

IDC MarketScape

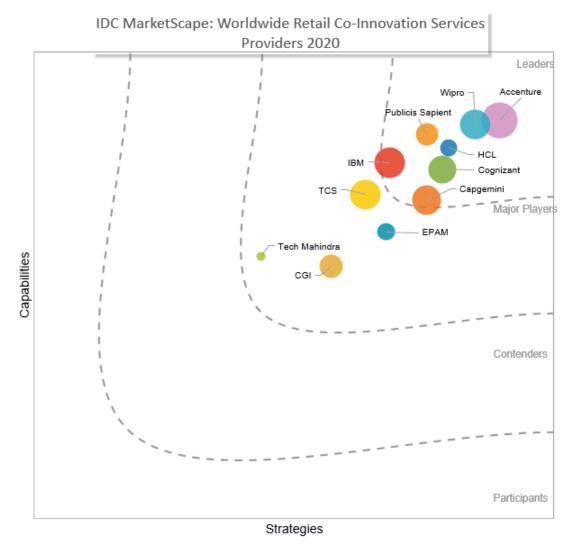
IDC MarketScape: Worldwide Retail Co-Innovation Services Providers 2020 Vendor Assessment

Giulio Raffaele Filippo Battaini Ornella Urso

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape: Worldwide Retail Co-Innovation Services Providers 2020 Vendor Assessment



Source: IDC, 2020

Please see the Appendix for detailed methodology, market definition, and scoring criteria.

IDC OPINION

According to IDC's 2020 *Global Retail Innovation Survey*, over the next three years, 56% of retailers are planning to innovate their business models by addressing their partner ecosystems, making it a top priority of innovation activities. These retailers are already investing in integrating ecosystem data and co-innovating with partners to generate new B2B2C value across their extended value chains.

IDC believes co-innovation is a key enabler of commerce everywhere business models (for more information, refer to IDC's Webinar *Commerce Everywhere Business Models and the Path Toward Retail Innovation Excellence* – IDC #EUR146908220, October 2020), and retailers have a broad range of opportunities to co-innovate by establishing formal and long-term partnerships with existing or new stakeholders. To provide an overall framework, we define co-innovation as the shared work of two or more actors – among consumer industry companies, suppliers, business partners, and service providers – aimed at innovating the business models of one or more of the involved actors.

Specifically for the retail industry, potential partners include other retail companies, consumer packaged goods (CPG) companies, hospitality companies, car makers, third-party logistics providers (3PL), utility companies, insurance providers, banks, healthcare companies, IT vendors, IT service providers (such as systems integrators and consulting firms), social media platforms, and retail technology start-ups.

The key objective of these partnerships is to generate new tangible value for retailers, the involved enterprise parties, and consumers that they share thanks to collaboration. Importantly, co-innovation can be properly executed only by considering the key dimensions of people, process, and technology.

According to our data, 14% of retailers are already actively running at least one co-innovation program. These retailers are often driven by an overarching innovation strategy and operate by focusing on continuously innovating their business models. At the same time, it is impressive to notice that in the next 24 months, 64% of retailers will be active in co-innovation.

For retailers, co-innovation is key to optimize the resources that they invest in innovation, better understand consumers, and accelerate innovation piloting, implementation, and scaling. Interestingly, 25% of retailers running or planning to launch at least one co-innovation program have an IT vendor or a service provider as main partner to execute their plans.

With technology being one of the three key enabling dimensions of co-innovation, retail commerce platforms (see *IDC MarketScape: Worldwide Retail Commerce Platform Software Providers 2020 Vendor Assessment* – IDC #US46038320, November 2020; and *IDC MarketScape: Worldwide Retail Commerce Platform Services Providers 2020 Vendor Assessment*, IDC #US46162920, December 2020), retail-specific Al capabilities, and industry-collaborative clouds provide retailers with increasing opportunities for integrating their applications and databases to the ones of innovation partners.

Importantly, the efficient and effective execution at scale of co-innovation implies that a retailer has already started implementing a retail commerce platform. At the same time, co-innovating requires retailers to extensively use DevOps tools and practices and to develop open application programming interfaces (APIs) and packaged software development kits (SDKs) that can be leveraged by innovation partners.

Based on these premises, with this report, IDC Retail Insights aims to support retailers in their selection of co-innovation service providers (SPs). For the purpose, this IDC MarketScape assesses the capabilities and strategies of worldwide SPs in supporting and collaborating with the retail industry in defining and executing co-innovation strategies. Therefore, we consider the shared work conducted by SPs and their retail industry clients, with the objective of innovating clients' business models.

Looking at the SP ecosystem, IDC Retail Insights finds that:

- The SP community is developing co-innovation services.
- Some SPs demonstrate excellent breadth and depth of proprietary co-innovation services offerings, paying attention to the provision of selected retail-specific services.
- At the same time, some SPs demonstrate an excellent strategic setup for co-innovation services. These SPs leverage very clear and forward-looking co-innovation frameworks that facilitate envisioning and planning the co-innovation effort.
- A group of SPs is also combining co-innovation services with the provision of proprietary software offerings, such as artificial intelligence (AI)/machine learning (ML) analytics platforms, that enable a variety of retail business use cases.
- A group of SPs has developed formal offerings for partnering with their clients in the development of new intellectual property (IP). In the most forward-looking approaches, such offerings are founded on flexible, value-based pricing models that enable the retailer and the SP to share the risks and benefits of the new IP, including the possibility for the client to offer the new IP through an as-a-service model to other peers.

IDC MARKETSCAPE VENDOR INCLUSION CRITERIA

In this IDC MarketScape, IDC Retail Insights assesses the capabilities and strategies of several SPs serving the co-innovation needs of retail companies across industry segments (food and non-food retail).

SPs must provide worldwide coverage and demonstrate strong market penetration through direct presence and knowledge of the U.S., EMEA, and APAC business contexts. The service provider must be able to support global retailers in executing co-innovation activities and expansion across mature and emerging markets.

The provider needs to directly offer the majority of services mentioned in this list:

- A start-up-sourcing program run by the services provider that:
 - Enables retailers to establish partnerships with start-ups
 - And/or enables retailers to acquire said start-ups
- A formal program for the co-development of IP shared between the retailer and the services provider
 - Within this program, a custom application development (CAD) service is provided as execution enabler of the IP
 - A legal process outsourcing (LPO) service is also provided as complement to this program.
- A network of co-innovation labs that serve as physical and virtual hubs where retailers' lines of business (LOBs) and IT people in charge of innovation can work with the IT service provider and its partners.
- A hackathon and crowdsourcing program for addressing specific technology challenges faced by retail clients.
- Business and IT consulting for enabling co-innovation processes by leveraging technologies such as cloud, AI/ML analytics, 5G, blockchain, Internet of Things (IoT), 3D printing, and robotics.
- Systems integration services leveraged to integrate the outcomes of co-innovation over the different phases of innovation piloting, implementing, and scaling.
- Retail-specific business analytics services to be leveraged for data-driven decision making during the co-innovation process.

The SP can cover up to three of the mentioned services through the offering of one or more certified partners. The provider can fulfill or enrich its portfolio of services through proven collaborations with external partners. In such cases, the provider must demonstrate its active role in supporting the client as well during the delivery of the services provided by its partners.

The provider must have experience in retail industry service provisioning in the broadest possible set of industry processes and segments; providers with no experience will not be included.

ADVICE FOR TECHNOLOGY BUYERS

Planning, executing, and sustaining long-term co-innovation efforts is a resource-intensive process requiring solid organizational capabilities, technology assets, business and IT processes, and partner relationships.

To maximize the value from investments in co-innovation, IDC Retail Insights recommends retailers to:

- Dedicate your initial efforts to the definition of a companywide innovation strategy, focused on innovating your overall business model rather than on isolated technology use cases.
 Consider co-innovation as a fundamental enabler of innovation strategy execution.
- Design a transformation road map based on the principle of horizons to reduce complexity and sequence the delivery of outcomes. In each horizon, different uses cases are to be deployed, introducing the logic of a transformation journey that is designed to be modular (i.e., breaks the effort into chunks/use cases), delivering immediate business value; scalable (i.e., thinks through how the road map will evolve); and extendable (i.e., accommodates changes as they develop).
- Gear your transformation road map on the implementation of a retail commerce platform (with core capabilities for customer experience, commerce, order fulfillment, and content optimization services). Such type of platform is the key asset to pilot, implement, and scale the outcomes of co-innovation and to generate short-term profits and long-term growth.
- Involve internal stakeholders from logistics, stores, ecommerce, merchandising, and other core value chain functions in the early stages of co-innovation planning.
- Engage and partner with SPs, paying special attention to characteristics and capabilities considered as the most critical, such as:
 - A combination of solid IT consulting, business consulting, systems integration, and managed services capabilities, supported by in-depth expertise in the retail industry and its subverticals.
 - A business-model-driven co-innovation approach, through which the SP supports the
 retailer in understanding how to generate new value across its value chain, and how to
 enable it by addressing the people, process, and technology dimensions.
 - An established ecosystem of technology start-ups (both horizontal and retail-focused) that can be involved in the SP-retailer partnership from the early stages of the co-innovation process.
 - The availability to co-develop IP based on clear and formal partnership agreements as well as IP monetization models.
 - A network of physical co-innovation hubs with global presence that can also be leveraged in virtual formats. It is important that – along with horizontal technology centers of excellence – an SP offers a selection of retail-specific hubs dedicated to aspects such as customer experience and store enablement.

Finally, retailers should use this report to support their SP selection evaluation processes and:

 Get an independent first assessment of SPs' capabilities in co-innovation with specific reference to retailers' business needs.

- Narrow down the list of companies they might partner with or request proposals from.
- Leverage criteria used in this report to shape their own individual selection evaluation processes.

VENDOR SUMMARY PROFILES

This section briefly explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and opportunities.

Accenture

IDC Retail Insights has positioned Accenture in the Leaders category in this 2020 IDC MarketScape on retail co-innovation services providers.

Founded in 1989 and incorporated in Dublin, Ireland, Accenture is a global professional service company, serving clients in more than 120 countries and working across 40 industries. Accenture has 506,000 employees, including more than 36,000 across digital strategy, design, analytics, technology, mobility, and operations, supported by skilled professionals with specific capability knowledge in IoT, cloud, AI, augmented/virtual reality (AR/VR), and automation process deployment.

Accenture's overall co-innovation strategy is organized and executed according to two main frameworks:

- Accenture Innovation Architecture, which comprises six elements: Accenture Ventures, Accenture Labs, Accenture Innovation Centers, Accenture Delivery Centers, Accenture Studios, and Accenture Research.
- Accenture FORM, which relies on three elements: ways of working, iterative approach to innovation, and key skills.

For the retail industry, Accenture's co-innovation strategy focuses on six business domains: cost to serve, workforce, supply chain, store of the future, digital commerce, marketing, and merchandising. The consulting firm then addresses these six retail-specific business domains by leveraging capabilities that include the optimization of operations across the value chain, security of IT systems, data management and analytics, and delivery in hybrid cloud environments.

Among the retail co-innovation specific services that we consider in this IDC MarketScape, it is interesting to highlight Accenture's offering for:

- Start-up sourcing services. The consulting firm delivers this service through the Accenture Ventures arm. Accenture Ventures has presence in more than 40 countries and has invested in more than 30 start-ups. The service has more than 50 priority start-up partners, and it has engaged more than 5,000 start-ups covering disparate technology domains. By leveraging M&A services, Accenture can also support retailers in acquiring start-ups from its ecosystem.
- Co-development of IP and CAD services. Accenture leverages Accenture Labs to develop IP for and in collaboration with its retail customers. The service is organized around five main R&D groups:
 - Digital Experiences. Developing technology concepts for customer and employee engagement.
 - Artificial Intelligence. Addressing customers' business challenges by using techniques such as machine learning, natural language processing (NLP), explainable AI, knowledge representation, and reasoning.
 - Systems & Platforms. Developing frameworks and tools in support of retail enterprise architectures that have to manage considerable amounts of data, devices, and systems.

- Application Engineering. Applying intelligent automation in retail software development life cycle.
- Security. Addressing retailers' cyberdefense strategies and capabilities, such as threatcentric management, advanced detection methods, and data protection at scale.
- Co-innovation labs services. The company leverages its four global Accenture Customer Innovation Network (ACIN) centers in Bangalore, Chicago, Milan, and Singapore. The consulting firm collaborates with its retail clients in physical (and virtual) spaces to incubate innovation ideas that leverage technology to address customer-oriented business challenges.
- Hackathon and crowdsourcing services. Accenture leverages Accenture Studios and Accenture Innovation Labs to provide its retail clients with in-person and virtual hackathons and crowdsourcing services. To deliver the services, the consulting firm combines the competencies of strategists, storytellers, and data experts.
- Systems integration services. Accenture combines the capabilities of Accenture Studios and
 of Accenture Deliver Centers (with presence in more than 50 locations worldwide). The
 processes of the two assets are connected to integrate retailers' existing systems with the
 outputs of co-innovation efforts and to scale them across retailers' enterprise systems.
- Retail-specific business analytics services. To address this domain, Accenture has set up a partnership with Microsoft and Avanade. The partnership led to ai.RETAIL, Accenture's offering built on Microsoft Azure platform as a service (PaaS) for applying AI to marketing, merchandising, and supply chain. Specifically, the service focuses on customer engagement; assortment, forecasts, and inventory; and cost to serve and operate.

Strengths

- Among the service providers assessed in this IDC MarketScape, Accenture is one of the most active in acquisition activities. For example, between 2018 and 2020, the consulting firm acquired companies such as Happen, ?What If!, and VanBerlo. The three companies provide innovation services with a focus on the consumer industry. More specifically, the Happen and ?What If! acquisitions demonstrate Accenture's increasing focus on providing innovation services based on people and skills capabilities.
- Accenture enables applying a value-based pricing model for the provision of its retail coinnovation services. This type of pricing is directly related to outcomes such as benefits and business value delivered by the consulting firm, and IDC believes it is a model that retailers should prioritize when engaging in co-innovation projects.

Challenges

- The pricing of Accenture services is in the upper range. Retailers prioritizing a pure pricebased engagement might find it difficult to fit this type of pricing into their innovation budgets.
- Retailers evaluating Accenture's co-innovation services for the first time if under pressure to rapidly choose a provider – might find it difficult to orient themselves with the company's portfolio of frameworks and offerings in short timeframes.

Capgemini

IDC Retail Insights has positioned Capgemini in the Leaders category in the 2020 IDC MarketScape on Retail Co-Innovation Services Providers.

Capgemini is a global service provider with more than 250,000 employees and presence in more than 40 countries. The company provides different types of services – professional, consulting, application, and managed services – across a number of industries, including the consumer products and retail sectors.

Capgemini's main co-innovation framework is called Applied Innovation Exchange (AIE), which is also the company's name for its network of co-innovation labs. The framework is built on four key services through which Capgemini addresses the different phases of the innovation process:

- Discover. This service provides retailers with trainings on new business models, emerging technology trends, and industry business issues. These support the identification of innovation opportunities and their organizational impact.
- Devise. This service supports retailers in developing proofs of concept, building minimum viable products (MVPs) and proofs of value, and designing business models and platform architectures.
- **Deploy**. This service aids retailers for the launch of innovation pilots and the subsequent phases of testing, measuring, iterating, and adopting successful pilots at scale.
- **Sustain**. This service helps retailers with the development of their own innovation proficiency, company innovation culture, and the capabilities and governance setup to manage innovation.

Among the retail co-innovation-specific services that we consider in this IDC MarketScape, it is interesting to highlight Capgemini's offering for:

- Start-up sourcing services. Through AIE, Capgemini offers to retailers access to its innovation ecosystem comprising retail technology start-ups, venture capital and private equity firms, start-up accelerators and incubators, alliance partners, academia, innovation experts, and Capgemini's retail experts. Through Capgemini Invent, the company also offers retailers a consulting service for acquiring start-ups.
- Co-innovation labs services. Capgemini leverages 21 AIE hubs across 13 countries, coordinated according to the overall AIE framework. Such hubs offer services for discovering, testing, and applying innovation by leveraging different types of technology and a co-location, open innovation approach. In Lille, France, Capgemini runs a hub dedicated to retail in which retailers can work with augmented/virtual reality (AR/VR), artificial intelligence (AI), and other emerging technologies.
- Hackathon and crowdsourcing services. Capgemini runs different types of periodical hackathons, including Capgemini internal challenges, "Hack to Hire" formats, and the "Tech Challenge" (focused on identifying tech talents in India). Capgemini's proprietary crowdsourcing service is called Accelerated Solutions Environment (ASE), and it supports clients in addressing complex change projects by leveraging dedicated events called ASE DesignSessions. The ASE offering also comprises a service called Acceleration Zone, consisting of a dedicated collaborative workspace set up at the client's location.
- Retail-specific business analytics services. Capgemini offers a portfolio of analytics services called Smart Retail Planner. By leveraging its business and IT consulting services, the company provides analytics capabilities in domains such as merchandise and assortment planning, demand planning, replenishment and allocation, category management, promotion management, and transportation and warehouse management. Furthermore, Capgemini offers master data management (MDM) services through which it provides advisory, implementation, and operations capabilities across supply, enterprise, and customer data management.

Strengths

- In April 2020, Capgemini formalized the acquisition of Altran Technologies. Such operation
 offers to Capgemini's consumer industry clients a considerable opportunity to co-innovate on
 the digital backbone for product life cycle, connected products, and asset management.
- Over the past five years, Capgemini has been conducting an interesting co-innovation project with Unilever, addressing the IP co-development of a social and business analytics platform called People Data Center. The platform is twofold on one hand, Unilever uses it for informing decision making (for example, in R&D, marketing, and retail collaboration); on the other hand, Capgemini and Unilever collaborate in providing an "Insights as a Service" offering to other consumer companies.

Challenges

- There are two attention points regarding its strategy underlying the acquisition of Altran:
 - The need for a formal retail-dedicated offering that explicitly addresses the specificities of the different retail subsegments
 - The capability to execute at scale retail information technology/business technology/ operations technology (IT/BT/OT) co-innovation projects that require complex modernization and integration processes of legacy IT systems in environments such as physical stores
- Capgemini leverages a formal process called OTACE for measuring and assessing customer satisfaction during the execution of projects. But compared with other companies in this IDC MarketScape, Capgemini has space for improvement in providing retailers with a dedicated platform for real-time monitoring of co-innovation projects' KPIs and resources engagement.

CGI

IDC Retail Insights has positioned CGI in the Major Players category in this 2020 IDC MarketScape on Retail Co-Innovation Services Providers.

Founded in 1976, CGI is a Canadian service provider with more than 78,000 employees across 40 offices and 400 locations across North America, EMEA, and APAC.

CGI's overall co-innovation strategy is organized and executed according to a framework that is part of the company's Management Foundation:

- CGI identifies its retail clients' needs through:
 - A formal process named "Voice of the client." For the consumer industry, the service provider interviews several clients across subindustries (retail, CPG, wholesale, and consumer services), geographies, and IT and business roles every year.
 - Day-to-day interaction with consumer industry clients.
- By leveraging this type of information, CGI identifies innovation opportunities and improvement areas for its existing retail services, runs an IP-focused program named "Innovate Collaborate Evolve" (ICE), and drives a "push/pull" innovation process that relies on:
 - Technology experts
 - Global marketing and consumer industry experts
 - Execution of innovation and IP programs (mostly based on CGI's IP for technology and BPO)

Among the retail co-innovation specific services that we consider in this IDC MarketScape, it is interesting to highlight CGI's offering for:

- Start-up sourcing services. CGI focuses on building an ecosystem of small cloud-native technology companies with a bottom-up approach. The service provider establishes local relationships with start-ups and collaborates with them to address retail clients' challenges through specific technologies.
- Co-development of IP and CAD services. CGI provides IP co-development services through the ICE program. The program supports retail co-innovation processes by funding initiatives that focus on scalability, industrialization potential, and cost/benefit balance. CGI leverages a third-party innovation platform (Spigit) to support various ICE initiatives. CGI provides the supporting CAD services to retailers through its own labs, centers of expertise, and local emerging technology practices (ETPs).

- Co-innovation labs services. CGI offers a global network of collaborative labs and innovation centers, supported by ETPs. For retail industry co-innovation, the service provider mainly leverages four innovation centers: two in France (one focusing on retail and the other on supply chain), one in the U.S. (focused on customer experience), and one in Canada (cross-industry with a retail focus).
- Hackathon and crowdsourcing services. Over the past three years, CGI has been running a
 yearly cross-industry hackathon from which it sourced retail-focused ideas. The service
 provider leverages the Spigit platform to also facilitate local challenges for its own local
 business units.

Strengths

- Within its portfolio, CGI offers Unify360 hybrid infrastructure services. In IDC's opinion, it is a portfolio of services that meets retailer needs to combine on-premises and cloud-based services, across the different assets of the internal retail value chain. Such services can be delivered through a private cloud on client premises or in CGI datacenters with a custom or hyperconverged approach. Among the services, CGI offers managed public hyperscale clouds (such as Microsoft Azure or Amazon Web Services) and legacy IT infrastructure management and integration (such as Unix, Linux, and mainframe storage).
- CGI has supported a client in the car dealership market in innovating its business model. The co-innovation activity consisted of two main aspects. CGI enabled the client to set up and run its ecommerce-based car-subscription model for consumers, and the service provider also supported the client in innovating its business model by setting up a software-as-a-service (SaaS) offering based on the existing IP. The customer now sells the SaaS IP to car manufacturers interested in running a consumer subscription model.

Challenges

- Since its launch, CGI has been focusing its strategy and offering on the provision of IT consulting and systems integration services. Over the past few years, the service provider has increased its focus on business consulting services, and it has developed its offering to expand its footprint for these services. Retailers prioritizing long-term business consultancy experience as a selection criterion for co-innovation services should consider this aspect.
- Retailers prioritizing the use of BPO services that are specifically designed and built for the
 retail industry should consider that CGI leverages a horizontal offering for BPO. Nonetheless,
 CGI is currently providing managed services addressing the entire portfolio of operations of a
 retailer's IT department.
- CGI's project and IP license models for co-innovation projects come at a fixed price (within which business metrics can be agreed). The service provider offers value-based pricing models (such as profit sharing) only if these are offered by the IT vendors that are directly involved in the specific co-innovation project. Retailers prioritizing value-based co-innovation partnerships should consider this aspect.

Cognizant

IDC Retail Insights has positioned Cognizant in the Leaders category in this 2020 IDC MarketScape on Retail Co-Innovation Services Providers.

Cognizant is a professional services company founded in 1994 and headquartered in Teaneck, New Jersey. The company has more than 280,000 employees globally and 290+ offices across North America, Latin America, India, China, Asia/Pacific, the Middle East, the U.K., and continental Europe.

Cognizant organizes itself around three service lines (spanning geographies, industry verticals, Cognizant consulting, global technology office, alliances, and accelerator and corporate functions):

- Cognizant Digital Business, for business model transformation
- Cognizant Digital Operations, for operating model transformation

Cognizant Digital Systems & Technology, for technology model transformation

For the retail industry, Cognizant's co-innovation strategy focuses on the business domains of customer experience and digital marketing, supply chain, stores, and merchandising. Such strategy is organized around a framework composed of three key elements:

- Customer innovation, focused on top-down innovation efforts such as innovation hackathons, and proactive pitches that directly involve retail customers
- Collaborative innovation, focused on innovation efforts that are run in partnership with enterprise IT vendors, digital technology start-ups, industry bodies, and academia
- Continuous innovation, focused on bottom-up innovation efforts such as hackathons and crowdsourcing, driven by the delivery teams supporting different retail clients

Cognizant executes the strategy by leveraging its own research activity and "theMarkt," an innovation program based on a physical retail experience lab.

Among the retail co-innovation specific services that we consider in this IDC MarketScape, it is interesting to highlight Cognizant's offering for:

- Start-up sourcing services. Cognizant regularly monitors the start-up market to identify
 companies that provide niche technologies that fit its customers' demands. At the same time,
 the company collaborates with its venture ecosystem partners to identify opportunities for
 start-ups partnerships.
- Co-development of IP and CAD services. Cognizant leverages theMarkt innovation program to work with retailers on the co-development of IP. The company offers two main IP ownership models:
 - Co-investment to develop the IP and attribution of a percentage share to the retailer for every implementation outside of client network.
 - Upfront investment by Cognizant with ownership of IP and reuse rights. In these models, the retailer pays a price based on transaction/usage of the IP.

Cognizant offers CAD services by leveraging the capabilities of theMarkt and of FoWndry (the company's innovation POD development team). The process starts with a discovery stage to gather retailers' requirements and then it uses techniques such as design thinking and rapid prototyping that are run in sprints.

- Co-innovation labs services. For the retail industry, Cognizant leverages Digital Innovation
 Centers, across the U.S., Europe, and APAC. Cognizant offers retailers the possibility to work
 with its strategists, domain experts, designers, solution architects, and partners to ideate,
 prioritize, build, and test new use cases.
- Hackathon and crowdsourcing services. Cognizant conducts periodic hackathons for its retail clients, assigning the resolution of key challenges faced by retailers. The sourced solutions are then judged by Cognizant's experts and selected for implementation. Occasionally, the solutions are sponsored by retail clients and are built in alignment with the client's requirements. Furthermore, Cognizant conducts an annual "mega hackathon" program for each of its business units. The exercise enables Cognizant associates to propose ideas and develop them.
- Business and IT consulting services. To deliver this type of service, Cognizant leverages
 theMarkt innovation program and applies the competencies of business consultants,
 technology architects, and full stack developers. The professionals run co-innovation
 processes that address technologies such as cloud, IoT, robotics, AR/VR, blockchain, voice,
 and automation.

 Retail-specific business analytics services. Cognizant provides a portfolio of proprietary services such as Persona Engine (for marketing strategy), Customer 360.Next (for customer data integration, One Retail (for product recommendation), Supply Chain Analytics (for inventory forecast), Clairvoyant (for POS terminal shrinkage prevention), and Customer Journey AI (for customer journey management).

Strengths

- Cognizant prioritizes the use of agile methodologies to deliver retail co-innovation projects. Even if this is a common approach among the companies assessed in this IDC MarketScape, a distinctive asset that Cognizant offers is the "Game of Pods," a performance gamification platform for software delivery. Such platform enables multidisciplinary teams involved in co-innovation projects to monitor the KPIs of the process and identify areas of improvement in both skills and project outcome areas.
- A customer praised Cognizant's capability to source, analyze, and select impactful ideas from the ecosystem of partners for a complex and time-sensitive innovation project. The customer also praised Cognizant for its ability to crowdsource impactful ideas for website design from its employees.

Challenges

- According to a customer, Cognizant has space for improvement in efficiently matching its business needs with specific offerings sourced from the portfolio of services and technologies. However, the customer highlights that this aspect is often addressed by conducting an indepth alignment with the service provider on the joint expectations of business and IT.
- According to a customer, Cognizant has space for improvement in standardizing the quality of delivery for systems integration services, as they've experienced both very good outcomes and outcomes below expectations on a few occasions.

EPAM

IDC Retail Insights has positioned EPAM in the Major Players category in this 2020 IDC MarketScape on Retail Co-Innovation Services Providers.

Founded in 1993 and headquartered in Newton, PA, U.S., EPAM is a service provider present in more than 30 countries and across six industries. EPAM has more than 38,000 employees, of which 33,750 are engineers, designers, and consultants. EPAM has more than 200 retail industry customers, with which it also runs co-innovation projects.

The company provides its co-innovation services to retailers through the EPAM Continuum Integrated Consulting offering. For this purpose, the service provider combines a consulting practice with capabilities in experience, technology, strategy, business, design (including space and interaction design), and industry-specific themes, as well as a technical practice with capabilities in engagement, marketing, cloud, analytics, Dev-Test-Sec-Ops, product management, mobile, IoT, and Al/ML-based automation. The founding co-innovation framework is built on six main steps:

- EPAM leverages its consulting and technical practices to identify the scope of the coinnovation opportunity with the client.
- Once the opportunity is identified, the service provider defines with the client the appropriate combination of technologies and processes to execute the co-innovation project.
- The third step also called "evaluate and advance" consists in prototype building and testing to validate or revise the initial combination of assets before moving to the project execution itself.
- From the fourth step, EPAM predominantly leverages its digital and physical development teams to produce the minimum viable product (MVP) by using agile and iterative methodologies.

 The fifth and sixth steps consist of the beta testing process of the MVP and its deployment according to the targeted scale for operational purposes, respectively.

Among the retail co-innovation-specific services that we consider in this IDC MarketScape, it is interesting to highlight EPAM's offering for:

- Co-innovation labs services. among the services offered by EPAM in this domain, one of the most important assets is the Made Real Lab (MRL). With seven dedicated facilities worldwide (across U.S., EMEA, and APAC). The MRL leverages a team of prototyping experts that collaborate with retailers in the development process of physical and digital products. The capabilities provided through MRL include social and technology exploration, experiential prototyping, proofs of concept, technology prototyping, and pilot runs (MVP, Alpha/Beta Livelabs).
- Hackathon and crowdsourcing services. In this service domain, EPAM runs internal hackathon
 and developers jam, provides hackathons-as-a-service for its clients, and participates in global
 hackathons. In 2019, EPAM acquired Test IO through to provide crowd-testing software
 services for user story testing.
- Business and IT consulting services. EPAM offers services for a combination of different technology domains.
 - In the cloud space, the service provider leverages a dedicated cloud and DevTestSecOps practice and a cloud competency center, and it has established partnerships with companies such as Google Cloud Platform, AWS, and Microsoft Azure.
 - In the blockchain domain, EPAM has invested and is an integration partner with SigmaLedger, a blockchain-based platform that focuses on business use cases such as counterfeit prevention, supply chain traceability, and direct marketing.
 - In the IoT space, EPAM leverages an IoT practice that works in partnership with IoT platforms such as AWS IoT, SAP Edge Services, Azure Edge IoT and Azure IoT Hub, and Google Cloud IoT. The practice addresses business use cases that include security and surveillance, digital twins, supply chain management, inventory and warehouse management, and customer order tracking & delivery tracking.
- Retail-specific business analytics services. EPAM leverages its data & analytics practice (consisting of 4,500 employees) to provide three types of data-oriented services: advisory and assessment (for example, data strategy consulting), design and plan (for example, enterprise data and analytics platform design), and build (for example, data integration and engineering). The practice focuses on technologies such as predictive analytics, recommendation systems, computer vision, and natural language processing. Furthermore, EPAM is a partner of companies such as Google Advanced Solutions Lab (ASL), AWS, and Microsoft.

Strengths

- EPAM offers to its clients an interesting delivery transparency toolset that is integrated into its infrastructure and provided through the company's Telescope AI platform. IDC believes this is an important type of asset for running retail co-innovation projects. Among the tools available in EPAM's platform are PERF (a performance dashboard that provides visibility on aspects such as team and individual capacity, productivity, effort variance, and overall and predicted project progress), Report portal (providing visibility on test automation KPIs), and HEALTH Monitor (providing a managerial monitoring and reporting platform for the delivery status of projects).
- EPAM has developed its own IP for cloud delivery services. IDC believes the capability to adequately manage cloud infrastructures is mission critical for co-innovation projects. Within its portfolio, EPAM offers services such as Cloud Orchestrator (a framework for multiplatform and multicloud federated application orchestration) and EPAM Delivery Platform (EDP, a Dev-Test-Sec-Ops Platform providing a combination of infrastructure and automation capabilities).

Challenges

- EPAM was first launched as a technology delivery company, consolidating this type of capabilities over the years. According to a customer, EPAM has space for improvement in the business consulting domain, particularly within the management and strategic consulting areas. However, the customer still believes the service provider's offering road map is aligned with the needs of the retail industry.
- Compared with some of the service providers assessed in this IDC MarketScape, EPAM has space for improvement in building a formal start-up ecosystem and start-up sourcing program that retailers can refer to when planning and running co-innovation projects. EPAM is addressing this aspect by partnering in investments projects, such as the Global Opportunity Philadelphia Fund.

HCL

IDC Retail Insights has positioned HCL in the Leaders category in this 2020 IDC MarketScape on Retail Co-Innovation Services Providers.

HCL is a service provider with headquarters in Noida, India. Founded in 1976, the company has more than 150,000 employees (more than 2,700 people specifically dedicated to co-innovation). HCL covers Asia, the Americas, Europe, and Africa. The company has retail customers mainly in the areas of home furniture, apparel and accessories, building materials, ecommerce, and food stores.

HCL's framework for executing co-innovation projects is called FENIX2.0. The framework comprises four quadrants, according to which the service provider and the client map the co-innovation activities. In turn, the quadrants are built according to two axes. The horizontal axis considers differentiating vs. non-differentiating business processes, while the vertical axis considers whether the applications or business processes are coherent with the target landscape from a road map perspective (i.e., technologies to retire, experiment, or scale).

For the scope of this IDC MarketScape, "Quadrant 1" (differentiated business process combined with technologies to experiment) is the most relevant. In this initial stage, co-innovation activities focus on building market differentiation by addressing customer and employee experience, incubating agile organizational models, experimenting on disruptive technologies, and leveraging AI with a data-first approach and capabilities such as extreme programming and low-code function development. Based on this approach, HCL and its clients work on aligning co-innovation initiatives with clients' overall strategies, identifying potential product ideas that can be advanced in the product life cycle.

Among the retail co-innovation-specific services that we consider in this IDC MarketScape, it is interesting to highlight HCL's offering for:

- Start-up sourcing services. HCL offers a formal program called "eSTiP" (or also Ecosystem Innovation Program by ETO). Currently, the service provider has a scout pool and an explore pool of around 800 and 50 enterprise B2B start-ups, respectively. The program offers retailers the possibility to leverage an open innovation framework that addresses business areas such as stores, ecommerce, and supply chain management.
- Co-development of IP and CAD services:
 - HCL offers four main models for co-developing IP with its clients and partners. Among these models, the most relevant for retailers are:
 - Risk and Reward New product development. HCL invests with the client in new product development, sharing the outcome risk.
 - Risk and Reward Product sustenance. In this model, HCL is completely responsible
 of product development and support. At the same time, the service provider invests in
 updating the product.

- IP Partnership. HCL benefits from partial monetization of non-core assets, while the
 co-innovating counterpart retains the topline monetization and core IP. HCL is
 responsible for product development and support, and has exclusive source code
 rights granted in form of IP licensing.
- In the CAD space, HCL leverages its "21st century Application Development" model. The model is based on three key elements (i.e., C-A-B approach): consolidate systems of records (e.g., ERP), abstract systems of differentiation and intelligence (e.g., through API-based architectures), and build systems of engagement (e.g., focusing on customer experience).
- Co-innovation labs services. HCL leverages a framework based on four types of labs:
 - Sandbox. Co-innovation directed at very specific, one-time business needs for rapid output.
 - Lab on the go. Co-innovation run by a remote lab that is available to clients for a
 defined time and capacity on an opportunistic basis.
 - Full facility lab. Time and capacity exclusively dedicated to a specific client on a continuous basis.
 - IP-driven lab. Set up to enable the co-development of IP and its joint monetization between HCL and the client.
- Based on this framework, HCL provides its clients with the capabilities sourced from 28
 labs that include facilities such as "Scale Digital Delivery Centers," "Design Studios," and
 a "Cybersecurity Lab".
- Hackathon and crowdsourcing services. HCL provides these services through the "Scale Digital Center" based on the "Hack2Hire" process. With such approach, HCL focuses on leveraging hackathons for team-based project hiring in coordination with the client.

Strengths

- HCL reports a very high amount of R&D investments, with focus on areas that are important to retailers (such as AR, NLP, engagement platforms, mobile payments, service personalization, and no-contact delivery).
- A customer praised HCL for its capability to understand the vision of the company, the
 peculiarities of its value chain, and the challenges that it was facing. Customers believe HCL
 is a good partner for both LOB and IT departments.

Challenges

- According to a customer, HCL has space for improvement in collaborating with clients in the definition of appropriate time and resources needed for complex digital transformation projects.
- Related to the above, customers think HCL has space for improvement in building the skills of its resources and in their optimal allocation across projects with different clients.

IBM

IDC Retail Insights has positioned IBM in the Leaders category in this 2020 IDC MarketScape on Retail Co-Innovation Services Providers.

This assessment is based on publicly available data and information from IDC's existing knowledge base on IBM, IBM's annual report, and IBM Global Business Services' (GBS) corporate website. IBM has more than 352,000 employees globally in its consulting services business, serving clients across 175 countries. IBM provides consulting services across different themes, functions, and industries — including retail — through IBM GBS.

IBM's co-innovation strategy is executed through IBM GBS. Such strategy is the result of a transformation process of the company's overall portfolio – from software, to hardware, to consulting and managed services – started over the past few years through acquisitions (of which the largest hybrid cloud technology acquisition has been Red Hat) and proprietary products such as IBM Watson, IBM Cloud, IBM Q, and IBM Garage.

IBM Garage is the main co-innovation framework that IBM offers to execute collaboration processes involving designers, developers, clients, and stakeholders. IBM Garage leverages a proprietary methodology delivered following a design thinking approach and structured according to three building blocks:

- Co-create. Focusing on the identification of new business opportunities or analyzing a client's existing idea.
- Co-execute. Focusing on the development of an MVP, starting from a previously identified business opportunity.
- Co-operate. Focusing on scaling an existing MVP with services for toolchains, architecture, reliability, monitoring, and- with a continuous delivery approach.

IBM provides such services through 16 co-innovation labs located across the U.S., Canada, Europe, Middle East, Asia, and Australia. Furthermore, IBM offers to its clients the possibility to set up an onsite co-innovation lab run according to the IBM Garage methodology.

IBM further supports its co-innovation capabilities with IBM's Digital Strategy and IBM's iX consulting offerings. IBM Digital Strategy provides strategy consulting in the perspective of business models redesign with a digital approach. At the same time, IBM iX hosts IBM GBS' design and creative studios, Salesforce consulting, digital commerce, and marketing platform services. IBM's design and creative capability is supported by a global network of more than 35 design studios.

Over the past eight years, IBM has reportedly divested from selected businesses such as semiconductor manufacturing, x86 servers, and retail commerce software (for more information, refer to *IDC MarketScape: Worldwide Retail Commerce Platform Software Providers 2020 Vendor Assessment* – IDC #US46038320, November 2020) to allocate capital to innovation.

Strengths

- According to conversations between IBM's clients and IDC, IBM excels at helping clients manage risk, build more effective businesses, and improve their end customers' experience.
 IBM is as well perceived as one of the most capable consulting firms at implementing innovation and providing technical insights. "IBM has a complete portfolio of technology and advisory solutions," said a retail client.
- IBM is very active in supporting start-ups and building a start-up ecosystem whose capabilities can be leveraged by IBM's clients. For example, in February 2020, IBM announced the launch of the IBM Future Innovation Award in collaboration with International Fashion Academy (IFA) Paris. IFA Paris runs Foundry, a fashion tech innovation lab, aiming to support start-ups and enterprises in developing fashion industry technologies.

Challenges

Over the past three years, IBM GBS' financial performance has been hampered by the complex portfolio transformation that the company is undergoing. The decline of traditional areas of activity (e.g., large ERP and on-premises enterprise application implementation) still has to be balanced by a consistent revenue increase in new services. IBM GBS has to demonstrate financial performance and profit growth strategy that is instrumental to continue delivering the existing portfolio of co-innovation services.

Between 2018 and 2019, IBM has formalized the divestiture of seven software businesses, sold to HCL Software Product Ltd. The operation included important IBM products such as WebSphere Commerce (on-premises, managed, hosted) and IBM Digital Commerce (SaaS), Unica (on-premises) for marketing automation, Digital Experience software, and on-premises (WebSphere Portal and Web Content Manager). Retailers prioritizing a combination of co-innovation services and proprietary retail-specific commerce and experience software should consider this aspect.

Publicis Sapient

IDC Retail Insights has positioned Publicis Sapient in the Leaders category in this 2020 IDC MarketScape on retail co-innovation services providers.

Publicis Sapient is the digital business transformation hub of Publicis Groupe with over 20,000 employees in over 50 offices globally across North America, EMEA, and APAC.

Publicis Sapient is a digital consultancy offering a variety of services for the retail industry. As a foundational framework for its co-innovation services, the company leverages business consulting, management consulting, customer experience, engineering, and data consulting services (supported by agile delivery methodologies).

In particular, in the customer experience domain, Publicis Sapient offers customer research and anthropology/ethnography services, in combination with techniques that include computational design and Al-based experience processes.

Among the retail co-innovation specific services that we consider in this IDC MarketScape, it is interesting to highlight Publicis Sapient's offering for:

- Start-up sourcing services. The service provider leverages its business, technology, and experience capabilities to collaborate with retailers in identifying potential start-up partnerships. For the purpose, the company also leverages the business network of its team members within the sector of venture capital and angel investor groups. Publicis Sapient also offers services for the acquisition of start-ups, including due diligence, and recommendation and advisory services on transaction processes.
- Co-development of IP and CAD services. Publicis Sapient offers the possibility to collaborate
 on IP development based on a formal legal foundation that regulates IP ownership across
 parties. The company offers CAD capabilities that include the development of marketplaces,
 store operations applications, order orchestration, and database scaling.
- Co-innovation labs services. The service provider offers to retailers a customized approach to co-innovation labs. Publicis Sapient focuses on building a shared lab staffed with its own and the client's resources, as well as planning and executing its activities according to the specific strategy, partners, and objectives defined for the long-term project. The service provider also offers services sourced from its existing labs, such as Kepler Lab (for AR/VR), X-Lab (for customer experience), Al Lab, Connected Retail Lab (a store prototype), and Digital Product Innovation.
- Hackathon and crowdsourcing services. Publicis Sapient offers retailers a portfolio of predefined hackathon formats, each focusing on a specific type of client's need. Among the available formats there are a time-driven format (spanning hours to weeks) and a format based on the type of people that are involved in the activity (client's resources, Publicis Sapient's resources, partners' resources, or combinations of these). In addition, the service provider offers Rapid Response Team (RRT), its proprietary hackathon format.

Retail-specific business analytics services. Publicis Sapient provides this type of services through a portfolio of proprietary and third-party Al/ML cloud platforms. For example, the service provider offers its Cosmos and Synapse platforms through Microsoft Azure, focusing on building customer data platforms. Similarly, Publicis Sapient offers its Idiom and PeopleCloud platforms on AWS, and it also leverages Google Cloud Google Cloud Advantages such as Ads Data Hub and BigQuery.

Strengths

- Publicis Sapient offers the possibility to leverage the Rapid Response Team methodology.
 RRT addresses clients' immediate needs in a defined timeframe of four weeks, starting from the identification of a concept up to functioning code. RRT focuses on building working prototypes that leverage real hardware and use actual customer data.
- A customer praised Publicis Sapient for the quality of delivery of a complex co-innovation project dedicated to the implementation of a customer data platform. The customer recognizes as well that the propensity to take the risk of innovation is one Publicis Sapient's distinctive elements in co-innovation projects.
- At the beginning of 2020, Publicis Sapient invested in a joint venture with Elder Research, a specialist in data science services, that has led to the launch of PS Al Labs. The objective of the lab is to leverage the capabilities of data scientists and Al experts to deliver predictive analytics services to clients.

Challenges

- Publicis Sapient's strategy focuses on executing large-scale transformations for retailers.
 Small and medium-sized size retailers that need to execute projects of relatively limited scale and want to consider Publicis Sapient's services should consider this aspect.
- Publicis Sapient offers a broad portfolio of co-innovation services. But compared with other companies assessed in this IDC MarketScape, the service provider presents its co-innovation offering as a distributed capability of its broader business and IT consulting services rather than communicating it through dedicated frameworks. Retailers prioritizing clear co-innovation frameworks for the evaluation of service providers' offerings should consider this aspect.

TCS

IDC Retail Insights has positioned TCS in the Major Players category in this 2020 IDC MarketScape on retail co-innovation services providers.

TCS is a service provider with headquarters in Mumbai, Maharashtra, India. Founded in 1968, the company has approximately 448,000 employees (of which more than 40,000 are dedicated to the retail industry) and covers Asia, the Americas, the U.K., and Europe.

TCS' offering for co-innovation services is in the TCS Algo Retail framework, its overarching approach to providing business consulting services within the different domains of the retail value chain by using Al/ML capabilities. The company leverages a "Retail Strategic Initiatives Unit" dedicated to supporting retailers in using the portfolio of services available in the TCS Algo Retail framework.

Within the framework, TCS offers Algo Scan as an assessment service based on five key steps:

- Mapping of the retailer's IT and business landscape for building a library of processes and use cases
- Current state analysis
- Identification of opportunities for improvement
- Application of a prioritization framework
- Decision on whether to adopt off-the-shelf or custom-built products and services

TCS executes Algo Retail by leveraging an Al-based portfolio of products (such as TCS OmniStore, TCS Optumera, and TCS Optunique) and business consulting and advisory services, addressing themes such as digital transformation, business strategy, platform engineering and support, omnichannel business models, customer experience design and personalization, cloud architecture, and data management.

Among the retail co-innovation specific services that we consider in this IDC MarketScape, it is interesting to highlight TCS' offering for:

- Start-up sourcing services. TCS offers to clients its Co-Innovation (COIN) program, through which it selects and includes start-ups and academic institutions in its innovation ecosystem. The inclusion of start-ups in the program is decided according to business and technical due diligence. The primary criteria for selection is their strategy and capability to address specific retail business challenges. Start-ups in the COIN program then go through a formal process of positioning with retailers to execute the co-innovation process.
- Co-innovation labs services. In 2018, TCS has launched TCS Pace, a program focused on research, innovation, and digital transformation services. To support the program, the company leverages TCS Pace Port hubs, with three currently open (Tokyo, New York, and Amsterdam) and plans for opening in Canada, Europe, the U.K., and Latin America. For example, the New-York-based hub focuses on retail, travel, transportation and hospitality, and life sciences industries as well as hosts collaborations between the service provider, clients, Cornell Tech University students, professors, and local start-ups. Pace Port leverages assets such as TCS Design Services, Innovation Showcases, Domain Solutions, COIN Accelerator, Agile Workspace, and Academic Research Lab.
- Hackathon and crowdsourcing services. TCS runs both ideathons and hackathons as events. Given a specific retail industry challenge, ideathons focus on crowdsourcing idea generation for new methods, techniques, or different processes to address a specific client challenge, while hackathons focus on building prototypes or proofs of concept. TCS also offers an "innovation as a service" model that also includes regular ideathons and hackathons based on the client's specific challenges or use cases. For a leading U.K. retailer, TCS formed coding clubs and idea clubs that were running two ideathons and hackathons per quarter (ideathons include "How to improve footfall in store via mobile devices," "Ideas to improve Food sales online," and " Connected Fitting room possibilities"). The Innovation Lab setup for the client ensured regular start-up connections and annual visits to the Santa Clara design lab, helping the customer with idea generation and solutions to specific challenges.
- Business and IT consulting services. Further to Algo Retail, TCS also leverages its Business 4.0 framework for providing co-innovation services. With such framework, TCS focuses on customer experience management and on the consolidation of customer data across the enterprise systems. The service provider offers consulting for digital strategy, customer engagement strategy, stores, merchandising, omnichannel supply chain, and customer journey transformation.

Strengths

- Among the assets supporting TCS' co-innovation services, the company also offers services through TCS Nucleus, its dedicated Retail Research Center. It is a lab focused on retail customer experience use cases such as self-driving shopping cart, allergen scanner, virtual try-on, Al-based digital wardrobe, live commerce, and robotic logistics. TCS also conducts regular hackathons and crowdsourcing programs. For example, the company has conducted a college-student hackathon focused on AR-based store navigation.
- A customer has praised TCS for Co-innovation Services for the overall project management process, delivery and engagement model, and uniform execution of the project.

Challenges

- TCS does not generally pursue joint IP co-development in commercial engagements with its clients, as it relies on a two-fold approach to IP ownership. TCS retains the ownership of any of its products and frameworks, while clients own any new IP developed expressly for them. Joint IP is pursued under specific scenarios. Retailers prioritizing the execution of co-innovation partnerships through which they can share the risks and opportunities of co-developing and monetizing IP should consider this aspect.
- TCS pursues a strategy focused on the organic growth of its capabilities. Due to this strategy, the service provider hasn't conducted any start-up acquisition over the past year. Similarly, it has not been active in M&A in previous years. However, TCS leverages its ecosystem (start-ups and academia) through its COIN program. Retailers prioritizing partnerships with service providers that pursue acquisition-focused strategies for the growth of capabilities and geographic coverage should consider this aspect.

Tech Mahindra

IDC Retail Insights has positioned Tech Mahindra in the Major Players category in this 2020 IDC MarketScape on Retail Co-Innovation Services Providers.

Tech Mahindra is a service provider with headquarters in Pune, India. Founded in 1986, the company has approximately 42,800 employees (with 4,000 dedicated to the retail commerce platform). Tech Mahindra has a global coverage across 90 countries, with 56 offices in the EMEA region, 27 offices in Asia/Pacific, and 31 offices in the Americas. The company's offering focuses on retail segments such as fashion and apparel, food and beverage, and general merchandise.

Tech Mahindra's co-innovation framework is in the service providers' overall capabilities for business strategy and design strategy consulting, focused on customer experience. Further to customer experience, the company is addressing five other main areas of business and IT consulting for retail value chains: supply chain; partner, portfolio, and competency ecosystem (including M&A services); digital workplace; IT architecture; and ecommerce implementation.

Among the retail co-innovation specific services that we consider in this IDC MarketScape, it is interesting to highlight Tech Mahindra's offering for:

- Start-up sourcing services. Tech Mahindra collaborates with start-ups that are active in areas such as IoT, AI/ML, blockchain, and AR/VR. The service provider leverages so called "Joint Working Groups" to collaborate in-person and virtually with its clients and partner start-ups. The offered services focus on retail business use cases such as demand forecasting, voice-based commerce, and online content management.
- Co-development of IP and CAD services. Tech Mahindra offers to its clients standard operating procedures for the co-development of IP as a formal component of its master services agreement and the statement of work. To provide these services, the company leverages its innovation "Makers Labs" that are domain competency and technology teams focused on developing new IP in collaboration with retailers. To support IP co-development, Tech Mahindra offers CAD services that leverage its software partners' base code. The services are executed through a project development and delivery framework that addresses aspects such as requirements gathering workshop, architecture definition and assessment, enterprise application integration, application testing, data migration, and change management.
- Co-innovation labs services. Tech Mahindra offers a network of innovation-focused facilities called Makers Lab. The company leverages such labs in collaboration with clients and partners to develop, pilot, and implement digital products and services. The service also provides virtual environments to enable teams to collaborate, ideate, validate, test, demo, fix, and deploy digital products by leveraging DevOps approaches such as continuous integration/continuous development (CI/CD).

- Hackathon and crowdsourcing services. Tech Mahindra offers services such as hackathon and innovation challenges to support the execution of co-innovation projects. The service provider also leverages the "IRIS" service, a crowdsourcing forum that serves as a hub for contributing ideas, identifying the appropriate teams for the execution of the idea, building prototypes, submitting them to the sales teams for feedback, and sharing the selected prototype with the client.
- Retail-specific business analytics services. Tech Mahindra leverages its technology centers of excellence for cloud, AI, data management, and visualization as foundational to deliver its business analytics services. For retail, the company leverages data sources such as social media, point of sale, household scan data, geopolitical trends, and macroeconomic factors. At a business-use-case level, Tech Mahindra's offering includes analytics services for areas such as demand forecast, inventory management, direct-to-consumer engagement, conversational interfaces, and price management.

Strengths

- Tech Mahindra offers a service called GAiA 2.0 that provides AI/ML capabilities for enterprises. GAiA 2.0 is an industrialized version of the open source Acumos platform. Such platform has been co-developed by Tech Mahindra and AT&T and available under LF AI an umbrella foundation of the Linux Foundation that supports open source innovation in artificial intelligence, machine learning, and deep learning.
- Tech Mahindra conducts an annual innovation event called TechmNxt.AI. The forum aims to build relationships among the service provider's clients, start-ups, partners, and academia. Furthermore, Tech Mahindra offers a service called StartNet, a business-to-business (B2B) marketplace in which start-ups work with Tech Mahindra to build services that address clients' specific challenges.

Challenges

- Within the retail industry context, Tech Mahindra plans to dedicate the majority of its efforts to co-innovation projects with food stores, fashion, and specialty retail segments. Retailers operating outside these segments should consider this aspect when evaluating a collaboration with Tech Mahindra.
- Tech Mahindra offers different pricing models to its clients (including outcome-based, such as profit sharing). But for the provision of co-innovation services, the company leverages predominantly time-and-materials pricing models. Retailers prioritizing co-innovation partnerships in which pricing models reflect the shared risks and opportunities of business model innovation should consider this aspect.
- Regarding the allocation of offshore and onsite resources, Tech Mahindra's talent pool is
 predominantly based in India. The company has ongoing efforts to increase the pool of local
 talents across the different geographies where it has active projects.

Wipro

IDC Retail Insights has positioned Wipro in the Leaders category in this 2020 IDC MarketScape on Retail Co-Innovation Services Providers.

Wipro is a service provider founded in 1945 with headquarters in India. The company has more than 180,000 employees in 60 countries across North America, Latin America, India, China, Asia/Pacific, the Middle East, South Africa, the U.K., and Central Europe.

Wipro's service provision strategy is based on two pillars: "Run," aimed at modernizing core systems and processes through simplification, hyper-automation, containerization, and digitalization; and "Change," aimed at transformation and innovation through designing personalized experiences driven by cloud computing, cognitive computing, blockchain, and IoT. This strategy translates into key investment areas such as as-a-service models, automation, digital, and open innovation.

Wipro's co-innovation framework is built on the company's two main macro-areas of innovationoriented business consulting, addressing the different aspects of retail functions across retail value chains.

The first macro-area covers strategic innovation, for which Wipro offers services such as asset-based consulting (ABC). ABC is provided through subject-matter expert consultants who leverage technology-enabled tools, frameworks, products, and platform assets. Within this macro-area, Wipro also provides a service for addressing the main retail innovation themes by building an inventory of retail sub-segment specific use cases.

The second macro-area covers operational innovation, for which Wipro offers services addressing aspects such as the identification of business process and user experience critical issues, provision of retail-specific hardware support, and automation advisory.

Among the retail co-innovation specific services that we consider in this IDC MarketScape, it is interesting to highlight Wipro's offering for:

- Start-up sourcing services. Wipro collaborates with an ecosystem of B2B start-ups for the joint development of new IP, integrating start-ups' technology into the service provider's platforms. Based on this, Wipro runs an open innovation program and offers access to its start-up ecosystem to retail clients. Retail clients work with Wipro and selected start-ups (from a core pool of 50 companies) to address specific innovation challenges, and they can evaluate the capabilities of the wider start-up ecosystem for further innovation opportunities.
- Co-development of IP and CAD services. Wipro offers to its clients a formal joint innovation program to co-develop new IP and share its ownership. In support of such program, Wipro offers the Horizon2/ Horizon3 (H2H3) program. H2H3 focuses on selecting specific IP co-development opportunities and funding them through the sponsorship of Wipro's strategy office. Regarding CAD services, Wipro leverages its DevNxt platform, delivering custom applications via cloud providers such as AWS, GCP, Azure, and IBM cloud. Furthermore, the service provider offers application modernization services by leveraging responsive design, open source code, API and micro-services, and low-code frameworks.
- Co-innovation labs services. Wipro offers different types of lab programs to its clients. For example, the service provider leverages "Technovation Centers," physical spaces where clients can familiarize themselves with technologies such as blockchain, 5G, AR/VR, autonomous vehicles, and robotics. These centers also offer a "maker lab" for collaborating on industry-specific use cases. Another example is lab-as-a-service (LaaS), an offering through which Wipro co-innovates with its clients by providing retail domain expertise, a shared infrastructure, an on-demand facility, regulatory compliance setup, and remote access for the client.
- Hackathon and crowdsourcing services. Wipro offers a portfolio of services that include client-specific ideathons and hackathons: Topcoder (the company's crowdsourcing platform), Top Gear (a platform through which co-innovation resources can learn technical and domain skills), and Patent Carnivals (a quarterly internal event through which Wipro collects and applies for patent ideas on technologies such as cloud, Al, and IoT).
- Retail-specific business analytics services. Wipro provides these services by leveraging its proprietary offering from Data Discovery Platform, Digital Experience Platform, HOLMES Platform, and anomaly detection analytics. For example, HOLMES is an Al-based platform that leverages frameworks such as cognitive search, cognitive image processing, deep text extraction, and other cognitive services from Wipro's partners.

Strengths

- Wipro Ventures is a strategic investment arm of Wipro, launched in 2015 as a \$100 million fund. Over the years, Wipro has conducted ongoing efforts in the program, with the objective of supporting the network and collaboration among start-ups and its clients. As of early 2020, Wipro launched a second round of funding with an allocation of \$150 million. The service provider now has investments in 14 start-ups with which it partners in areas such as Al, business commerce, cybersecurity, data management, industrial IoT, automation, and cloud infrastructure. Therefore, Wipro offers to retailers the opportunity to collaborate with a solid start-up ecosystem that addresses capability areas that are relevant to the retail industry.
- Among the service providers assessed in this IDC MarketScape, Wipro is among the few ones to offer a clear and flexible pricing model for client-dedicated co-innovation labs. Wipro offers its lab-as-a-service through models such as subscription, on-demand lab infrastructure, complete capex and opex investment by client, and shared capex and opex investment by Wipro and client.

Challenges

- Wipro leverages a solid start-up acquisition strategy. However, such strategy results are mainly executed according to a horizontal technology-driven approach, with a minor focus on acquiring a pool of retail-specific companies that address different domains of the retail industry's value chain.
- Overall, customers praised Wipro's retail specific co-innovation services. However, some
 customers felt that Wipro could improve in the area of start-up sourcing services and
 hackathon services. Therefore, this highlights that Wipro has space for improvement in
 providing homogeneous delivery of such services to its clients.

APPENDIX

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is with customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis or strategies axis indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

SP footprint, depicted by the size of the bubble, is based on IDC Retail Insights' best estimates of the vendor revenue on a global basis for the provision of co-innovation services.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of IDC experts in each market. IDC analysts base individual vendor scores — and ultimately vendor positions on the IDC MarketScape — on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

This IDC Retail Insights study assesses the capabilities and strategies of worldwide service providers in supporting and collaborating with the retail industry in defining and executing co-innovation strategies.

To provide context for the assessment, we consider the following frameworks.

For the retail industry, we identify three main types of innovation:

- Contextual innovation. Innovation activities deliver better business outcomes but without having a disruptive impact on the retailer's business model.
- **Disruptive innovation**. Innovation activities deliver a transformational impact on the retailer's business model, and efforts focus on the internal value chain.
- Ecosystem innovation. Innovation activities deliver a transformational impact on the retailer's business model and on the business models of companies that are part of the retailer's extended value chain.

For the extended consumer industry value chain, we take as reference the following definition of coinnovation: co-innovation is the shared work of two or more actors — among consumer industry companies, suppliers, business partners, and service providers — aimed at innovating the business models of one or more of the involved actors.

For this specific IDC MarketScape, we consider the shared work conducted by services providers and their retail industry clients, with the objective of innovating the clients' business models. Thus, co-innovation services directed at disruptive and ecosystem innovation are the main object of the assessment.

The main reference markets considered in this IDC MarketScape are related to:

- IDC Worldwide Services Taxonomy, 2019 (Table 1)
- IDC Worldwide Digital Transformation Use Case Taxonomy, 2020: Experiential Retail (Table
 2)

Based on the mentioned reference markets, it is evident how co-innovation services are applied across the key dimensions of people, process, and technology. Thus, this assessment considers technology as an enabler of the co-innovation effort, rather than its primary focus.

For the purpose of this IDC MarketScape, we start from the mentioned reference markets and we define the list of retail co-innovation specific services mentioned in the section "Vendor inclusion criteria" of the report.

IDC Worldwide Services Taxonomy, 2019

Primary Market	Foundation Market	Specific Areas Considered in this IDC MarketScape
Project-oriented services	Business consulting	Strategy consulting
		Operational improvement consulting: Governance, risk, and compliance (GRC) consulting
		Change and organizational consulting: change management, organizational consulting, mergers and acquisitions, communication
	IT consulting	IT strategy consulting
	Systems integration	
	Custom application development (CAD)	
Managed services	Business process outsourcing (BPO)	Key horizontal business process outsourcing BPO: HR BPO (talent management)
		Vertical (industry-specific) BPO: legal process outsourcing (LPO), business analytics services specific to an industry
Support services	IT education and training	-

Source: IDC, 2020

TABLE 2

IDC Worldwide Digital Transformation Use Case Taxonomy, 2020: Experiential Retail

Digital Mission	Strategic Priorities	Programs	Use Cases
Experiential retail	Omni-channel commerce	Experiential commerce	Commerce service
			Digital content management
			Cashierless checkout
			Headless commerce
			Next-gen payments
		Intelligent fulfillment and returns	Omni-channel order orchestration and fulfillment

IDC Worldwide Digital Transformation Use Case Taxonomy, 2020: Experiential Retail

Digital Mission	Strategic Priorities	Programs	Use Cases
			JIT production
			Real-time inventory management
		Virtual and augmented experience	Virtual and augmented engagements
			Digitally connected product experiences
			Augmented and visual product discovery
	Curated merchandise life- cycle management	Intelligent product design	3D product design and review
			Crowdsourced ideation and innovation
			Sustainable product lifecycle design
		Curated product assortment and positioning	Assortment optimization
			Sentiment analysis
			Dynamic pricing
			Life-cycle pricing optimization
		Product innovation	B2B networks/marketplaces
			Digital product life-cycle management
			Global product requirements compliance management
	Omni-experience customer engagement	Next-generation customer care	Optimized customer relationship/loyalty programs
			Omni-channel customer support
			Social marketing
		Customer experience analytics	360° connected customer data management

IDC Worldwide Digital Transformation Use Case Taxonomy, 2020: Experiential Retail

Digital Mission	Strategic Priorities	Programs	Use Cases
			Customer experience and behavior analytics
			Digital content optimization
			Customer experience process management
		Hyper-personalized engagement	Contextualized marketing
			Optimized promotion development and distribution
			Omni-channel marketing and advertising
	Digital supply chain optimization	Optimized supply networks	Dynamic supply network management
			Supply forecasting and planning
		Optimized fulfillment operations	Predictive network inventory orchestration
			Advanced technology augmented work
			Optimized operations
			Advanced enterprise reverse logistics execution
		Supply chain accountability	Traceability
			Smart financial supply chain
			Supply chain safety and compliance management
	Efficient & innovation-ready operations	Mobile enterprise	Mobile inventory information management
			Mobile task management
			Mobile customer engagement
		Connected workforce	Digital workforce management
			Empowered worker

IDC Worldwide Digital Transformation Use Case Taxonomy, 2020: Experiential Retail

Digital Mission	Strategic Priorities	Programs	Use Cases
			Augmented knowledge worker
			Robotic worksource
			Digital sales training and execution
		Secure omni-channel operations	Fraud management
			Next-gen digital security
			Next-gen loss prevention
		Profitability optimization	Sustainable environment optimization
			Asset management
			Physical safety and risk management
			Venue portfolio management
			Revenue and margin assurance

Source: IDC, 2020

Strategies and Capabilities Criteria

TABLE 3

Key Strategy Measures for Success: Worldwide Retail Co-Innovation Services Providers, 2020

Criteria	Definition	Weight
Functionality or offering strategy	There is a co-innovation services road map, based on customers' and partners' input, that covers the following primary (and secondary) markets. The listed markets are extracted from IDC's Worldwide Services Taxonomy, 2019.	30%
	Business consulting (strategy, operational improvement, change and organizational)	
	IT consulting (IT strategy)	
	Systems integration	

Key Strategy Measures for Success: Worldwide Retail Co-Innovation Services Providers, 2020

Criteria	Definition	Weight
	Custom application development (CAD)	
	 Managed services — key horizontal business process outsourcing (HR BPO, talent management) 	
	 Managed services — retail-specific BPO (legal process outsourcing, business analytics services specific to retail) 	
	The road map also states the strategic partnerships that service provider is leveraging and will leverage in the long-term.	
	Service provider has specific plans to deliver — in maximum 12 months from the moment of the assessment — new co-innovation services urgent to the client and improve on foundational offerings to improve ability to respond to immediate concerns.	
Financial/ funding	The company has a strong strategy for improving its co-innovation performances across retail segments, geographies, sales channels, and services portfolio.	13%
	Description of management short- and long-term profit and growth strategy for co-innovation services. Description of how the service provider assesses the future demand of co-innovation services and future customers' needs (number of current and expected customer, average revenues per customer, etc.). The service provider is planning new acquisitions, has plan to expand the geographical scope, and is expanding its partner ecosystem. The service provider is planning to support this growth strategy with adequate staffing.	
Innovation	Customers' perception on service provider innovation culture, openness to new ideas, and appropriateness of retail innovation investments.	8%
Delivery	Service provider has specific plans to expand its available delivery models (cloud, hybrid, PaaS, SaaS).	21%
	Service provider is planning to expand its presence across regions and countries to provide the optimal mix of local and global resources dedicated to co-innovation services.	
Growth	Service provider is planning to expand its business (and specifically co-innovation services) across regions and countries through organic growth, M&A, and partnerships.	13%
	Service provider is planning to expand its business (and specifically co-innovation services) across retail segments and business sizes.	
R&D pace and productivity	The company has a strong innovation culture and is open to new ideas. The company is investing in R&D (% of R&D investment of total revenue), specifically in retail R&D, description of future R&D projects, planned hirings dedicated to R&D, and investments in retail technology start-ups and other start-ups instrumental to develop the portfolio of co-innovation services.	15%
Total		100%

Source: IDC, 2020

Key Capabilities Measures for Success: IDC MarketScape: Worldwide Retail Co-Innovation Services Providers 2020 Vendor Assessment

Criteria	Definition	Weight
Functionality or offering	Based on the primary and secondary markets defined in strategy/functionality or offering strategy/specific offering road map, the co-innovation services provider can deliver said services according to the following key aspects:	38%
	In-time and in-budget execution of co-innovation projects	
	Has proven experience in co-innovation projects	
	Has a consolidated network of partnership	
	Has appropriate certifications for projects execution (e.g., tech IP usage)	
	Has Al/ML analytics capabilities that can be leveraged throughout the co-innovation process	
	Based on the primary and secondary markets defined in strategy/functionality or offering strategy/specific offering road map mentioned above, co-innovation services provider is evaluated according to its offering for the following retail co-innovation specific services:	
	A start-up sourcing program run by the services provider that enables retailers to establish partnerships with or acquire said start-ups.	
	 A formal program for the co-development of intellectual property shared between the retailer and the services provider. Within this program, a CAD service is provided as execution enabler of the IP. 	
	 A network of co-innovation labs that serve as physical hubs in which retailers' LOB and IT people in charge of innovation can work with the IT service provider and its partners. 	
	A hackathon and crowdsourcing program for addressing specific technology challenges faced by retail clients.	
	 Business and IT consulting for enabling co-innovation processes by leveraging technologies such as cloud, artificial intelligence/machine learning (Al/ML) analytics, 5G, blockchain, loT, 3D printing, and robotics. 	
	 Systems integration services leveraged to integrate the outcomes of co-innovation over the different phases of innovation piloting, implementing and scaling. 	
	Retail-specific business analytics services to be leveraged for data-driven decision making during the overall co-innovation process.	
	The co-innovation services provider can cover up to three of the mentioned services through the offering of one or more certified partners.	
	Assets and methods for the implementation of retail co-innovation services include skilled and resourced development/delivery center, delivery tools and methodologies, responsive rightshoring of resources, agile client, and engagement project management.	
	Co-innovation services provider offers co-innovation models and tools that are specific for the retail industry	
	Service provider is evaluated according to its capability to cover selected use cases from IDC Digital Transformation Taxonomy (listed in provided inclusion criteria and IDC DX Taxonomy Report).	

Key Capabilities Measures for Success: IDC MarketScape: Worldwide Retail Co-Innovation Services Providers 2020 Vendor Assessment

Criteria	Definition	Weigh
Customer satisfaction	Customers evaluate their satisfaction on a scale from 1 to 5, assessing topics such as value for money, resources and systems reliability, project management, and strategic partnerships and alliances.	15%
	Customers evaluate, on a scale from 1 to 5, their perception regarding the appropriateness of time intercurred between the first engagement with service provider and the lead time for the generation of value	
	Customers evaluate, on a scale from 1 to 5, the results obtained for KPIs such as:	
	Overall ROI	
	Customer advocacy: Net Promoter Score (NPS), Customer Effort Score (CES)	
	Innovation rate: R&D investments, efficiencies in cycles, innovation returns, new intellectual property development	
	Data capitalization: Organization's return on data-related investments	
	Digital operations: Business' ability to transform and automate business processes	
	Customers evaluate, on a scale from 1 to 5, if service provider is delivering expected SLAs (according to the different project phases and the type of provided services)	
	Customers evaluate, on a scale from 1 to 5, if service provider is delivering expected innovation outcomes for retail cloud (public, private, hybrid), artificial intelligence/machine learning (Al/ML) analytics, customer experience personalization, digital supply chain, AR/VR, 5G, 6G, blockchain, IoT, 3D printing, and robotics.	
Customer service delivery	Service provider is evaluated according to its capability to support retailers by leveraging retail business consulting experts (strategy, operational improvement, finance and accounting, governance, risk, and compliance)	13%
	Co-innovation services provider is evaluated according to the worldwide coverage of customer service, along with local presence to ensure knowledge of reference market	
	Customers evaluate, on a scale from 1 to 5, if co-innovation services provider is providing resources with specific retail background and skills, capable of addressing the required range of retail technical expertise and of leveraging new technology opportunities	
Portfolio benefits	Co-innovation services provider is evaluated according to its partner ecosystem regarding reference tier, management, and number of completed and underway projects (this is a non-exhaustive list).	15%
	Co-innovation services provider is evaluated according to number, value, strategy and capability complementarity, and level of integration.	
Pricing model or structure of product/offering	Co-innovation services provider is evaluated according to pricing model transparency, alignment with customers' budgeting process and justification criteria, and flexibility to accommodate project changes and new business circumstances.	8%

Key Capabilities Measures for Success: IDC MarketScape: Worldwide Retail Co-Innovation Services Providers 2020 Vendor Assessment

Criteria	Definition	Weight
	Co-innovation services provider is evaluated according to availability to apply revenue/profit sharing, type of companies with which the model is applied, and average amount of projects for which the model is applied.	
Range of services	Co-innovation services provider is evaluated according to its capability to support retailers by offering managed services such as key horizontal business process outsourcing and retail-specific business process outsourcing (legal process outsourcing, business analytics services specific to retail). Furthermore, the co-innovation services provider will need to demonstrate geographical coverage of the mentioned managed services.	11%
	Customers evaluate, on a scale from 1 to 5, the coverage of co-innovation services provided by the service provider in relation to their needs.	
Total		100%

Source: IDC, 2020

LEARN MORE

Related Research

- IDC MarketScape: Worldwide Retail Commerce Platform Services Providers 2020 Vendor Assessment (IDC #US46162920, December 2020)
- IDC MarketScape: Worldwide Retail Commerce Platform Providers 2020 Vendor Assessment (IDC #US46038320, November 2020)
- Commerce Everywhere Business Models and the Path Toward Retail Innovation Excellence (IDC #EUR146908220, October 2020)
- IDC PlanScape: Architecting a Digital-Platform-Enabled Retail Innovation Strategy (IDC #US44089019, May 2019)
- IDC MaturityScape: Retail Business Model Innovation 1.0 (IDC #US44088518, March 2019)

Synopsis

This IDC MarketScape assesses the capabilities and strategies of worldwide service providers (SPs) in supporting and collaborating with the retail industry in defining and executing co-innovation strategies. Therefore, we consider the shared work conducted by SPs and their retail industry clients, with the objective of innovating clients' business models. The report has a worldwide perspective, analyzing SPs' strategies and capabilities in areas such as business consulting and IT consulting, and it focuses on SPs' co-innovation frameworks and a selection of retail-specific co-innovation services such as start-up sourcing, IP co-development, hackathon and crowdsourcing, co-innovation hubs, and retail-specific business analytics.

"The pace of change in retail continues to accelerate, and for retailers, it means that they must innovate faster and more efficiently, focusing on long-term growth while orchestrating and executing their daily operations profitably," said Giulio Raffaele, research manager, IDC Retail Insights. "In this context, retailers have the opportunity to set up and execute strategic co-innovation partnerships with service providers, collaborating on addressing the different phases of innovation discovery, selection, pilot, implementation, and scaling."

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

IDC Italy

Viale Monza, 14 20127 Milan, Italy +39.02.28457.1

Twitter: @IDCitaly

idc-insights-community.com

www.idcitalia.com

Copyright and Trademark Notice

This IDC research document was published as part of an IDC continuous intelligence service, providing written research, analyst interactions, telebriefings, and conferences. Visit www.idc.com to learn more about IDC subscription and consulting services. To view a list of IDC offices worldwide, visit www.idc.com/offices. Please contact the IDC Hotline at 800.343.4952, ext. 7988 (or +1.508.988.7988) or sales@idc.com for information on applying the price of this document toward the purchase of an IDC service or for information on additional copies or web rights. IDC and IDC MarketScape are trademarks of International Data Group, Inc.

Copyright 2020 IDC. Reproduction is forbidden unless authorized. All rights reserved.

