by an organization, through unified procurement and billing.

## Drivers

- APIM PaaS is driven by migration to and adoption of cloud platforms.
- Function PaaS (fPaaS) can act as a major driver for APIM PaaS. This is because fPaaS offerings can make use of API management on their associated cloud platforms. In some cases, they can automatically populate API gateways with endpoints so that fPaaS functions can be called via REST APIs.
- iPaaS and aPaaS are also drivers toward the need for API management provided by PaaS platforms.
- Since many organizations are building APIs in the cloud, APIM PaaS is also increasingly used in hybrid scenarios and multicloud scenarios.
- Automation is also a driver for APIM PaaS. This is because APIM PaaS also includes APIs into the API management platform itself. These are used to automate the creation and management of APIs, often as part of a DevOps pipeline, as well as for customizing the developer experience (DX) provided by an API developer portal.

## Obstacles

- Perceptions of network latency can impact on the uptake of APIM PaaS for managing on-premises APIs.
- Data residency concerns, such storage of API payloads that may contain private information, are also an obstacle to the uptake of APIM PaaS for managing on-premises APIs.
- APIM PaaS can result in higher-than-expected pricing as API traffic grows.
- Architecting a hybrid or multicloud API PaaS architecture is nontrivial (see [Comparing Architectures for Hybrid and Multicloud API Management](#)).
- APIM PaaS solutions from cloud hyperscalers are generally tied to their larger PaaS platforms, and are not portable for use on other PaaS platforms.



## User Recommendations

- Apply API mediation and prioritize the use of APIM PaaS to provide a cost-effective means of providing API management, even when your APIs are on-premises.
- Compare the pricing of APIM PaaS vendors, since not all provide consumption-based pricing (see [How Are API Management Platforms Priced?](#)).
- Include API PaaS as part of your API strategy, since it can accelerate time to market for mission-critical digital initiatives.

## Sample Vendors

Alibaba Cloud; Amazon Web Services; Google (Apigee); IBM; Microsoft Azure; Oracle; VMware

## Gartner Recommended Reading

[Magic Quadrant for Full Life Cycle API Management](#)

[Critical Capabilities for Full Life Cycle API Management](#)

[Ensure Your API Management Solution Supports Modern API Trends Such as Microservices and Multicloud](#)

[Toolkit: RFP Template for API Management Platforms](#)

[Comparing Architectures for Hybrid and Multicloud API Management](#)

## SaaS Post-Go-Live Services

Analysis By: Alan Stanley

Benefit Rating: Moderate

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

**Definition:**

After the implementation of a SaaS-based solution, the ongoing services needed to sustain and update the solution can be much less than the previous on-premises solutions but are not zero and are different in character from the dedicated managed services provided before. Service providers are updating their offerings to meet this requirement.

**Why This Is Important**

Software as a service (SaaS) is mainstream now for delivering standard business capabilities, but there are ongoing service elements from the SaaS provider, not just software. Many clients are confused as to where the provider obligations stop and how they will look after their installations. The new ongoing services model is usually less than with on-premises but is not zero and different in character. Many service providers are finding ways to address this change in demand.

**Business Impact**

Contracting for a predefined, dedicated capacity of services can:

- Lock the organization into an engagement that involves more service than necessary.
- Provide service that inadequately complements the base functionality support from the SaaS provider.
- Not handle the SaaS updates to common code that are vendor-driven automatically via scheduled releases.
- Lead to inability to use the new features or impact the current technical configuration.

## Drivers

- Instead of the entire stack being managed at the client location, systems are assembled from components.
- The infrastructure and base application of these components is bundled with the SaaS provider.
- Organizations can use shared remote capacity to test system changes and manage the integrations and data flows between components.
- Business users can change or configure the more adaptable SaaS systems.
- IT services are moving to product-centric, business-aligned operations utilizing common core updates from the SaaS provider.

## Obstacles

- Many IT staff and services providers have become very aligned to application managed services and application development, where all the work is customized to their environment and scaled accordingly.
- The move to SaaS needs both IT organizations and service providers to think more of continuously evolving the platform rather than building once, keeping safe and then upgrading.

## User Recommendations

IT leaders engaged in implementing SaaS solutions for their enterprise, should:

- Identify the scale of support needed by discussing the ongoing services requirements with their business, IT team, implementation partner and what is provided by the SaaS provider.
- Ensure ongoing operation by contracting a “breakdown service” for the SaaS solutions to cover identified support gaps, and selecting a pricing option that allows for scalable, pay-for-use service options and committed service levels. Ensure the provider will meet obligations to provide capacity when needed and that any nondedicated (pooled) resources used know your configuration.
- Prepare for the regular changes by negotiating a service plan at a standard price, and put in place internal governance to allow the continuous integration of updates and ongoing communication on changes and benefits to the organization.

## Sample Vendors

Accenture; Deloitte; Evosys; IBM; Infosys; TCS; Wipro

## Gartner Recommended Reading

[Contracting Terms to Buy Supplementary Maintenance Services for SaaS ERP](#)

[Product-Centric Organizations Must Repackage Outsourcing Deals to Incorporate Agile and DevOps Services](#)

## Application Portfolio Management

Analysis By: Stefan Van Der Zijden

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

### Definition:

Application portfolio management (APM) is an IT discipline that profiles an organization's business applications and products — evaluating business and technical fitness together with cost — to identify and prioritize activities for improvement. APM informs application portfolio rationalization and modernization by categorizing applications into tolerate, invest, migrate or eliminate strategies.

### Why This Is Important

APM leads to more conscious management of application assets and investments. Benefits are realized when the analytics lead to agreement with business, financial and IT stakeholders on application strategies and roadmaps that optimize capabilities for the resources available.

Organizations dealing with IT modernization or, more broadly, with the evolution of business processes and technology portfolios, benefit from the adoption of APM.

## Business Impact

Business perceptions of IT are often hurt by spiraling maintenance costs and poor responsiveness due to legacy systems with high levels of technical debt. Effective APM will identify and prioritize improvement opportunities to remove business obstacles and impediments. It will result in a simpler portfolio, well-managed portfolio risk, lower and more predictable recurring costs, and a higher percentage of the IT budget being directed toward growth or transformative initiatives.

## Drivers

- Application portfolio is an important business asset, and its health, composition and life cycle must be carefully managed.
- The need to increase the business fit, business value and agility of applications, and to reduce their cost, complexity and risk is one of the major drivers behind APM.
- APM helps redirect the overall budget to achieve desired business outcomes.

## Obstacles

Companies are slow to adopt APM because:

- Organizations underestimate the value of applications as business assets, and the cost, risk and complexity they carry.
- Getting business engaged and to support the change in applications is difficult.
- The value of APM is not well-understood and is often seen as a bookkeeping exercise.
- The responsibility of monitoring and reporting application portfolio fitness is not assigned or fragmented.
- APM loses out when competing with other initiatives.
- APM is often seen as an ad hoc or one-off activity instead of an ongoing discipline. APM is typically started as a response to a major business event. This can be a merger or an acquisition, or a major business transformation initiative forcing a reevaluation of the entire portfolio. APM is also started when a tipping point is reached and the current state is no longer tolerable for the organization. Examples are a security breach, compliance risk, high cost or poor stability.

## User Recommendations

- Peak performers should undertake APM regularly to fuel continuous improvement of the application portfolio and to identify ways of increasing its operational advantages.
- Lagging organizations should undertake APM to help allocate limited resources to the most critical gaps from business stakeholders' lens, to drive adoption of better practices across lines of business and to move toward more efficient support of business services.
- For other organizations, adoption is triggered by a business event or tipping point — a significant event that highlights portfolio inefficiencies/issues and triggers an APM initiative.

## Gartner Recommended Reading

[Managing a Portfolio of Applications Demands More Than Application Portfolio Management](#)

[Use TIME to Engage the Business for Application and Product Portfolio Triage](#)

[How to Prioritize Application Inventory and Rationalization](#)

[Engage the Business by Developing an Application Strategy Together](#)

## Climbing the Slope

### Crowdsourcing

Analysis By: Susanne Matson, Jaideep Thyagarajan

Benefit Rating: Moderate

Market Penetration: 5% to 20% of target audience

Maturity: Early mainstream

#### Definition:

Crowdsourcing is the use of communities of people who have signed up to a company's community platform. Crowdsourcing can be performed by either vetted or unvetted resources, and services could include application design, coding, development and testing.

#### Why This Is Important

Crowdsourcing can provide access to innovative thinking and resources by using vetted and unvetted communities. Vetted communities is where an individual's expertise and/or abilities are verified by the crowdsourcing firm. Unvetted is open to anyone who has signed up to the crowdsourcing firm's platform. Unvetted communities can be useful for exploratory and usability testing from a consumer perspective, or for ideation, requirement definition, and user experience design.

#### Business Impact

Sourcing and IT managers facing pressure from CEOs and CIOs to lower costs, optimize resources and provide innovative solutions can quickly leverage crowdsourcing communities. The solutions help to lower operational and personnel costs because they approach tasks and staffing as needed. They also require less onboarding, limited provisioning, no ongoing salary and no overhead costs (such as office space), and clients can set up more flexible pricing models.

#### Drivers

- Organizations are seeing increased demand for quickly developing and testing applications to meet requirements for speed after a period of rapidly accelerating digital business transformations.

- In light of shifting needs in terms of COVID-19, the crowdsourcing model can address resourcing needs and gaps, especially around new technologies, flexibility, improved price points and can also provide delivery diversification to reduce risk.
- Crowdsourcing allows for competition to come up with the best new idea by capitalizing on the collective knowledge of a known community of experts.
- Organizations can fill targeted needs by choosing the best qualified personnel or the optimal solution from a vetted pool of resources and submissions.
- Organizations can use crowdsourcing for validating ideas and products, for consumers of any kind, using a larger pool of potential users.

## Obstacles

- Crowdsourcing is not likely to completely replace the use of internal resources or external service providers. It should be evaluated as a complement to outsourcing delivery methods for application services or for enterprise projects seeking innovative solutions. Sourcing and IT leaders facing business demands for innovation, flexibility or cost-efficiency should create internal criteria to select projects suitable for crowdsourcing, and then start with proofs of concept and/or trials.
- Sourcing and IT leaders must check the reputation of each crowdsourced community and of any crowdsourcing firm. Identify and create mitigation plans for risks to avoid potential problems with quality, security, IP ownership and warranties, as well as the integration of externally developed solutions and/or resources. Mitigation plans can include using security scanning tools on “winning” solutions, providing masked/fake data for sensitive projects, or verifying IP ownership and infringements rights.

## User Recommendations

- Select between delivery of crowdsourcing through pure-play companies, as well as through “managed application services communities.” These communities refer to service and product providers’ commercial use of crowdsourcing to deliver application design, testing, and development services to end-user organizations. In managed application services communities, the crowd can comprise provider employees or external resources included through a crowdsourcing platform.



- Assign internal roles and responsibilities to examine the use of crowdsourcing when using crowdsourcing companies directly. Typical related roles are that of a project manager and a crowd curator. Crowd curators are typically strong architects or developers with the right blend of project leadership and communication skills, whose roles in an organization are to design, manage and integrate crowdsourcing solutions and resources.

## Sample Vendors

Applause; CrowdWorx; Gigwalk; HackerOne; Koder; Passbrains; Synack; Testbirds; Topcoder; Upwork

## Gartner Recommended Reading

[Market Impact: Crowdsourcing Can Help Alleviate IT Service Delivery Gaps Caused by COVID-19](#)  
[Ways for Midsize Enterprises to Obtain Timely Insights During Demanding Times](#)

[Optimize Your IT Services Sourcing Strategy to Include Contingent Labor for Digital Talent](#)  
[Market Impact:](#)

[Preparing Tech CEOs for the 'Gig-Agent' Employment Model in Customer Management Business Process Outsourcing Services](#)

## Digital Business Consulting Services

Analysis By: Brendan Williams, Chrissy Healey, Katie Gove

**Benefit Rating:** Transformational

**Market Penetration:** 5% to 20% of target audience

**Maturity:** Early mainstream

### Definition:

Digital business consulting services (DBCS) are services that generate increased business value by using digital technologies and approaches to optimize clients' operating models and/or transform business models. These services include digital business consulting related to strategy and design, operations improvement, employee experience, customer experience, product and service innovation, and business model transformation.

## Why This Is Important

The DBCS market is forecast to grow at a five-year CAGR of 10.8%, reaching \$118 billion in 2024. Growth will rebound to double digits as organizations respond to the COVID-19 pandemic by further accelerating their adoption of digital business. Organizations are increasing their reliance on external consultants, as the greater urgency and accelerated pace of change widen the gap between organizations' digital business ambitions and their internal resources and capabilities.

## Business Impact

The DBCS market has been spurred by the response to the COVID-19 pandemic and related economic disruption, placing the market near the beginning of the Slope of Enlightenment and moving it closer to the Plateau of Productivity. Market penetration remains in the 5% to 20% range, as digital acceleration causes both the actual and potential market to grow. From a maturity perspective, the DBCS market has progressed from "adolescent" to "early mainstream."

## Drivers

The DBCS market dynamics are driven primarily by demand-side factors. DBCS is a highly competitive market with relatively low barriers to entry. This means that, at a macroeconomic level, supply responds quickly and efficiently to changes in the level or nature of demand. The most important drivers in the DBCS market can be grouped into three categories:

- Digital business growth ambitions
- Opportunities for operational improvement from digital technologies
- Need for external assistance devising and delivering on digital strategies

## Obstacles

Obstacles faced by actual or prospective DBCS providers include:

- Increased competitive pressure due to new market entrants.
- Standardization and automation of some undifferentiated consulting services, which leads to commoditization, and can even lead to substitution of customized consulting services by software tools over time.

- Clients will substitute some project-based, customized consulting services with managed business process services as these become more sophisticated, and as clients continue to embrace the as-a-service delivery model.

Obstacles faced by actual or prospective DBCS buyers (end-user organizations) include:

- Lack of a single executive “owner” of the digital business or digital transformation agenda (buyers are diffused throughout different functional areas in the organization).
- Confusion, fatigue and skepticism about digital transformation, with concern about the risk of failure being aggravated by excessive hype around all things digital.

### User Recommendations

There are many providers in the DBCS market, which makes it difficult to compare offerings because they are complex and nonstandard. To improve their ability to evaluate DBCS providers, buyers should:

- Prioritize providers whose capabilities and offerings are most aligned with their near-term and future digital business ambitions.
- Evaluate providers on their ability to align proposals to measurable business outcomes, willingness to take delivery risk and run/managed services capabilities, if needed.
- Seek proofs of concept and pilots to gain quick wins and build the business case for further investment in digital business.
- Choose providers that successfully weave organizational change management and digital upskilling into their services.

### Gartner Recommended Reading

[Market Opportunity Map: Digital Business Services, Worldwide](#)

[Forecast Analysis: Digital Business Consulting Services, Worldwide](#)

[Market Share Analysis: Security Consulting Services, Worldwide, 2020](#)

[Market Guide for Digital Business Agencies, Consulting and Implementation Services](#)

## Crowdtesting

Analysis By: Susanne Matson, Jaideep Thyagarajan

Benefit Rating: Moderate

Market Penetration: 5% to 20% of target audience

Maturity: Early mainstream

### Definition:

Crowdtesting is the use of crowdsourced communities for the purpose of verifying and validating physical and virtual products, applications and services.

### Why This Is Important

The need for speed and flexibility is increasing as organizations are scaling up their digital business initiatives. With more advanced products and applications developed today using emerging technologies, testing is more complex and a diverse pool of testing resources can be needed. Crowdtesting can bring speed of application delivery, agility and access to specialized skills in emerging digital opportunities, and be used for user-experience-related testing.

### Business Impact

Crowdtesting can provide:

- Rapid access to testers
- The ability to scale up almost instantaneously
- Access to testers worldwide for almost any domain, device, platform or discipline, in many languages
- Speed and agility (a primary requirement to keep up with the demands of a higher number of releases at increased speed)
- Cost-efficiency
- The ability to test realistic customer satisfaction and customer experience

Crowdtesting is offered using vetted and unvetted communities of testers:

- **Vetted:** Individuals in the community are confirmed to be who they state they are, and have the right capabilities.
- **Unvetted:** Any individual in the crowdsourcing community can participate.

Several IT service providers offer these services by using employees on the bench or by partnering with crowdtesting companies.

## Drivers

- There is increased importance given to user-experience-related testing.
- More multiexperience-platform-based applications and products are being developed with more releases of all involved software layers.
- More cloud applications are built on application platforms, comprising containers and microservices and the expansion of IoT in the consumer domain.
- More focus is placed on cybersecurity risks.
- There is a demand for speed in the testing process, and increased demand for flexibility and agility.
- Access to specialized and/or localized skills is increasing.
- Clients are looking to diversify their sourcing model to become more resilient.
- The COVID-19 pandemic has seen an increased interest from organizations to consider crowdtesting, partly due to cost pressures and need for diversification. The pandemic has also accelerated digital business transformation, with an ever-greater focus on connecting with clients digitally, ensuring relevant applications and systems are of high quality, and achieving this at speed with short turnarounds.

## Obstacles

- Using crowdtesting carries an inherent security risk, and requires a verification against company security and regulatory compliance controls.
- Some crowdtesting companies are increasing their use of annual or multiyear subscriptions, which might not be the best option for clients primarily looking for flexibility.
- It can be difficult to handle governance and management of the crowd. Some clients will not be comfortable with the degree of releasing control needed in crowdtesting.
- Integration of crowdtesting results across multiple contests and assignments, as well as with other applications or environments, can be challenging.
- Compared to traditional testing offerings, there is less automation, a lack of common toolsets and a lack of reuse in crowdtesting. It can also be hard to find industry-specific expertise.
- The potential lack of continuity in resources working on projects is a risk.

## User Recommendations

When considering crowdtesting as an integral part of the development phase, organizations must ensure that they have:

- Strong internal requirement management capabilities
- Warranted commitment from the application's owner or owners
- Mature architecture and integration capabilities for the respective application domains
- The organizational knowledge to break down the requirements into contests

## Sample Vendors

Applause; Digivante; Global App Testing; HackerOne; passbrains; Rainforest; Synack; Testbirds; Testlio

## Gartner Recommended Reading

[Maverick\\* Research: The Biggest Weakness Is Our Biggest Strength: Cybersecurity in the Digital Age Is Crowdsourced](#)

[Invest in Crowdfunding Capabilities to Improve Flexibility and Speed of Delivery](#)

[Market Impact: Crowdsourcing Can Help Alleviate IT Service Delivery Gaps Caused by COVID-19](#)

[Optimize Your IT Services Sourcing Strategy to Include Contingent Labor for Digital Talent](#)

[Magic Quadrant for Application Testing Services, Worldwide](#)

[Critical Capabilities for Application Testing Services, Worldwide](#)

## **IA for Infrastructure Managed Services**

**Analysis By:** Stephanie Stoudt-Hansen, David Groombridge

**Benefit Rating:** High

**Market Penetration:** 20% to 50% of target audience

**Maturity:** Early mainstream

### **Definition:**

Gartner uses the overarching term “intelligent automation” to cover a variety of technologies. These range from rapid-automation technologies (i.e., robotic process automation software or scripting) to AI approaches, such as deep learning, machine learning, cognitive techniques, NLP, speech recognition and machine vision. Intelligent automation (IA) for infrastructure managed services is the application of these technologies to IT infrastructure operations, delivered through managed services.

### **Why This Is Important**

Where service delivery relies on manual processes, IA can be used for routine parts of work to decrease human effort, provide cost efficiencies and reduce potential errors. Leading service desk providers can use IA to resolve 40% to 80% of contacts and can automate 80% to 95% of the provisioning and management of hybrid infrastructure services. This automation is now extending further into related services such as application administration, smart buildings and security services.

### **Business Impact**

IA in infrastructure managed services offers a number of potential benefits:

- Gartner expects contracts containing IA to show annual cost savings of 2% to 8% for commodity services, depending on the specific service and the extent of its use.
- Furthermore, IA makes it easier for enterprises to scale rapidly to demands rather than hiring new people, requiring annual pay raises, PTO or additional hiring due to staff turnover.

## Drivers

- Infrastructure service providers continue to enhance their automation capabilities by embedding intelligent automation deeper in their platforms and existing infrastructure services.
- Artificial intelligence also generates analytical insights that allow for proactive and preventative maintenance actions to help reduce system downtime and impact to users.
- IA provides rapid scaling, multilanguage, reduced business impact, repeatable quality, and the ability to refocus staff on more value-added business needs. All of this drives improved user satisfaction and SLA delivery.
- Organizations buying infrastructure managed services have come to expect their service providers to offer year-over-year savings, with step-down pricing during multiyear contracts.
- In the past, providers delivered this through industrialization of services and use of low-cost labor in a global delivery model.
- Increasingly, buyers should expect that savings will now be achieved by “automation arbitrage,” in which IA replaces a substantial part of the human labor in provider offerings.

## Obstacles

While IA is increasingly available, obstacles to leveraging it in managed service contracts can still be challenging:

- Penetration of these services into enterprises is increasingly common but not yet universal, with existing contracts often seeing little change until renewal, because it was not part of the original contract.



- Most infrastructure services providers have their own automation tools, which provide integration and orchestration of third-party automation tools. This has allowed providers to expand their capabilities from simple task automation into process automation and orchestration. Although this can be good for clients, it also can create lock-in if solutions are customized.
- Some providers are also beginning to sell their automation tools as stand-alone solutions, and offer outcome-based “automation-as-a-service” offerings, which are only paid for on the basis of cost reductions achieved. Understanding the pricing and whether providers can achieve these offerings will require careful due diligence from SPVM.

## User Recommendations

The critical component needed to make IA work is a substantial and detailed data record. For infrastructure managed services, AI systems learn by tracking the actions of engineers during incident resolution and by identifying patterns in logs of incident, change or other data, and how each was addressed. Organizations preparing for increased use of AI now and in the future should:

- Ensure that all log data and any related metadata is contractually available in the future, even if an external service provider currently maintains it. Furthermore, the contract must require such data to be comprehensive, clear and complete through defined quality criteria.
- Ensure, where possible, that technologies leveraged by managed service providers are vendor agnostic and can be abstracted to avoid vendor lock-in.
- Incorporate step-down forward pricing in contracts, coupled with regularly-increasing targets for SLAs, predicated on the use of additional automation.
- Track the percentage of automated processes in any managed service monthly to avoid the provider trying to deliver annual cost reductions by cutting staffing levels without automating.

## Sample Vendors

Atos; Cognizant; Hexaware; IBM; TCS; Wipro

## Gartner Recommended Reading

[Market Guide for Intelligent Automation Leveraged for IT Managed Services](#)

## Scale Infrastructure Operations With Intelligent Automation and a Central Knowledge Unit

## Contract for Best-in-Class Performance for Data Center and Cloud Managed Services

### Multicloud Managed Services

Analysis By: Sid Nag

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Early mainstream

#### Definition:

Multicloud managed services (MCMS), previously cloud service brokerage (CSB), is defined as an IT role and business activity in which a company or internal entity adds value to one or more (public or private) cloud services. This is done on behalf of one or more consumers of that service by providing an aggregation, integration, customization and/or governance role. Multicloud managed service enablers provide technology to support cloud service brokering activities.

#### Why This Is Important

With cloud being mainstream, especially the adoption of multicloud, multicloud managed services (MCMS) will continue to increase. This has MCMS moving steadily toward the Plateau of Productivity. As organizations formulate their multicloud strategies, the role of IT as an MCMS provider has become an important function for many IT organizations. According to Gartner's cloud survey, more than 76% of organizations have adopted, or plan to adopt, multicloud.

#### Business Impact

Due to increased adoption of multicloud, IT has now widely embraced the "multicloud managed services" term. However, some external providers have used the "brokerage" label while offering the same functionality, and prefer terms such as "multicloud managed service provider." Meanwhile VARs, ISVs and OEMs are continuing to redefine their business models in context of the new cloud reality, but struggle to find the right business model for monetizing their value-added MCMS.

## Drivers

The area related to multicloud managed services that has, however, grown the fastest over the last few years is the segment of third-party cloud managed service providers (MSPs). These MSPs offer value-added services for cloud migration and managed services on top of cloud infrastructure. Providers come from a wide variety of backgrounds, including system integration, managed hosting and full-service outsourcing, which compete with pure-play startups.

Providers of MCMS-enabling technologies include dedicated MCMS platforms, cloud management platforms (see [Magic Quadrant for Cloud Management Platforms](#)) with embedded brokering capabilities and a wide variety of cloud management point solutions.

## Obstacles

- Providers tend to confuse combinations of siloed MSP practices for individual cloud providers as MCMS.
- There is also confusion around CMP platforms around MCMS enablement to be mistaken for MCMS.
- Many generic marketplace providers tend to confuse themselves as brokerage providers and by association tend to be perceived as MCMS players.

## User Recommendations

- Have a unified layer of consumption based on four pillars — aggregation, integration, customization and governance. In some cases, your organization can take on the role of an internal service broker to provide multicloud services to internal and external customers via an MCMS enablement platform. And for some other cases, your organization can turn to an external MCMS provider.
- Engage an external cloud MSP to perform the MCMS function if you lack the skills and capabilities or when an MSP can best meet your time-to-deployment or risk management requirements. Be sure to assess MCMS provider maturity at the commercial and technical level.
- Institute an internal MCMS role when brokering is perceived as a required internal core competency. Examples are when you want control over cloud consumption or you are responsible for delivering IT services across a hybrid and multiclouds (public and private clouds). Colocate MCMS with your cloud center of excellence.

## Gartner Recommended Reading

[Market Guide for Cloud Service Brokerage](#)

[Competitive Landscape: Cloud Service Brokerage](#)

[6 Best Practices to Create a Cloud Management Services Offering in the World of Multicloud and Hybrid Cloud](#)

[Market Insight: Top 10 Things 'To Do' to Seize the Cloud Service Brokerage Opportunity](#)

## Entering the Plateau

### Data and Analytics Services

Analysis By: Jorgen Heizenberg, Twiggy Lo

Benefit Rating: High

Market Penetration: 20% to 50% of target audience

Maturity: Mature mainstream

#### Definition:

Data and analytics services are consulting, system integration and managed services for the management of data for all uses (operational and analytical) and the analysis of data to drive business processes and improve business outcomes through more effective decision making. The core capabilities include D&A strategy, data management, analytics and BI, data science and machine learning, D&A governance, program management, and enterprise metadata capabilities.

#### Why This Is Important

Organizations are deploying D&A to support enterprise digital transformation and acceleration. As a result, the use of D&A is becoming more strategic and expanding across business units with decentralized D&A communities. Most organizations lack the time and the skills to execute on these D&A initiatives, and this is driving engagement with external service providers to fill in the skills gaps and deliver rapid time to transformation.

#### Business Impact

- **Chief Data Officer:** Gartner's sixth annual [CDO Survey](#) shows that 83% of respondents' enterprises had digital transformation initiatives; nearly a quarter (23.8%) were leading the transformation initiatives; 72% were either leading or heavily involved.
- **Domain D&A Leaders:** Gartner's 2020 [The Rise of Business-Domain-Led Data and Analytics Survey](#) finds that leading organizations have shifted from traditional, centralized, IT-centric D&A teams to a model where domain D&A leaders share responsibility.

#### Drivers

- Organizations beginning their data-driven transformation, expanding D&A in their digital business strategies and becoming adept at maximizing the value of their D&A assets will see the greatest impact from external D&A services. Clients turn to service providers for their best practices, depth of (technical and business) expertise, improved time to market and faster value realization.
- Organizations moving to a more fact-based approach for decisions and/or business process transformation supported by D&A will need a life cycle of planning, building, managing, governing and optimizing D&A solutions delivered by external service providers.
- Organizations looking to scale and industrialize AI and machine learning technologies — beyond experimenting and innovating — will need support to improve accuracy, trustworthiness, and speed of their pilots and prototypes as they move toward production.
- Service providers are rapidly adopting an “asset-based consulting” model that uses intellectual property assets for particular industries or business domains and prebuilt automation to accelerate delivery. These IP assets can include reusable code, frameworks, tools, methodologies, preconfigured solutions and platform-based business solutions. Automation ranges from basic macros and scripts to full-fledged AI, cognitive computing and machine learning.

## Obstacles

- Many service providers are active in this market, and D&A leaders find it increasingly difficult to differentiate between them.
- Enterprises increasingly expect D&A service providers to drive organizational performance and guide digital business, but some lack the capabilities to do so.
- Offerings of external D&A service providers are generally well-established; however, some areas, like machine learning, and innovation areas like data monetization and data sharing, still need skills improvement.
- External D&A service providers also need to build up skills for new approaches like DataOps, MLOps (aka XOps) and data fabric.
- Other areas that would benefit from expansion of skills are D&A governance and ethics, as well as change management and data literacy.

## User Recommendations

To evaluate how to best use external D&A service providers, organizations should:

- Identify the D&A deficit (needed external support) based on the type of initiative, such as D&A strategy, data management, data governance or analytics programs.
- Collaborate with business stakeholders to prioritize requirements for external D&A skills, industry experience and technology support.
- Identify the types of intelligent automation and consulting assets, and change management capabilities required to embed D&A in the business processes and workflows of their organizations.
- Develop a set of D&A performance metrics, derived from the business stakeholder objectives, to measure the impact of the external services on the organization's business outcomes.

## Sample Vendors

Accenture; EPAM; EXL; Fractal Analytics; SDG Group; West Monroe

## Gartner Recommended Reading

[Magic Quadrant for Data and Analytics Service Providers, Worldwide](#)

[Critical Capabilities for Data and Analytics Service Providers, Worldwide](#)

[Tool: Vendor Identification for AI and Data and Analytics Service Providers](#)

[Tool: RFP Template for Engaging With Data & Analytics Service Providers](#)

## SIAM

Analysis By: Jim Longwood, Pablo Arriandiaga, DD Mishra, Andrew Miljanovski

Benefit Rating: Moderate

Market Penetration: 20% to 50% of target audience

Maturity: Mature mainstream

**Definition:**

Service integration and management (SIAM) is a role that coordinates and integrates service delivery of multiple internal and external IT and business process service providers. It can be undertaken by the client or by a third-party service provider. The SIAM role is different from a prime contractor role. If outsourced, the client organization has a direct contract with not only the SIAM provider, but also each of the service providers managed by the SIAM provider on the client's behalf.

**Why This Is Important**

As clients moved to a multisourced environment, typically with three to seven traditional and cloud service providers, the interdependencies and hand-off points between providers became increasingly complex to manage. Blame games between providers became more common, service quality dropped and the cost benefits of using best-of-breed providers shrank. The SIAM role evolved to address these problems, by improving collaboration between providers to deliver end-to-end service outcomes to business users.

**Business Impact**

Well-executed, the role uses OLAs and KPIs to break down intra/interprovider service silos to deliver a seamless and integrated customer/end-user service experience. This also helps SPVM leaders reduce complexities of managing multiple service providers to deliver a more efficient, cost-effective and better quality of service. It enables both IT and business units to focus on improving their day-to-day business operations and adopt the latest industry best practice technology and services.



## Drivers

- SPVM managers are under ongoing pressure to improve end-to-end service quality and optimize the cost benefits of using multiple best-of-breed services providers as well as allowing business units to focus on optimizing business operations.
- The complexity of managing a multisourced environment of traditional and cloud providers has driven the ongoing adoption of the SIAM role for traditional and cloud services — sometimes referred to as SIAM V1.
- Common problems that the role addresses are the need to reduce interprovider incidents and problem and change management issues, streamlines process handoffs, and foster interprovider collaboration.
- SIAM addresses the need to improve service delivery excellence via standardization, optimized operating costs and business agility, and improves operational efficiency and business effectiveness over time.
- The growing adoption of digital, agile, DevOps and IoT services, involving many more smaller service offerings, is driving the adoption of “Eco-SIAM,” the successor to the traditional SIAM role and positioned on the “Innovation Trigger” segment of the Hype Cycle.

## Obstacles

- Before starting this journey, ensure that internal and external service providers are ready for the SIAM role and that individual providers are well-managed.
- Deciding whether to insource or outsource the SIAM role often involves a lot of internal politics between a range of internal IT functions, resulting in use of hybrid internal/external delivery models.
- If taking a DIY approach, obstacles include lack of budget to buy and integrate the required ITSM toolsets and dashboards, so consider the “build operate transfer” model in this scenario.
- Building and justifying the business case for adopting the SIAM role can be daunting — ensure you include resourcing, tooling and/or external vendor costs along with key benefits to the organization.
- As adoption of disruptive digital services increases, the traditional SIAM role is not adequately equipped to cover the many more providers involved and ecosystem capabilities needed — thus the need to migrate to the Eco-SIAM role.

## User Recommendations

To optimize the benefits of using the SIAM role:

- Prepare an extensive business case ensuring allocation of a suitable budget for building and undertaking the role.
- Treat adoption of the SIAM role as a staged journey incrementally building up your SIAM capabilities.
- Foster a collaborative working environment built on trust among all parties.
- Ensure that you have senior staff delivering and managing the SIAM role and that service providers are involved and understand the SIAM role.
- Ensure that operational-level agreements (OLAs), KPIs and service provider interfaces are set up between all parties.
- Evaluate use of emerging offerings (e.g., for SLA/OLA auditing and solution brokering) and SIAM-focused toolsets.
- Evaluate use of best-of-breed SIAM providers for bundled communication services.
- Examine use of the evolving “Eco-SIAM” role as digital, DevOps, agile and product-centric services become more pervasive in your services ecosystem.

## Sample Vendors

Atos; Capgemini; CGI; DXC Technology; Fujitsu; HCL Technologies; Kinetic IT; Leidos; Orange Business Services; Wipro

## Gartner Recommended Reading

[The SIAM Role Is Critical in Managing Multiple Outsourced Service Providers](#)

[Build on Your Vendor Management Capabilities When Insourcing the MSI-SIAM Role](#)

[Drive Managed Service Delivery Success by Effectively Contracting Your SIAM Requirements](#)

[Optimize Multisourcing Service Integration Using the Right Toolsets to Drive Delivery Excellence](#)

[Market Trends: MSI-SIAM Buyer Behavior in Managed Communications Services](#)

## IAST

Analysis By: Mark Horvath

Benefit Rating: High

Market Penetration: 5% to 20% of target audience

Maturity: Early mainstream

### Definition:

Interactive application security testing (IAST) uses instrumentation to combine the benefits of dynamic application security testing (DAST) and static analysis security testing (SAST). Instrumentation allows DAST-like confirmation of exploit success and SAST-like coverage of the application code. IAST can be either delivered passively, leveraging general application testing, or actively induced via DAST.

### Why This Is Important

IAST overcomes problems that occur when SAST or DAST is run alone:

- SAST scanners suffer from a high rate of false positives.
- SAST scanners can't tell developers if a given set of code is reachable by attackers.
- DAST scanners can tell developers that a vulnerability exists, is reachable and can be exploited, but doesn't tell where the code containing the vulnerability is located.

Instrumentation allows DAST-like confirmation of exploit success and SAST-like coverage of the application code.

### Business Impact

By combining DAST and SAST techniques in an interactive fashion, the security vulnerabilities identified by IAST contain fewer false positives (or fewer false negatives) and higher speed than SAST and DAST. However, "fewer" doesn't mean "none," so be skeptical of vendor claims. Because of this, IAST works well in agile, continuous delivery and DevSecOps environments, where rapid turnaround is paramount.

## Drivers

- The increasing speed of development and SAST's high rate of false positives is pushing organizations to get more efficient with their application security testing. IAST allows organizations to focus on vulnerabilities that are true positives.
- IAST can be run in a "passive mode," observing code execution while other tools run standard QA tests. This is seen as a big win for efficiency, especially in organizations that rely on test-driven development (TDD).
- IAST does a good job visualizing complex data flows and dependencies between applications, services and other components in modern applications.
- AST vendors have seen IAST as either a way to differentiate themselves from other vendors who may only be offering standard SAST/DAST/SCA products.
- Because IAST supports many of the functions of SAST and DAST, some clients are replacing traditional tools (usually DAST) with IAST.

## Obstacles

- Organizations that are just beginning to secure SDLC tend to favor tools like SAST and SCA, which not only reduce their immediate risk to OWASP Top 20, but help train their developers around common security issues.
- Building in instrumentation into the applications for IAST to use is not a trivial amount of work, and many organizations have trouble weighing this cost against the reduction in false positives, especially early in their security maturity.
- Traditional AST organizations are using techniques like correlation or human direction to simulate IAST-like functionality without investing in instrumentation.
- IAST can have an adverse effect on application performance and is limited in coverage by what "code paths" are exercised. In the absence of a full QA or TDD suite, coverage gaps could be significant.

## User Recommendations

- Use IAST for high-assurance testing by IT and DevOps organizations that develop their own applications. IAST has reached the Plateau of Productivity, with multiple vendors offering it as a stand-alone tool or as part of a broader AST tool suite.
- Reevaluate your DAST and SAST approaches using accuracy gains achieved through IAST.
- Apply lightweight SAST during coding, combined with IAST and DAST during the test and prerelease phases. Enterprises should feel confident about using IAST as a mature AST technology.
- Allow the application to self-test, without requiring security testing experts to run the tests, speeding the development and testing cycle while simultaneously adding some security benefits.

## Sample Vendors

Acunetix; Checkmarx; Contrast Security; HCL Software; Hdiv Security; Micro Focus; MoreSec; Synopsys; Veracode

## Gartner Recommended Reading

[Critical Capabilities for Application Security Testing](#)

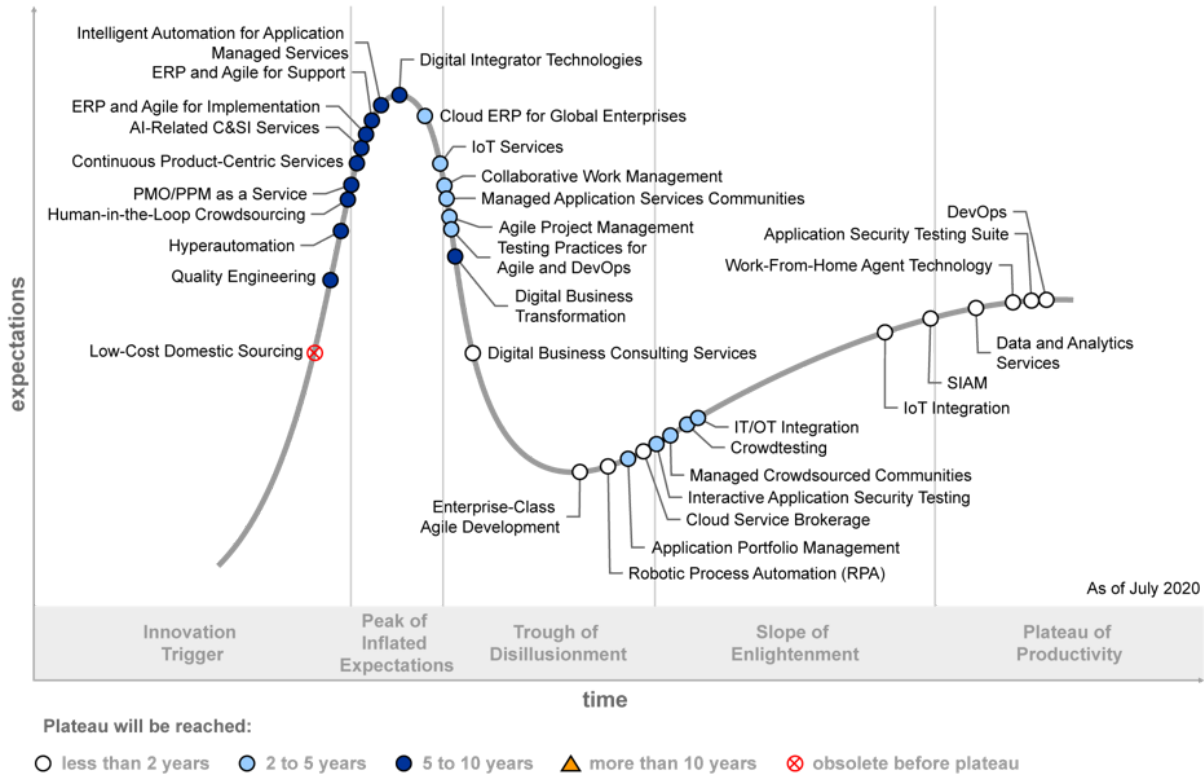
[Structuring Application Security Tools and Practices for DevOps and DevSecOps](#)

[How to Deploy and Perform Application Security Testing](#)

Appendixes

Figure 2: Hype Cycle for Application Services, 2020

Hype Cycle for Application Services, 2020



Source: Gartner  
ID: 448064

Source: Gartner (July 2020)

## Hype Cycle Phases, Benefit Ratings and Maturity Levels

**Table 2: Hype Cycle Phases**

(Enlarged table in Appendix)

Phase ↓	Definition ↓
<i>Innovation Trigger</i>	A breakthrough, public demonstration, product launch or other event generates significant media and industry interest.
<i>Peak of Inflated Expectations</i>	During this phase of overenthusiasm and unrealistic projections, a flurry of well-publicized activity by technology leaders results in some successes, but more failures, as the innovation is pushed to its limits. The only enterprises making money are conference organizers and content publishers.
<i>Trough of Disillusionment</i>	Because the innovation does not live up to its overinflated expectations, it rapidly becomes unfashionable. Media interest wanes, except for a few cautionary tales.
<i>Slope of Enlightenment</i>	Focused experimentation and solid hard work by an increasingly diverse range of organizations lead to a true understanding of the innovation's applicability, risks and benefits. Commercial off-the-shelf methodologies and tools ease the development process.
<i>Plateau of Productivity</i>	The real-world benefits of the innovation are demonstrated and accepted. Tools and methodologies are increasingly stable as they enter their second and third generations. Growing numbers of organizations feel comfortable with the reduced level of risk; the rapid growth phase of adoption begins. Approximately 20% of the technology's target audience has adopted or is adopting the technology as it enters this phase.
<i>Years to Mainstream Adoption</i>	The time required for the innovation to reach the Plateau of Productivity.

Source: Gartner (July 2021)

Table 3: Benefit Ratings

<i>Benefit Rating</i> ↓	<i>Definition</i> ↓
<i>Transformational</i>	Enables new ways of doing business across industries that will result in major shifts in industry dynamics
<i>High</i>	Enables new ways of performing horizontal or vertical processes that will result in significantly increased revenue or cost savings for an enterprise
<i>Moderate</i>	Provides incremental improvements to established processes that will result in increased revenue or cost savings for an enterprise
<i>Low</i>	Slightly improves processes (for example, improved user experience) that will be difficult to translate into increased revenue or cost savings

Source: Gartner (July 2021)



**Table 4: Maturity Levels**

(Enlarged table in Appendix)

<i>Maturity Levels</i> ↓	<i>Status</i> ↓	<i>Products/Vendors</i> ↓
<i>Embryonic</i>	In labs	None
<i>Emerging</i>	Commercialization by vendors Pilots and deployments by industry leaders	First generation High price Much customization
<i>Adolescent</i>	Maturing technology capabilities and process understanding Uptake beyond early adopters	Second generation Less customization
<i>Early mainstream</i>	Proven technology Vendors, technology and adoption rapidly evolving	Third generation More out-of-box methodologies
<i>Mature mainstream</i>	Robust technology Not much evolution in vendors or technology	Several dominant vendors
<i>Legacy</i>	Not appropriate for new developments Cost of migration constrains replacement	Maintenance revenue focus
<i>Obsolete</i>	Rarely used	Used/resale market only

Source: Gartner (July 2021)

## Evidence

<sup>1</sup> See [2021 IT Services Survey: Progressive Companies Evolving Their IT Services Sourcing Model](#)

<sup>2</sup> Gartner's 2020 IT Services Providers — Changes in IT Purchasing Survey (IT Services Survey) was conducted online from October through November 2020 to understand the delivery and engagement model for IT services. The survey was conducted among 647 respondents from organizations in North America, EMEA, APAC and LATAM, with at least \$250 million in annual revenue.

Organizations were from most industries except agriculture, real estate and nonprofit/charity/NGO and would have to be outsourcing IT services (infrastructure, applications or business process services) to a third-party vendor or contractor.

Respondents were required to have been personally involved in service provider identification, evaluation/selection or contracting in the last 24 months. Respondents were required to have a job title of manager or above depending of the functional areas they are involved in (corporate/line of business leadership, application management, enterprise architecture and technology innovation, finance, human resources, infrastructure and operations, marketing, program and portfolio management and sourcing, procurement and/or vendor management).

Results of this study do not represent global findings or the market as a whole but reflect sentiment of the respondents and companies surveyed.

## Document Revision History

[Hype Cycle for Application Services, 2020 - 22 July 2020](#)  
[Hype Cycle for Application Services, 2019 - 25 July 2019](#)  
[Hype Cycle for Application Services, 2018 - 26 July 2018](#)  
[Hype Cycle for Application Services, 2017 - 20 July 2017](#)  
[Hype Cycle for Application Services, 2016 - 12 July 2016](#)  
[Hype Cycle for Application Services, 2015 - 16 July 2015](#)  
[Hype Cycle for Application Services, 2014 - 21 August 2014](#)  
[Hype Cycle for Application Services, 2013 - 31 July 2013](#)  
[Hype Cycle for Application Services, 2012 - 5 September 2012](#)  
[Hype Cycle for Application Services and Outsourcing, 2011 - 26 July 2011](#)  
[Hype Cycle for Consulting and System Integration, 2010 - 17 July 2010](#)  
[Hype Cycle for Consulting and System Integration, 2009 - 27 July 2009](#)  
[Hype Cycle for Consulting and System Integration, 2008 - 9 July 2008](#)

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## Recommended by the Authors

Some documents may not be available as part of your current Gartner subscription.

[Understanding Gartner's Hype Cycles](#)

[Create Your Own Hype Cycle With Gartner's Hype Cycle Builder](#)

[Leadership Vision for 2021: Sourcing, Procurement and Vendor Management](#)

4 Major Sourcing Trends for a 'New Normal' World: Change, Outcomes, Risk and Agility

Use Our Checklist to Evaluate and Enhance Your Readiness for the Dynamic Sourcing of Digital Business

Product-Centric Organizations Must Repackage Outsourcing Deals to Incorporate Agile and DevOps Services

Predicts 2021: Creatively Sourcing Application Service Partnerships Will Drive Accelerated Recovery

2021 IT Services Survey: Progressive Companies Evolving Their IT Services Sourcing Model

Infographic: 3 Must-Do Action Items for IT Services Sourcing in 2021

2021 Strategic Roadmap For The Composable Future Of Applications

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Table 1: Priority Matrix for Application Services, 2020

Benefit ↓	Years to Mainstream Adoption			
	Less Than 2 Years ↓	2 - 5 Years ↓	5 - 10 Years ↓	More Than 10 Years ↓
Transformational	Digital Business Consulting Services	Agile Project Management	Outcome-Based Service Contracting for IT/OT Systems	
High	Data and Analytics Services IAST Multicloud Managed Services	API Testing Services Application Portfolio Management ERP and Agile for Support Hyperautomation IA for Infrastructure Managed Services IoT Services	AI-Augmented AMS Autonomous Testing Continuous Product-Centric Services Continuous Quality Managed IoT Services PMO/PPM as a Service Quality Engineering	
Moderate	SIAM	Anywhere Services API Management PaaS Crowdsourcing Crowdtesting SaaS Post-Go-Live Services	Eco-SIAM	
Low				

Source: Gartner (July 2021)

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Phase ↓

Definition ↓

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Source: Gartner (July 2021)