Market Guide for Artificial Intelligence Service Providers

Published 26 July 2021 - ID G00732756 - 14 min read

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Initiatives: Data and Analytics Strategies; Finance Technology Optimization

> Service providers like system integrators and consulting
> companies play a critical role in the adoption and acceleration of AI
> initiatives across organizations at all levels of AI maturity. This
> research describes the AI service provider market and sourcing
> choices for data and analytics leaders.

Overview

Key Findings

- Organizations struggle to leverage artificial intelligence (AI) for various reasons. Some can't articulate discrete and applicable AI use cases (with a clear line of sight to their issue). Others lack internal AI expertise and the right organizational setup. And others can't confidently build a business case — or even a crude model — with specific ROI timelines for AI.

- To address AI struggles and unknowns, organizations consistently explore different options for external AI experts and third parties. However, the market for AI-related services is large, fragmented, and devoid of normalized offerings, contracting, pricing and approaches, making the evaluation and selection process difficult to navigate.

- The scope of services offered by AI service providers ranges from strategy, to design, to deployment, to ongoing management. Target focus areas span from packaged to custom-built options for the core functionality, as well as across dozens of options for important data services such as curating, cleansing, assembling, modeling, auditing, buying and managing.

Recommendations

As a data and analytics leader responsible for AI strategies, you should:

- Perform a thorough assessment of the identified use cases and your internal (self-service) AI capabilities to determine what third-party support is required.

- Prepare for the AI journey to extend beyond a single platform, technology or vendor. Develop a strategy and framework for evaluating and selecting service providers. Apply this framework to both large and small scopes of work on an iterative basis as the AI journey unfolds and takes shape.

- Derisk your AI initiative by leveraging this Market Guide and Gartner's portfolio of research to understand the structure, dynamics and ecosystem of service provider options.

Strategic Planning Assumption

By 2024, over half of all organizations will have leveraged AI service providers for AI consulting, implementation or managed services.

Market Definition

Gartner defines the market for external AI service providers as a subset of the broader market for data and analytics (D&A) service providers. It covers consulting, implementation and managed services for AI techniques. Services span multiple phases of AI execution and may also include AI governance, security, audit and monitoring.

> **Artificial intelligence applies advanced analysis and logic-based techniques, including machine learning (ML), to interpret events, support and automate decisions, and take actions.**

AI techniques go by a wide variety of names, including:

- Expert systems

- Data mining

- Predictive analytics and ML

- Neural networks

- Genetic algorithms

■   Deep learning

For more detail, please see What Is Artificial Intelligence? Seeing Through the Hype and Focusing on Business Value.

Market Description

The 2021 Gartner CIO Survey [1] identified that, although 94% of respondents indicate that they either have AI on their radar or have initiated projects, only 24% have projects currently deployed.

The market for AI services is very broad. It includes:

■   Boutique providers that focus on an industry or AI technique

■   Pure players that focus on a full life cycle for AI initiatives

■   Global IT service providers that offer D&A, Internet of Things (IoT), hyperautomation, application and infrastructure, and other services

Gartner also sees a strong demand for better operationalization of AI initiatives, explainable AI, model monitoring, and AI audit and risk management. Many service providers cater to these and other governance- and responsible-AI-related aspects.

Market Direction

The market for AI service providers will see continued expansion, with enterprises having a growing need to leverage a variety of AI techniques for their business use cases. AI solution providers will also cater to organizations spread across the spectrum of data and analytics maturity. This spectrum spans from organizations just getting started and exploring the art of the possible with AI, to the more mature organizations that are looking to co-innovate with a service provider.

Most IT service providers already offer services for AI. In addition, there are niche vendors that offer specialized services for a specific AI technique or industry. Service providers that historically focused on automation are also looking to pivot to AI and offer a natural progression to their customer base in implementing intelligent automation and AI use cases.

Key drivers for the strong growth of the AI service provider market include:

- **Increased digitalization due to the impact of COVID-19:** The imperative for organizations to transform into digital businesses is forcing them to move to more-complex use cases that require predictive and prescriptive analytics. This trend has been fueled further by COVID-19, wherein organizations are looking to AI to accelerate digital transformation. Chatbots, for example, have helped answer the flood of pandemic-related questions, computer vision has helped maintain social distancing, and ML models have proved indispensable for modeling the effects of reopening economies.

- **Greater leverage from semistructured and unstructured data:** Semistructured and unstructured data, such as textual data, images, videos and speech files, form a large part of the data within the enterprise. Organizations are trying to draw insights from such data to gain a higher degree of contextual awareness.

- **Increased specialization:** Emerging techniques, such as reinforcement learning and adaptive learning, involve greater implementation risks that typical end-user organizations are most likely not willing to bear. Service providers are stepping up to this challenge with related services and solutions.

The market is also seeing strong ecosystems emerge from partnerships with technology providers, academia, third-party data providers and other niche providers to cater to a wide variety of customer requirements (see Table 1).

Table 1: AI Services Offered for Organizations With Varying AI, Data and Analytics Maturity

(Enlarged table in Appendix)

AI and D&A Maturity of the Organization	Getting Started	Midmaturity	Highly Mature
Consulting Services	▪ Analyze processes and define the AI strategy ▪ Assess the impact of AI on the business and AI's value proposition ▪ Advise on the art of the possible with AI, selecting and prioritizing use cases, data literacy, change management, and driving AI adoption ▪ Set up an AI governance and trust framework	▪ Measure, iterate and optimize — set up and manage an innovation lab to take ideas into the minimum viable product (MVP) stage using methods like design thinking and applied innovation ▪ Cater to more complex AI use cases that span across multiple departments or have specialized domain/industry requirements	▪ Explore opportunities for business model transformation and data monetization ▪ Co-innovate/work with startups/academia/other partners (business or even customers) as a separate center of innovation ▪ Develop a framework for a responsible AI approach ▪ Establish a digital ethics framework
Implementation Services	▪ Implement point AI solutions and industry-specific packaged solutions ▪ Develop intelligent automation ▪ Endpoint integration into workflows and enterprise applications ▪ Offer data scientist as a service	▪ Operationalize, scale and democratize AI across enterprise ▪ Streamline different initiatives (reuse, collaboration, tool sprawl reduction, governance) ▪ Leverage composite AI ▪ Move to decision intelligence	▪ Experiment with emerging AI techniques, including composite AI, federated learning and reinforcement learning ▪ Move to decision intelligence
Managed Services	▪ Assess vendor AI platforms and solutions	▪ Offer model management as a service ▪ Foster collaboration across teams and departments, and promote reuse of AI artifacts	▪ Offer model management as a service ▪ Foster collaboration across teams and departments, and promote reuse of AI artifacts
Data for AI	▪ Focus on data quality/source identification/governance ▪ Deal with semistructured and unstructured data ▪ Offer data labeling and annotation services	▪ Offer curated datasets for additional value ▪ Focus on DataOps ▪ Offer services for data sharing	▪ Explore approaches such as federated learning ▪ Leverage synthetic data and small and wide data
Others — AI Risk Management, AI Security and Responsible AI	▪ Offer AI security and risk management services	▪ Offer AI security and risk management services	▪ Offer AI security and risk management services ▪ Offer audit and model validation services

Source: Gartner (July 2021)

Composite AI forms an important part of the services being offered by AI service providers. These services help enterprises go beyond traditional ML and explore other AI techniques, including natural language, computer vision, reinforcement learning, graphs, heuristics and agent-based approaches.

Market Analysis

In the 2021 Gartner CIO Survey, [1] 25% of respondents mentioned AI as the game-changing technology for their enterprise in 2021. AI is a strong enabler that will help enterprises recover and grow their businesses. Given the strong customer interest in AI and the large number of systems, products and techniques that wear the AI label, it is no surprise that service providers are making AI a big part of their service offerings.

There are three main types of service providers that buyers can go to for their AI needs:

- **Solution-focused AI service providers** concentrate on a use case or application area and deliver services to customize, maintain and enhance their solutions. The degree to which a service provider has a ready-made product for its application area varies greatly. Some specific solutions, such as document processing on standard document types (invoices, contracts, etc.), require less configuration and support. By contrast, solutions for predictive maintenance, for example, require more configuration and support due to the variability in the data and assets that are being targeted. The degree to which AI techniques are used in these solutions also varies greatly, from rule-based approaches to machine learning. Increasingly, a composite set of techniques is used. Some example solution areas are given in Figure 1.

- **Custom-build AI service providers** use the expertise of highly skilled data scientists and ML engineers to build custom AI models based on an organization's data. This process often involves teams of individuals who provide additional skills in data engineering, AI engineering, architecture and XOps. These service providers can specialize in an AI technique, such as optimization or graph algorithms, or have multidisciplinary AI teams with experts in multiple techniques. Larger service providers and management consultancies have dedicated teams that work with organizations on their AI strategy, including use-case identification and prioritization, organizational readiness, business value definition, and innovation. They can also offer services that address governance aspects, such as model auditing, security and responsible AI.

- **Expert-domain AI service providers** are those that offer services and specialize in an industry segment or a business domain. These can be stand-alone service providers or business units within larger service providers. AI solutions often come out of business challenges that are specific to industry verticals. Examples include the use of autonomous robots for warehouse distribution in manufacturing, fraud detection in financial services, and customer intelligence and price optimization for retail and consumer goods companies. The triad of business knowledge, business process analysis and business process optimization that these providers offer is often missing from providers that are more focused on data science only.

The boundary between these categories is fuzzy, because vendors that have built a product will often partner with other service providers for implementation and customization. Large service providers often try to combine their management consulting domain expertise with technical data science expertise to offer industry-specific solutions, frameworks or accelerators — with varying degrees of success.

The business value that AI can bring is no longer something that can be questioned. However, to gain this value, organizations must overcome two substantial barriers that will influence the AI service provider market:

1. The business process expertise and, in particular, change management needed to deploy AI solutions for operational usage

2. The technical expertise needed to actually package, deploy and integrate a model within existing systems

The hyperspecialization of AI services by use case will continue to bring this knowledge together.

Data and analytics leaders looking to tender AI services should carefully examine what expertise their service provider brings and whether the delivery partner leading the project understands their organization's requirements.

Figure 1: AI Service Provider Landscape

AI Service Provider Landscape

Source: Gartner
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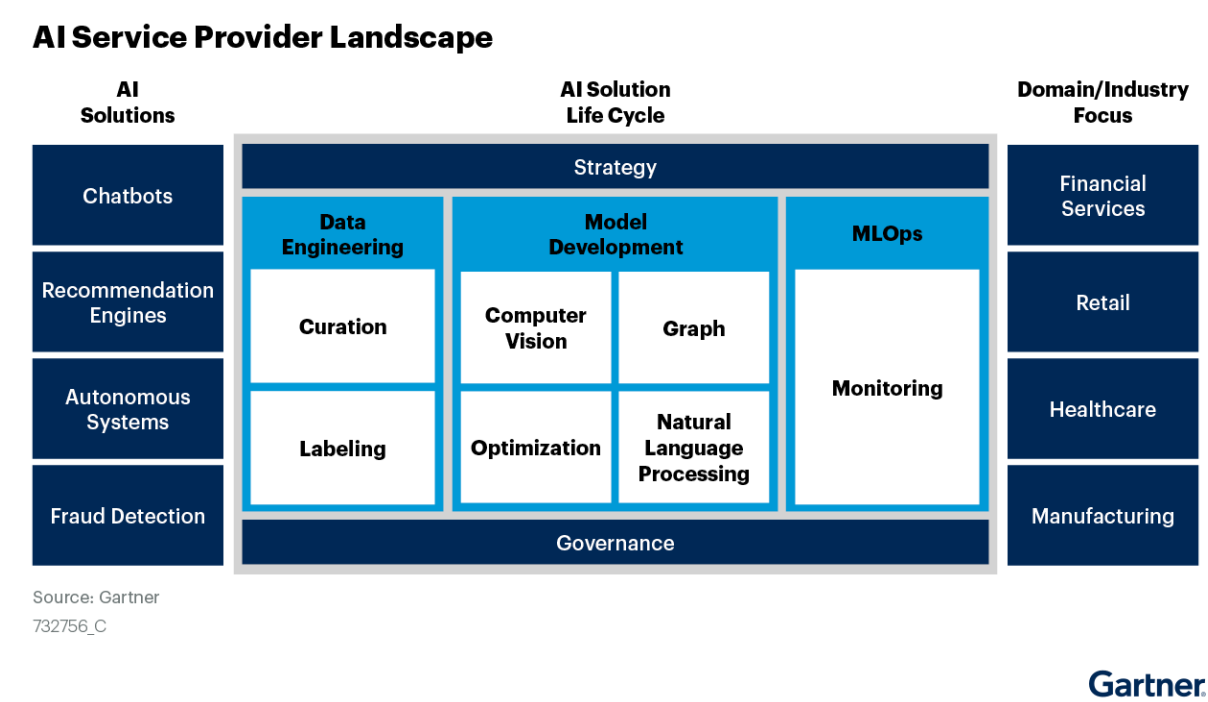
Representative Vendors

The vendors listed in this Market Guide do not imply an exhaustive list. This section is intended to provide more understanding of the market and its offerings.

Market Introduction

Table 2 lists general and specialized service providers that offer a spectrum of services for AI (see Notes 1 and 2). This list is based on client interactions and publicly available information. It excludes global service providers that offer AI, data and analytics services and solutions at scale. Those are featured in the Magic Quadrant for Data and Analytics Service Providers.

Clients should note that there are hundreds of service partners worldwide that offer AI services. Each provider has its own strengths and weaknesses, and each is more suitable to particular types of engagements and clients/industries than others. Many capable providers have not been included in this study due to our methodology. However, these providers may be a better fit for specific AI projects, depending on resourcing objectives, project size, geography and other factors. Tool: Vendor Identification for AI and Data and Analytics Service Providers provides a long list of service providers that operate in AI, data and analytics initiatives.

Table 2: Representative Service Providers for Artificial Intelligence Services

(Enlarged table in Appendix)

Service Provider ↓	Major Analytics Services ↓	Region of the Headquarters ↓
Affine	Machine learning, deep learning, NLT (including chatbots), optimization	Asia/Pacific
Black Swan Data	Machine learning, deep learning, NLT, optimization	Western Europe
BRIDGEi2i	Machine learning, deep learning, NLT, optimization	Asia/Pacific
Civis Analytics	Machine learning, deep learning, NLT, optimization	North America
Course5 Intelligence	Machine Learning, Deep Learning, Computer Vision, NLT	North America
Datamatics	Machine Learning, Deep Learning, Computer Vision, NLT	Asia/Pacific
Empolis	Machine learning, deep learning, NLT (including chatbots), text mining	Western Europe
Fractal	Machine learning, deep learning, NLT (including chatbots), optimization	North America
GE Digital	Machine learning, deep learning, NLT, optimization, digital signal processing, time series analysis	North America
Genpact	Machine learning, deep learning, NLT (including chatbots), optimization	North America
Gramener	Machine learning, deep learning, NLT (including NLG and chatbots), optimization	North America
GraphAware	Graph technologies and graph data science	Western Europe
IQVIA	Machine learning, deep learning, NLP	North America
Kalypso	Advanced analytics and modeling, machine learning, deep learning, NLP, computer vision, simulation and optimization	North America
Kavi Global	Machine learning, deep learning, NLP, optimization	North America
LTI	Machine learning, deep learning, NLP, optimization, chatbots	Asia/Pacific
Mango Solutions	Machine learning, deep learning, NLP, optimization	Western Europe
Mu Sigma	Machine learning, deep learning, time series, NLP, optimization	Asia/Pacific
Oròbix	MLOps as a service	Western Europe
Satalia	Machine learning and optimization	Western Europe
TheMathCompany	Machine learning, deep learning, NLP, optimization	North America
Tiger Analytics	Machine learning, deep learning, NLP, text analytics, optimization, chatbots	North America
Virtusa	Machine learning, deep learning, NLP, optimization, chatbots, computer vision	North America
West Monroe	Machine learning, deep learning, NLP	North America
Wovenware	Computer vision, machine learning, deep learning, chatbots	North America

NLG = natural language generation; NLP = natural language processing; NLT = natural language technology

Source: Gartner (July 2021)

Market Recommendations

Providers for AI services range from large, global providers to regional, offshore-centric, consulting-led and managed service providers. They meet the demands for increased service delivery in various ways, including via targeted acquisitions, new hiring, internal staff transfers, scaling up nearshore and offshore delivery hubs, and nonlinear growth.

The following are recommendations for data and analytics leaders:

- Work closely with business leaders to identify relevant use cases that can bring business value, because most senior executives lack firsthand understanding of, or experience with, AI projects.

- Perform a thorough assessment of the identified use cases and your internal (self-service) AI capabilities to determine what analytics support is required. It is not uncommon for established business intelligence teams to significantly overestimate or underestimate their ability to support AI projects, so take extra care when judging current capabilities.

- Hire and train necessary internal resources to create a core team that can effectively deploy AI initiatives and lead vendor management efforts. A key step is deciding on the nature of the relationship with the service provider. In some cases, the project will be a long-term relationship, so training internal resources is just one of many priorities.

- Determine which service provider's engagement and pricing model is the most suitable for your AI initiative in relation to skills, funding and bandwidth. Do not assume that all service providers will follow the same business model. Understanding the degree of flexibility they will allow is an important part of the evaluation process. Consider leveraging multiple service providers, if needed.

- Seek references from organizations or industries of a similar size to your own. If this is not possible, allow additional time and budget to define the scope and specify the deliverables, or work with your service provider to build a proof of concept.

- Select service providers that can leverage best practices, frameworks and methodologies, and can demonstrate the value of the solution.

- Investigate how cloud-based delivery of AI services and solutions fits within your technology landscape and organizational model.

Evidence

[1] **2021 Gartner CIO Survey.** The survey was conducted to inform CIOs on how to prosper in the post-COVID-19 world. It was conducted online from 14 July 2020 through 14 August 2020 among Gartner Executive Programs members and other CIOs.

Qualified respondents are each the most senior IT leader (CIO) for their overall organization or a part of their organization (for example, a business unit or region). The total sample is 1,877, with representation from all geographies and industry sectors (public and private). The survey was developed collaboratively by a team of Gartner analysts and was reviewed, tested and administered by Gartner's Research Data and Analytics (RDA) team. Results do not represent global findings or the market as a whole, but do reflect the sentiments of the respondents and companies surveyed.

Note 1: Representative Vendor Selection

The service providers mentioned in this guide were selected to represent the breadth of offerings in this market. Gartner's objective is to provide a balance of options relevant to projects of varied size, complexity, type and location, while taking into account the state of the market demand for varying options. This list is based on client interactions and publicly available information.

Note 2: Gartner's Initial Market Coverage

This Market Guide provides Gartner's initial coverage of the market and focuses on the market's definition, rationale and dynamics.

Recommended by the Authors

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

Magic Quadrant for Data and Analytics Service Providers

Critical Capabilities for Data and Analytics Service Providers

Tool: Vendor Identification for AI and Data and Analytics Service Providers

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