HFS Enterprise AI Services Top 10 Report - Excerpt for IBM

Reetika Fleming, Research Vice President

Tapati Bandopadhyay, Research Vice President

Madhuparna Banerjee, Knowledge Analyst

September 2019

"The services market for artificial intelligence technologies is rapidly maturing on the back of several years of learning and a realization—delivering AI is unlike delivering any other technology thus far. Delivering on the promise of AI calls for far more collaboration between service providers, tech vendors, and enterprise clients."

—Reetika Fleming, Research Vice President

"The biggest differentiator in enterprise AI services, as described by most of the customer leaders, is the quality of people—not just the quantity available for a specific skill. Domain understanding and data engineering capabilities are top priorities. A culture of innovation, experimentation, collaboration, and cocreation with customers is the key winning formula here."

—Tapati Bandopadhyay, Research Vice President

HFS Research

What you'll read

Introduction, methodology, and definitions

Introduction

- Artificial intelligence (AI) may be perceived as a buzzword, but it is undoubtedly also cementing itself as a key change agent in the way enterprises do business. Its capacity to derive deep insights from unstructured data, to learn and improve from its activity, and to optimize business operations means that despite still being a nascent technology, its value to organizations is clear. Delivering AI services is a complex and challenging endeavor, as service providers advise clients on a constantly evolving set of technologies, develop talent pools with an increasingly diversifying set of skills, and invest in R&D to create proprietary IP.

- This *HFS Enterprise AI Services Top 10 Report* examines the part service providers are playing in the rapidly growing AI landscape. The report examines 21 service providers across a defined series of innovation, execution, and voice of the customer criteria. The inputs to this process were detailed RFIs we conducted with participating service providers, briefings with leaders of AI practices within service provider organizations, interviews with reference and non-reference AI clients, an HFS survey with 262 Global 2000 enterprises, and publicly available information sources.

- The report highlights the overall ratings for all participants and the top five leaders for each sub-category. The report looks at AI services capabilities as defined by our value chain, across the plan, implement, manage, operate, and optimize phases. This report also includes comprehensive profiles of each service provider, outlining their overall and sub-category rankings, provider facts, and detailed strengths and weaknesses.

HFS Research

Service providers covered in this report

HFS Research

Research methodology

The Enterprise AI Services Top 10 report assessed and scored service provider participants across execution, innovation, and voice of the customer criteria. The inputs to this process were detailed RFIs we conducted with several service providers, client feedback from reference checks and HFS network clients, briefings with leaders of Enterprise AI Services and alliance practices within service providers, HFS surveys with 262 Global 2000 enterprises, and publicly available information sources. Specific assessment criteria and weighting include:

Ability to execute   33.3%

- **Size, experience, and growth** including revenue and headcount, formalization of dedicated AI practice, client base, and growth
- **End-to-end AI servicing capability** including capabilities across the HFS AI services value chain, across consulting, implementation, maintenance, and ongoing operations
- **Client mix** including the extent of AI services client footprint across industry verticals and geographic locations
- **Specialized AI talent** including the current scale of data scientist teams and the focus on non-technical talent relevant to AI
- **Delivery excellence** including account management, ability to drive value, and business impact through an end-to-end process

Ability to innovate   33.3%

- **Integrated vision and value proposition** including vision and credibility of AI strategy, integration with broader intelligent automation strategy, holistic business outcomes focus, and identifiable investments in the AI tech stack
- **Technology innovation** including centralized platform offerings for asset reusability, data and use case curation, and tools, frameworks, and accelerators to improve AI success
- **Creative client engagement** including co-innovation with clients and the use of flexible pricing structures
- **Creative talent management** including strategies to improve AI talent sourcing, training, and retention
- **Investments and ecosystem** including partnerships and acquisitions relevant to delivering AI services
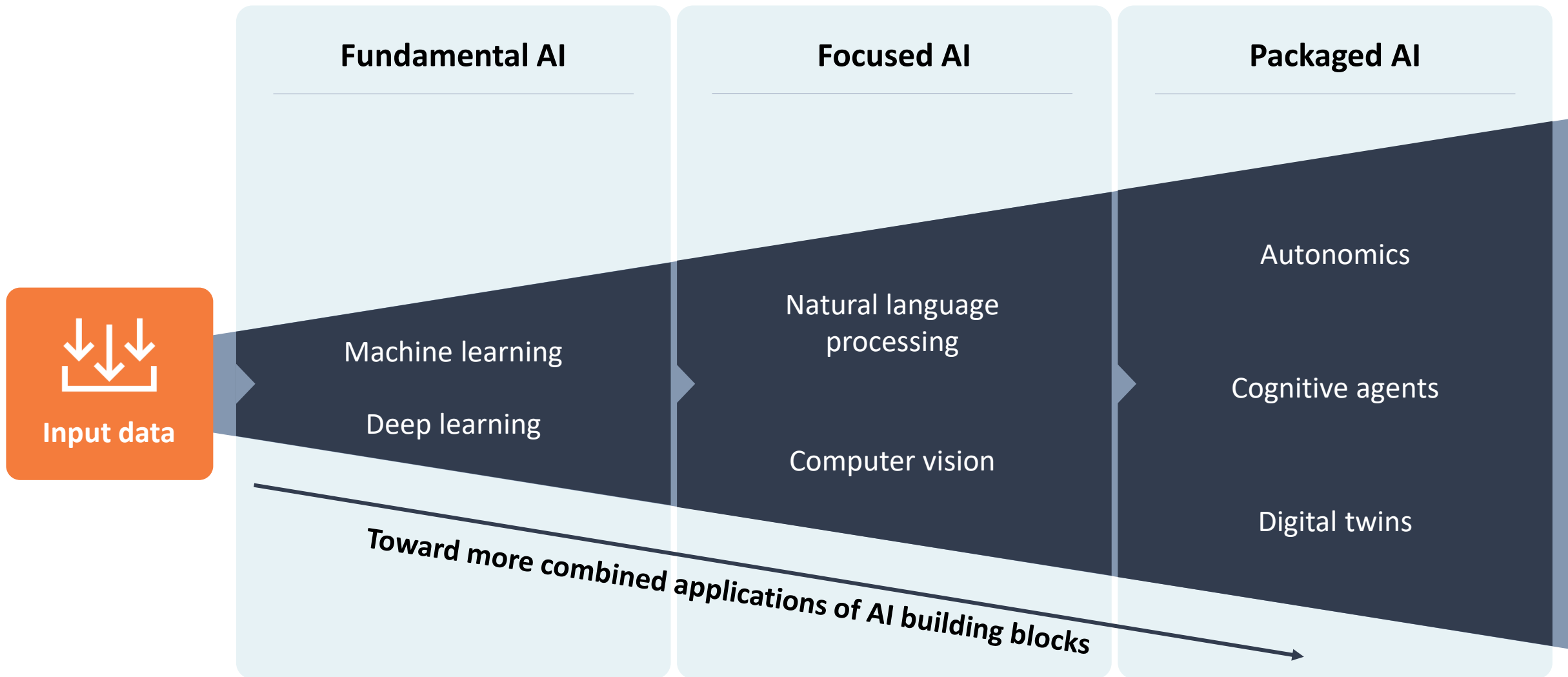
33.3%

Voice of the customer

- **Direct feedback from enterprise clients** via reference checks, HFS surveys, and case studies critiquing provider performance and capabilities

HFS Research

AI definitions

- As the HFS Blueprint Report *Enterprise Artificial Intelligence (AI) Services 2018* outlines, **artificial intelligence (AI)** is many things: It is hyped, it is undefined, it is becoming pervasive, and it is fostering emotional and, at times, heated discussions. However, many of those discussions are more focused on consumer-facing issues such as self-driving cars, drones delivering Amazon purchases, or robotic home helpers. The broader market is not yet recognizing the nearer-term impact of AI on B2B and Enterprise operations. AI aims to automate intelligent activities that humans associate with other human minds through a combination of reasoning, knowledge, planning, learning, natural language processing (communication), and perception (cognitive). There are many subcategories of AI, each suited to execute particular types of tasks, as outlined in the *HFS Dummies' Guide to Enterprise AI*.

- **AI services** is the provision of planning, implementation, management, operations, and optimization services in support of enterprise utilization of AI software, processes, and resources to achieve digital transformation and defined business outcomes.

HFS **Research**

The building blocks of AI *(illustrative)*

Fundamental AI	Focused AI	Packaged AI
		Autonomics
Machine learning	Natural language processing	Cognitive agents
Deep learning	Computer vision	Digital twins

Input data

Toward more combined applications of AI building blocks

HFS Research

The HFS AI services value chain

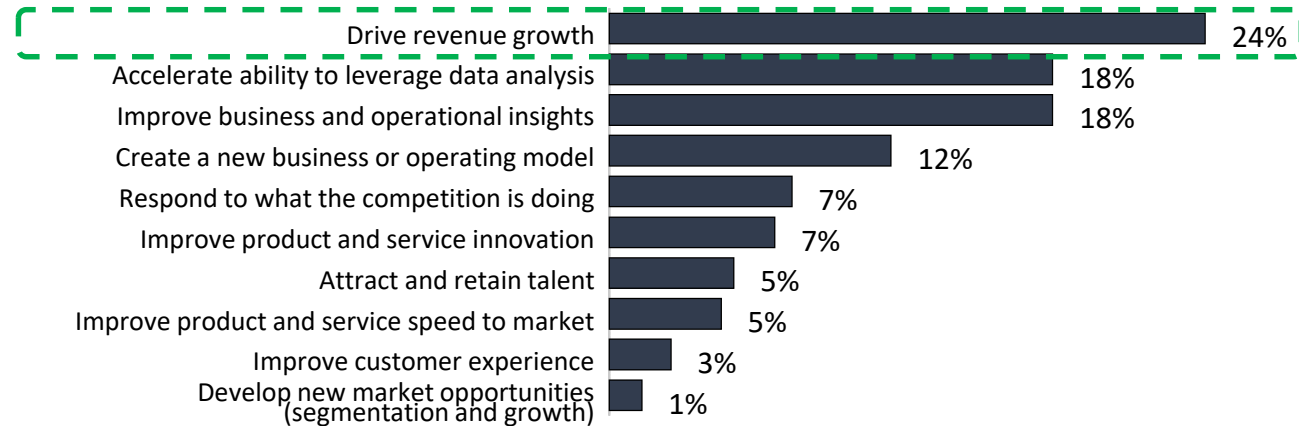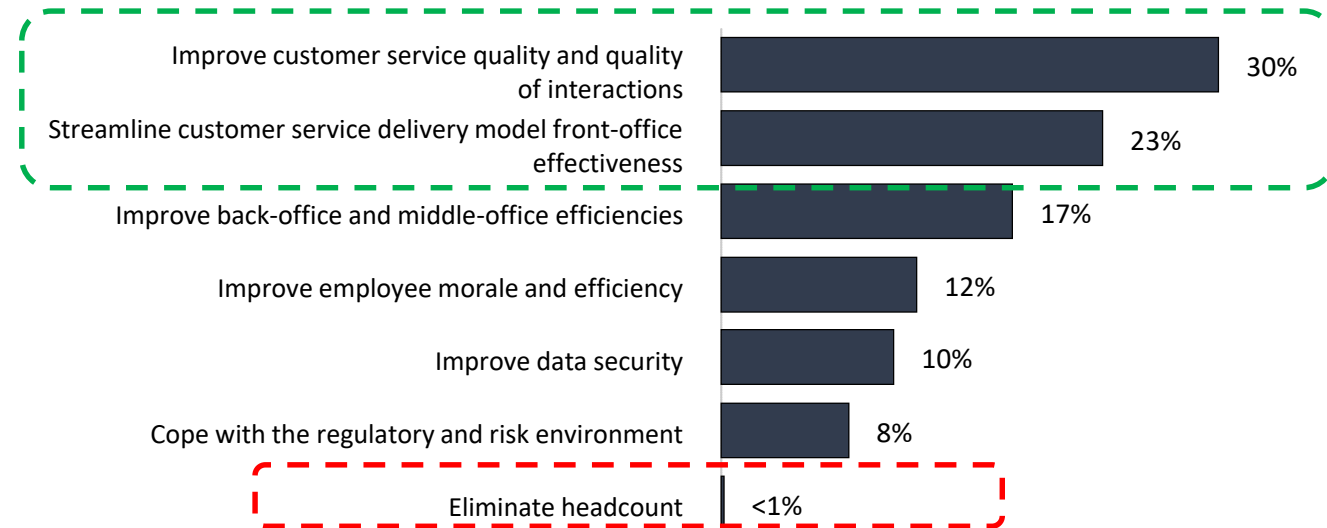| Plan	Implement	Manage	Operate	Optimize
• Advisory on autonomics, cognitive computing, and AI • Workshops on IA vendor landscape and implications • Automation opportunity assessment • Business case development for automation deployment • Operating model evaluation • Automation roadmap • Compliance and risk assessment • Security implications • HR and talent management strategy • Governance policy • Rollout strategy	• Program management for process automation • Process automation and customization • Solution and technical design • Process recording, mapping, and updating • Data extraction from heterogeneous systems • Leverage repository of pre-built components and utilities • Predictive analytics • Specialist development modules • Enterprise systems integration	• Governance management • Maintenance of automated processes • Optimization of BPO contracts and SSC delivery • Upgrade support • IA help desk • Ongoing integration • Support and maintenance • Testing and QA • New release and upgrade coordination • Training and certification • Acceptance testing • Change management	• Infrastructure management • Application management • IT help desk management • BPO • (Ro)bot-as-a-Service • Real-time analytics • Identify any required changes in service delivery or process to account for changing business requirements (e.g., M&A, divestment, new investments in IT) • Mandatory regulatory adjustment ramification management and resolution	• New feature value identification and benefit analysis • Ongoing adds and upgrades, migrations, and consolidation • Integration of big data analytics, and insights • Best practice understanding, documentation, and end-user adoption, content creation, and curation • User community participation

HFS Research

Executive summary

Enterprises view AI as a strategic enabler of revenue growth

- **Top-line growth is a big motivator for AI.** AI's potential to impact revenue growth is immense. It can improve customer experiences and customer lifecycle management programs, augment sales and marketing efforts, and provide the opportunity to use data strategically to create entirely new revenue streams or business models. Customer and revenue linked-AI programs feature in both strategic and operational goals for many enterprises today.

- **AI is helping enterprises get more operationally efficient.** AI is also increasingly finding takers among enterprises that are on a long-term journey toward becoming more operationally efficient through better data sharing, data-enabled process improvement, and the creation of near-autonomous process flows in select functions such as supply chain management, finance and accounting, and IT and infrastructure management.

- **The stated goals are all about *augmentation*.** While both top-line and bottom-line focused initiatives are underway, less than 1% of enterprises are considering eliminating headcount as their primary objectives of using AI technology. The adoption of AI, for most organizations, is about doing more with less—augmenting and enhancing the productivity of their current workforce to help them make better decisions and reduce mundane, "robotic" tasks from their workstreams.

What are the key strategic objectives/goals for your company's Intelligent Automation (IA) strategy?

Objective	%
Drive revenue growth	24%
Accelerate ability to leverage data analysis	18%
Improve business and operational insights	18%
Create a new business or operating model	12%
Respond to what the competition is doing	7%
Improve product and service innovation	7%
Attract and retain talent	5%
Improve product and service speed to market	5%
Improve customer experience	3%
Develop new market opportunities (segmentation and growth)	1%

What are the key operational objectives for your company's Intelligent Automation (IA) strategy?

Objective	%
Improve customer service quality and quality of interactions	30%
Streamline customer service delivery model front-office effectiveness	23%
Improve back-office and middle-office efficiencies	17%
Improve employee morale and efficiency	12%
Improve data security	10%
Cope with the regulatory and risk environment	8%
Eliminate headcount	<1%

12

© 2019, HFS Research Ltd - Excerpt for IBM

AI service providers need high caliber talent, creative use cases and solutions, and a consultative approach

TOP 10 HFS

- **Talent wins out as the number one priority for delivering AI.** When it comes to consumption of AI services from service providers, most clients have highlighted that their key priority is timely availability and quality of relevant talent. While technology innovation and proprietary IP and accelerators are increasingly part of the competitive advantage, the AI services marketplace is decidedly dependent on the quality of talent availability.

- **"Domain" means different things to different people.** A majority of service providers have been aware of this client priority and have, therefore, invested significantly in training and certification programs for a large pool of resources on relevant skills related to AI services. However, "domain knowledge" is being construed and built out in different ways. While some service providers are doubling down on hiring data scientists, others are expanding the type of non-technical talent, including behavioral scientists and ethnographers, industry vertical subject matter experts, and talent geared toward human-centered design and change management.

- **Industry-wide need for more creative applications of AI.** Common use case capabilities are emerging in areas around invoice processing, predictive maintenance, and insurance claims processing using computer vision. Only a few service providers demonstrated strongly differentiated and highly innovative use cases.

- **Starting with the "why" is creating value.** Providers with a robust integrated consultative approach seem to gain customer confidence faster because this gives the clients a comfort level regarding the domain expertise, which is critical for the success of AI. At this early stage in the evolution of AI technologies for enterprise use, clients seek guidance on the best use of AI. Service providers that can present a more integrated and holistic approach to solving clients' business problems are winning, above those focused on delivering isolated projects.

HFS Research

We are on the cusp of emerging from the piloting dead-zone

- **The age of pure experimentation is nearly at an end.** The last few years have seen rampant piloting and prototyping of AI technologies and use cases. For many enterprises, these exploratory initiatives went nowhere, and the majority of pilots never made it to production environments. This is due to challenges ranging from the lack of suitability of AI to the business problems at hand, low ROI, lack of talent that understands how to gear up from small pilots, and scalability issues around data availability and integration. The resulting AI fatigue from projects dying on the vine has plagued both service providers and their clients trying to realize the business potential of this promising set of technologies. Our new data suggests that as an industry, we are starting to see more engagements make it to production builds in 2019 on the back of several years of learning on where and how to best apply AI.

- **Enterprises still need a significant amount of advisory services.** While there is a lot of implementation action underway from prototyping through to system integration, advisory services are still highly sought by enterprises. As the market continues to mature, AI, data, and automation technologies are constantly evolving, necessitating enterprises to seek out advisory partners to guide them through a changing market.

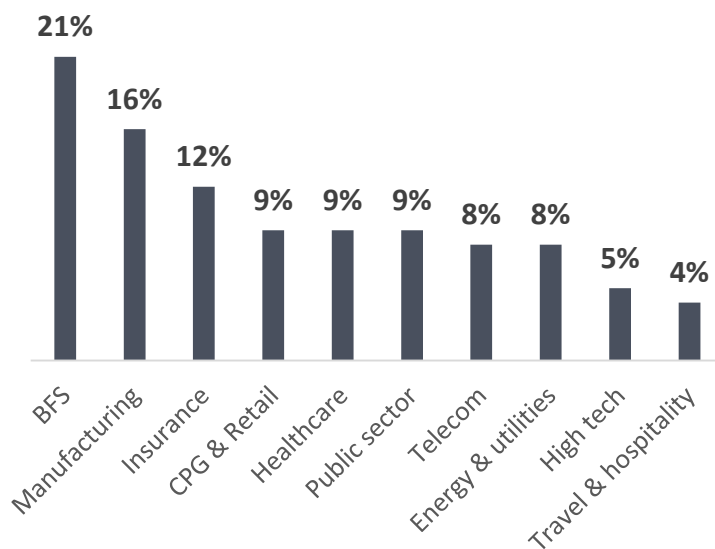## Average: Number of AI services engagements across key stages
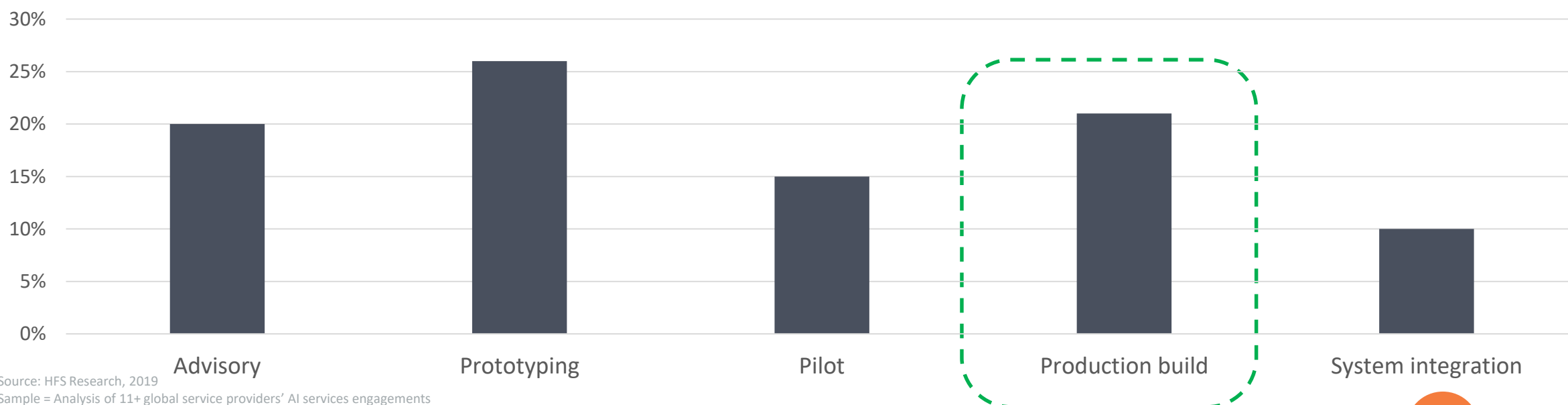
Source: HFS Research, 2019
Sample = Analysis of 11+ global service providers' AI services engagements

HFS Research

Some things have stayed the same: BFSI patronage, input-based pricing, and focus on implementation

BFSI continues to be the top client base for services. AI-powered applications are finding their way into many industry verticals today, but not all industries are engaging with external service providers. BFSI collectively represents a third of the market for AI service providers, and growing engagement from manufacturing, CPG and retail, and healthcare clients.

Average: AI service provider revenues by industry

- BFS: 21%
- Manufacturing: 16%
- Insurance: 12%
- CPG & Retail: 9%
- Healthcare: 9%
- Public sector: 9%
- Telecom: 8%
- Energy & utilities: 8%
- High tech: 5%
- Travel & hospitality: 4%

Source: HFS Research, 2019
Sample = Analysis of 11+ global service providers' AI services engagements

No rocking the boat on pricing models. Projects continue to be contracted using fixed prices, while ongoing services are still based on input metrics such as FTE pricing. Very few service providers have gone down the path of structuring solutions to be subscription based or offering gain share / penalty share to take on risks from implementing AI-based solutions.

Further, 69% of engagements are project based vs. 31% annuity contracts, showing the tactical, project-by-project expansion that most service providers are making with AI clients.

Average: AI service provider pricing models

- FTE: 37%
- Fixed Price: 40%
- Transaction: 9%
- Gain Share: 6%
- Subscription based: 1%
- Hybrid: 1%
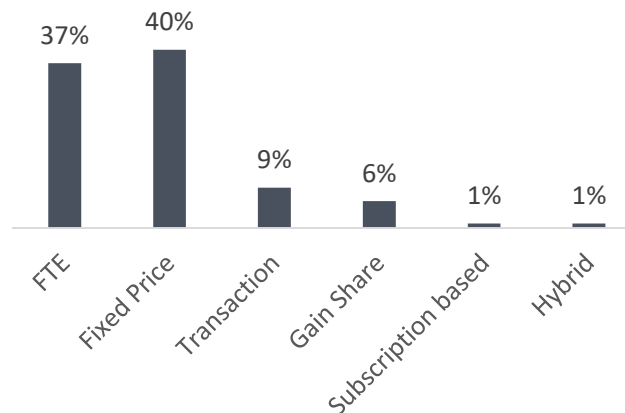
Execution is the primary reason for working with external partners today. While AI advisory services are growing for many global SIs, the majority of revenues for the market is squarely on the execution side, from implementation through to the management and operation of AI-enabled processes. Very few clients are at the stage of requiring ongoing optimization of mature AI-based operations.

Average: AI service provider revenues by value chain

- Plan: 20%
- Implement: 40%
- Manage: 17%
- Operate: 14%
- Optimize: 9%

The HFS Top 10 Enterprise AI service providers results

HFS Enterprise AI services Top 10 2019

TOP 10

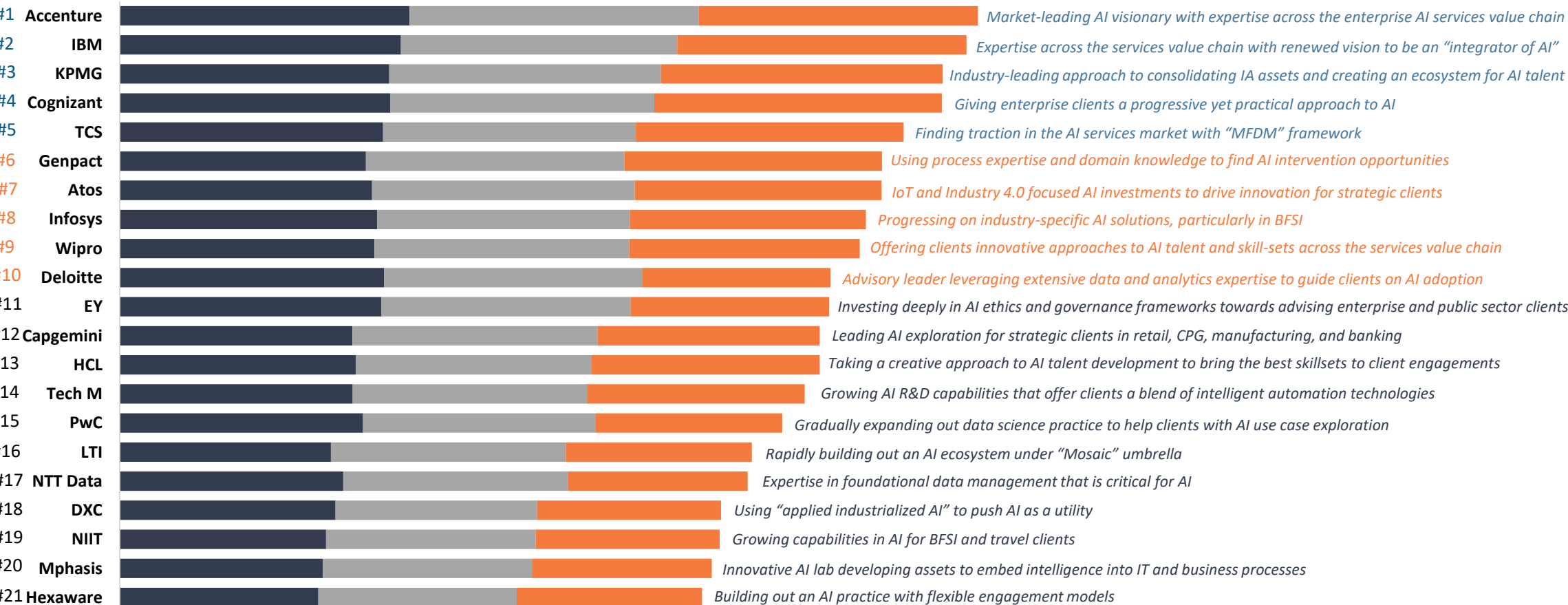| Rank	Company	Description
#1	Accenture	*Market-leading AI visionary with expertise across the enterprise AI services value chain*
#2	IBM	*Expertise across the services value chain with renewed vision to be an "integrator of AI"*
#3	KPMG	*Industry-leading approach to consolidating IA assets and creating an ecosystem for AI talent*
#4	Cognizant	*Giving enterprise clients a progressive yet practical approach to AI*
#5	TCS	*Finding traction in the AI services market with "MFDM" framework*
#6	Genpact	*Using process expertise and domain knowledge to find AI intervention opportunities*
#7	Atos	*IoT and Industry 4.0 focused AI investments to drive innovation for strategic clients*
#8	Infosys	*Progressing on industry-specific AI solutions, particularly in BFSI*
#9	Wipro	*Offering clients innovative approaches to AI talent and skill-sets across the services value chain*
#10	Deloitte	*Advisory leader leveraging extensive data and analytics expertise to guide clients on AI adoption*
#11	EY	*Investing deeply in AI ethics and governance frameworks towards advising enterprise and public sector clients*
#12	Capgemini	*Leading AI exploration for strategic clients in retail, CPG, manufacturing, and banking*
#13	HCL	*Taking a creative approach to AI talent development to bring the best skillsets to client engagements*
#14	Tech M	*Growing AI R&D capabilities that offer clients a blend of intelligent automation technologies*
#15	PwC	*Gradually expanding out data science practice to help clients with AI use case exploration*
#16	LTI	*Rapidly building out an AI ecosystem under "Mosaic" umbrella*
#17	NTT Data	*Expertise in foundational data management that is critical for AI*
#18	DXC	*Using "applied industrialized AI" to push AI as a utility*
#19	NIIT	*Growing capabilities in AI for BFSI and travel clients*
#20	Mphasis	*Innovative AI lab developing assets to embed intelligence into IT and business processes*
#21	Hexaware	*Building out an AI practice with flexible engagement models*

HFS Winners Podium

High Performers

High Potentials

■ Execution   ■ Innovation   ■ Voice of the Customer

HFS Research

HFS top five enterprise AI service providers by individual assessment criteria

HFS Ranking	Overall	Ability to execute					Ability to innovate					Voice of the customer
		Size, experience, and growth	End-to-end AI servicing capability	Client mix	Specialized AI talent	Delivery excellence	Integrated vision and value proposition	Technology innovation	Creative client engagement	Creative talent management	Investments and ecosystem	
#1	accenture	accenture	accenture	accenture	accenture	IBM	accenture	KPMG	IBM	accenture	accenture	IBM
#2	IBM	IBM	IBM	IBM	Cognizant	accenture	KPMG	accenture	accenture	EY	Cognizant	Cognizant
#3	KPMG	TATA CONSULTANCY SERVICES	KPMG	EY	IBM	TATA CONSULTANCY SERVICES	IBM	IBM	KPMG	IBM	Atos	KPMG
#4	Cognizant	Cognizant	Deloitte.	wipro	KPMG	EY	Atos	Cognizant	genpact	wipro	genpact	accenture
#5	TATA CONSULTANCY SERVICES	Atos	Cognizant	Deloitte.	Atos	genpact	Cognizant	Atos	Atos	KPMG	IBM	TATA CONSULTANCY SERVICES

Source: HFS Research 2019

HFS Research

Service provider profile

IBM

Expertise across the services value chain with renewed vision to be an "integrator of AI"

Dimension	Rank
HFS Top 10 position	**#2**
Ability to execute	
Scale, experience, and growth	#2
End-to-end AI servicing capability	#2
Client mix	#2
Specialized AI expertise	#3
Delivery excellence	#1
Innovation capability	
Integrated vision and value proposition	#3
Technology Innovation	#3
Creative client engagement	#1
Creative talent engagement	#3
Investments and ecosystem	#5
Voice of the customer	**#1**

Strengths

- IBM offers a wide array of holistic AI services across consulting, design, and development of simple to highly complex implementations.
- We see great progress from IBM in getting more practical about AI with respect to clients' tech environments and choices. The AI leadership team's vision goes far beyond Watson, looking at multi-cloud, multi-AI scenarios. IBM's new vision of becoming an "integrator of AI" is promising given its influence and renewed thinking.
- Clients appreciate IBM's ability to understand unique industry requirements of AI services and offer the best approach to solutions. Clients also expressed satisfaction on IBM's speed and agility of execution once a project is underway.
- In scenarios where clients are keen on developing internal talent for sustainment and lower-level development, they can partner effectively with IBM for organizational education.

Development opportunities

- Clients expect more flexibility and agility while launching AI services projects, not just during the execution phase.
- Organizational complexity and bureaucracy typical of large organizations are deterrents to the nimbleness that the market expects.
- Finding lighter and simpler ways to achieve reasonable accuracy and value remains an industry-level challenge for AI services; IBM is no exception despite being a tech first-mover.

Acquisitions and partnerships	Client portfolio	Practice details	Proprietary platforms and technology assets
Top AI services acquisitions - Armanta (2018) - Oniqua (2018) - Red Hat (2018) **Top AI services partnerships** - IBM Data and AI - Salesforce - LivePerson	**Top five industry verticals served:** Government, banking and financial, automotive and aero, defense, insurance, consumer **Key clients:** - Credit Mutuel - Lloyds Bank - Bradesco - ADP - Kraft Heinz - Generali	**Total AI services headcount:** 20,000+ **Total R&D centers and innovation labs dedicated to AI services:** IBM has a significant global footprint in AI Services with 80+ client innovation and delivery center locations worldwide. **Geographic footprint of delivery locations:** - North America: 21% - Europe: 27% - Japan: 5% - Asia Pacific: 18% - Greater China Group: 10% - Latin America: 11% - Middle East and Africa: 8%	- IBM Services AI Reference Architecture - IBM Services AI Development Toolkit - Industry Cartridges - Rapid Asset Development for ML (RAD-ML) - Digital Insights Method

About the authors

HFS Research author

Reetika Fleming| Research Vice President

Reetika Fleming leads coverage for smart analytics, insurance, and finance & accounting at HFS Research. She studies the broad use of data and analytics within enterprises, with a research focus on emerging strategies to institutionalize machine learning and other AI techniques. Her research extends into the impact of digital business models, IoT, Smart Analytics, and AI on business process services for insurance specifically, and finance and accounting broadly.

Prior to HFS, Reetika worked in the sourcing research wing of business research and consulting firm ValueNotes. Her responsibilities as Project Manager included research product design and development, managing custom research engagements, developing thought leadership through targeted content and community interaction. She also managed the unit's web and social media strategy and presence. Reetika has led numerous research projects spanning global technology and business operations, and has led plenary sessions at HFS FORA, SSON, and various other industry events.

reetika.fleming@hfsresearch.com
@ReetikaFleming

HFS Research author

TOP 10

Tapati Bandopadhyay| Research Vice President and Head of India Research Ops

Tapati Bandopadhyay is Vice President, Research at HFS, with over 20 years' experience in technology strategy, consulting, and advisory on Artificial Intelligence, Analytics, Automation, DevOps, and services management. She is based out of the HFS India office in Bangalore.

Prior to HFS, Tapati set up the AI and automation practice at Wipro and contributed to the growth and success of the firm's Holmes initiative. She began her analyst career with Gartner for seven years, handling ITScore, ITSM, and AI and automation, across all regions. She received Gartner business awards and became recognized among the top-rated analysts globally.

Tapati.bandopadhyay@hfsresearch.com

HFS Research

HFS Research author

Madhuparna Banerjee| Knowledge Analyst

Madhuparna Banerjee has over three years of research and consulting experience. Her coverage areas are Procurement, Customer Engagement, and Energy.

Madhuparna holds an MA in International Studies and Diplomacy from the School of Oriental African Studies, University of London. She completed her Bachelor of Arts in Sociology from Presidency College, Kolkata.

madhuparna.banerjee@hfsresearch.com