Market Share

Worldwide Cognitive/AI Software Platforms Market Shares, 2017: Significant Growth Continues

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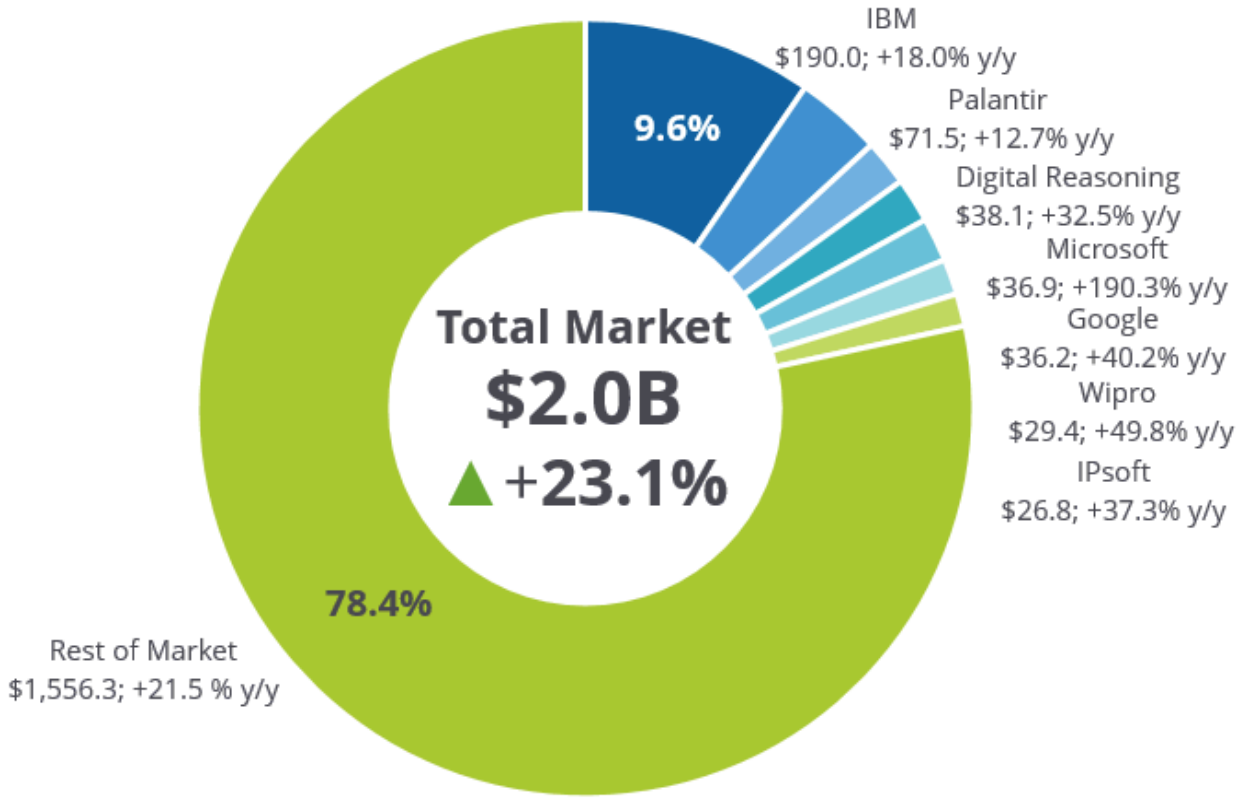
IDC MARKET SHARE FIGURE

FIGURE 1

Worldwide Cognitive/AI Software Platforms 2017 Share Snapshot



Note: 2017 Share (%), Revenue ($M), and Growth (%)

Source: IDC, 2018

June 2018, IDC #US44013718

EXECUTIVE SUMMARY

The cognitive/artificial intelligence (AI) software platforms market experienced significant growth in 2017, growing 23.1% to $2 billion. Growth in this market was due to increases in conversational AI platforms as well as general-purpose cognitive/AI platforms being used to develop interfaces and applications ranging from conversational interfaces to predictive and prescriptive applications that offer advice and recommendations. The cognitive/artificial intelligence software platforms market is focused on tools and API frameworks for applications and technologies based on artificial intelligence and machine learning using both structured and unstructured data to drive these applications.

The continued growth rate in 2017 represents the broad adoption of deep learning and other forms of machine learning, natural language processing (NLP), generation, and understanding as well as semantically enabled knowledge extraction technologies including knowledge graphs and reasoning systems. Factors that influenced market growth in 2017 include:

- In 2017, many organizations continued to use deep learning and machine learning tools to augment, expand, and improve existing applications as well as develop completely new types of applications.
- Open source deep learning and machine learning APIs and toolsets continued to expand and proliferate throughout enterprises.
- The number of conversational AI platforms continued to increase in 2017, and the development of chatbots and other types of conversational interfaces continued to be one of the most popular forms of AI in production.

This IDC study presents a view of worldwide cognitive/AI software platforms revenue broken down by vendor for the historical year 2017.

"The cognitive/AI software platforms market experienced significant growth in 2017 with revenue of $2 billion and a growth rate of 23.1%," says David Schubmehl, research director, Cognitive/Artificial Intelligence Systems, at IDC. "Organizations are using deep learning, machine learning, NLP, speech analytics, and other AI platform technologies to provide capabilities for end users that offer advice, predictions, and recommendations."

ADVICE FOR TECHNOLOGY SUPPLIERS

Cognitive/AI software platforms vendors need to make their tools and platforms easy to develop, easy to use, and easy to scale. We are already seeing vendors addressing these needs by offering suites of tools and APIs such as Amazon's SageMaker and Microsoft Azure Machine Learning Studio that help enterprise developers to create AI-enabled applications more easily than ever before. These tools are providing the capabilities for enterprises to create applications that do product recommendation, pricing optimization, predictive maintenance, financial advice, and a whole host of other use cases.

In addition, we're seeing vendors providing low-code/no-code AI tools for jobs like image recognition and classification, speech recognition, machine transcription, machine learning-based text analytics, and a host of other functions. These tools can be simply plugged into an application, providing the capabilities of an AI-enabled function without the need for extensive training or development.

Vendors also need to accommodate the low- or no-cost open source deep learning and machine learning toolkits and cloud services that are proliferating in the market today. Many organizations are

using these tools such as Google's TensorFlow, Caffe, and R to develop their own cognitive/AI applications. However, these toolsets need additional capabilities and technologies that aren't currently offered by open source, which is why the cognitive/AI platforms that offer a range of additional technologies have emerged. Vendors need to include flexibility for developers to add open source models into an extensible framework. The vendors that can successfully mix and match open source with proprietary technologies and offer them at a reasonable cost will be the winners in this market in the long run.

MARKET SHARE

Table 1 displays 2015-2017 worldwide revenue and 2017 growth and market share for cognitive/AI software platforms.

TABLE 1

Worldwide Cognitive/AI Software Platforms Revenue by Vendor, 2015-2017 ($M)

Vendor	2015	2016	2017	2017 Share (%)	2016–2017 Growth (%)
IBM	104.0	161.0	190.0	9.6	18.0
Palantir	63.0	63.4	71.5	3.6	12.7
Digital Reasoning	24.4	28.7	38.1	1.9	32.5
Microsoft	5.0	12.7	36.9	1.9	190.3
Google	–	25.8	36.2	1.8	40.2
Wipro	12.1	19.6	29.4	1.5	49.8
IPsoft	16.7	19.5	26.8	1.3	37.3
Amazon Web Services	3.3	11.0	24.9	1.3	126.8
CognitiveScale	7.6	12.5	17.0	0.9	36.1
Verint Systems	12.1	14.2	16.5	0.8	16.2
Expert System	7.7	10.7	14.6	0.7	37.2
Nuance Communications	13.4	13.4	13.2	0.7	-1.7
CustomerMatrix	9.0	10.1	11.5	0.6	13.6
Other	719.7	1,209.6	1,458.6	73.5	20.6
Total	998.0	1,612.2	1,985.1	100.0	23.1

Source: IDC's Worldwide Semiannual Software Tracker, April 2018

WHO SHAPED THE YEAR

IBM and Palantir saw continued strong growth in the cognitive/AI software platforms market in 2017. In addition, both Microsoft and Amazon experienced triple-digit growth in their AI platform revenue because of the launch of several new AI platform services and APIs in 2017.

Google also experienced strong growth in its AI platform revenue based on new services that were launched in 2017.

MARKET CONTEXT

In 2017, the cognitive/AI software platforms market was made up primarily of many dozens of start-ups and small software firms with an increasing number of very large vendors providing market offerings. These vendors include IBM, Microsoft, Google, and Amazon as well as other well-known software vendors such as Salesforce, SAP, and OpenText. At the same time, mergers and acquisitions have continued, adding AI platform capabilities to companies such as Cisco and Verint.

In addition, IDC is seeing several factors driving the growth of revenue in the cognitive/AI software platforms market. These include:

- Machine learning/deep learning is a key component of most AI applications. Improvements in the variety, efficiency, and reliability of machine learning will make these systems more usable and stable and help increase their popularity. New types of learning, such as reinforcement learning and generative adversarial networks (GANs), are also creating opportunities to add AI in even more diverse settings than those exists today.
- The exponential increase in information adds to the continued pressure to improve knowledge worker performance and decision making. IDC has forecast that the amount of information will exceed 163ZB by 2025 (*Data Age 2025, sponsored by Seagate*). Knowledge workers are facing an ever-increasing amount of information to deal with. AI software platforms provide a suite of tools that will enhance and augment knowledge worker productivity using predictions, recommendations, and advice.

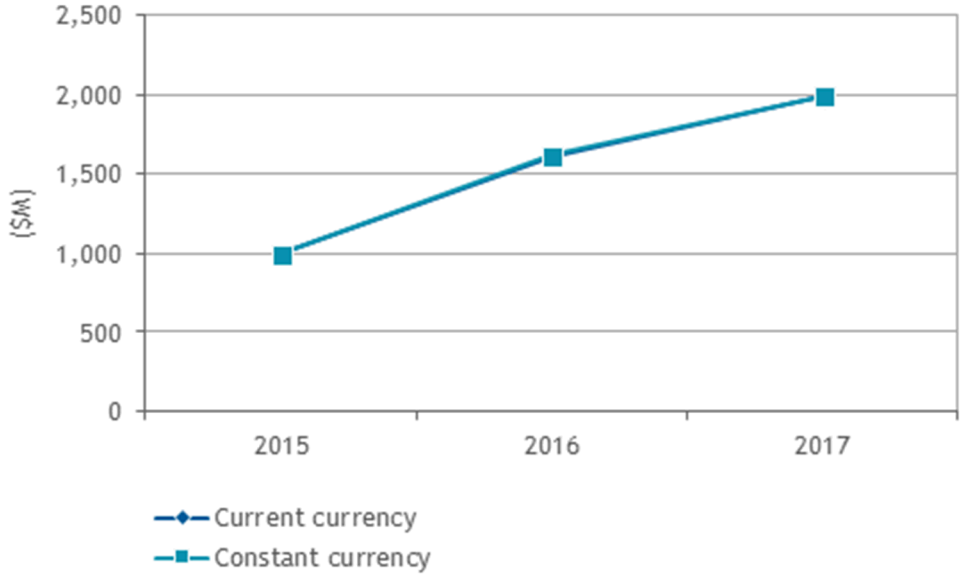
However, on the downside, there are also several inhibiting factors. These include:

- Enterprise software applications will increasingly adopt cognitive/AI capabilities in their offerings. As embedded AI becomes more common in the enterprise software stack, there will be less need for custom cognitive/AI applications.
- Data is a necessary component to build deep learning and machine learning models. The need for data curation and knowledge graph building tools, components, and systems will restrict the implementation and use of AI-based applications. Currently, there is a dearth of tools and software components that help organizations find, gather, and curate information that becomes the basis of a cognitive/AI system.

Figure 2 shows cognitive/AI software platforms revenue by current and constant currency.

FIGURE 2

Worldwide Cognitive/AI Software Platforms Revenue, 2015–2017: Current and Constant Currency

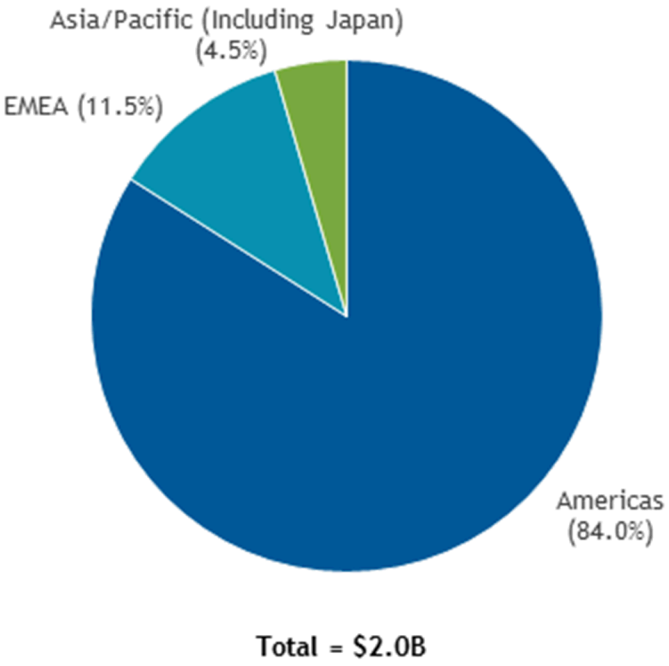


Source: IDC's Worldwide Semiannual Software Tracker, April 2018

Figures 3-5 show cognitive/AI software platforms revenue share by region, operating environment, and deployment type, respectively, for 2017.

FIGURE 3

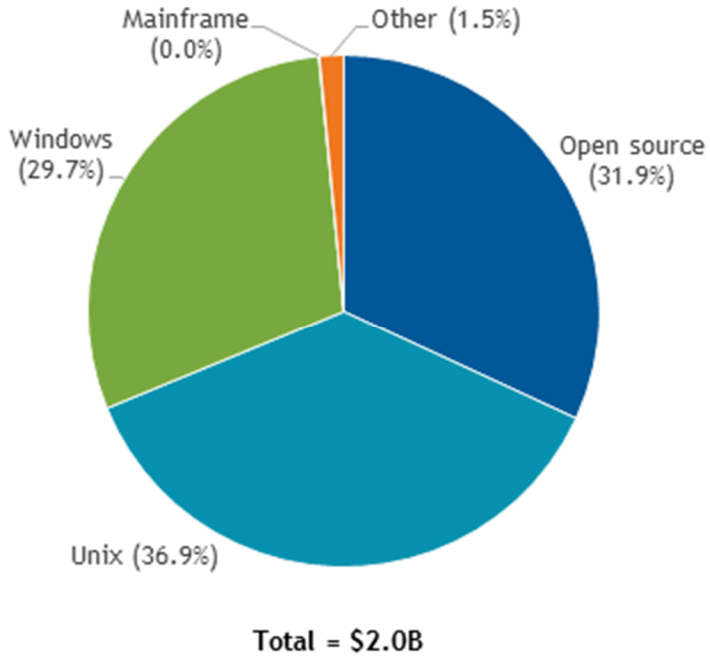
Worldwide Cognitive/AI Software Platforms Revenue Share by Region, 2017



Source: IDC's Worldwide Semiannual Software Tracker, April 2018

FIGURE 4

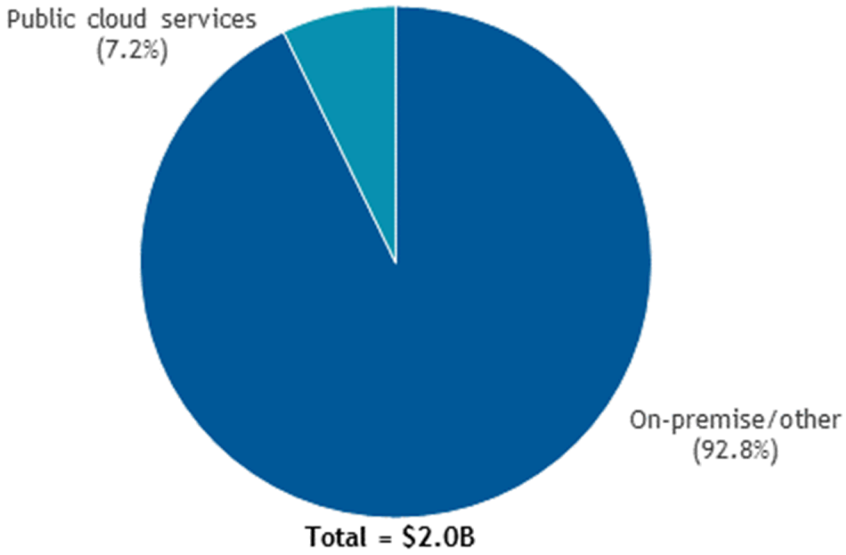
Worldwide Cognitive/AI Software Platforms Revenue Share by Operating Environment, 2017



Source: IDC's Worldwide Semiannual Software Tracker, April 2018

FIGURE 5

Worldwide Cognitive/AI Software Platforms Revenue Share by Deployment Type, 2017



Source: IDC's Worldwide Semiannual Software Tracker, April 2018

Significant Market Developments

According to CB Insights, AI acquisitions were up 44% from 2016 going from 80 to 115 in 2017. A significant number of these acquisitions were done by leading technology vendors such as Google, Apple, Amazon, Intel, and Microsoft.

The race to acquire IP and talent in the AI platform market is continuing in 2018, and we expect to see even more acquisitions take place as other leading companies decide that they need to have a stake in AI software development as well.

Finally, another significant market development is the migration of AI and deep learning algorithms from the cloud or on-premise to mobile devices, especially smartphones. The ability to provide predictions, recommendations, and advice that was actually generated on mobile devices with local data is an emerging trend that IDC believes will become extremely important over the next two to five years.

METHODOLOGY

The IDC software market sizing and forecasts are presented in terms of commercial software revenue. IDC uses the term *commercial software* to distinguish commercially available software from custom software. Commercial software is programs or codesets of any type commercially available through sale, lease, rental, or as a service. Commercial software revenue typically includes fees for initial and continued right-to-use commercial software licenses. These fees may include, as part of the license contract, access to product support and/or other services that are inseparable from the right-to-use

license fee structure, or this support may be priced separately. Upgrades may be included in the continuing right of use or may be priced separately. These are counted by IDC as commercial software revenue.

Commercial software revenue excludes service revenue derived from training, consulting, and systems integration that is separate (or unbundled) from the right-to-use license but does include the implicit value of software included in a service that offers software functionality by a different pricing scheme. It is the total commercial software revenue that is further allocated to markets, geographic areas, and sometimes operating environments. For further details, see *IDC's Worldwide Software Taxonomy, 2017* (IDC #US42961816, August 2017).

Bottom-up/company-level data collection for calendar year 2017 began in January 2018 with in-depth vendor surveys and analysis to develop detailed 2017 company models by market, geographic region, and operating environment.

The data presented in this document is IDC estimates only.

Note: All numbers in this document may not be exact due to rounding.

MARKET DEFINITION

Cognitive/artificial intelligence (AI) software platforms provide the functionality to analyze, organize, access, and provide advisory services based on a range of structured and unstructured information. These platforms facilitate the development of intelligent, advisory, and cognitively enabled applications, including intelligent assistants. The technology components of cognitive/AI software platforms include text analytics, rich media analytics (such as audio, video, and image), tagging, searching, machine learning, categorization, clustering, hypothesis generation, question answering, visualization, filtering, alerting, and navigation.

These platforms typically include knowledge representation tools such as knowledge graphs, triple stores, or other types of NoSQL data stores. These platforms also provide for knowledge curation and continuous automatic learning based on tracking past experiences. When these individual technology components are sold standalone, they are accounted for in other software functional markets, such as content analytics and search, advanced and predictive analytics, and nonrelational database management systems (NDBMSs).

RELATED RESEARCH

- *IDC's Forecast Scenario Assumptions for the ICT Markets and Historical Market Values and Exchange Rates, Version 1, 2018* (IDC #US43651518, April 2018)
- *Executive Guide to Assessing Tangible and Intangible Impacts of Cognitive Computing and Artificial Intelligence* (IDC #US42348117, March 2017)
- *Worldwide Cognitive Server Infrastructure Forecast, 2016-2021* (IDC #US42294414, February 2017)
- *Market Analysis Perspective: Worldwide Cognitive Systems and Content Analytics Software, 2016* (IDC #US40797116, September 2016)
- *Worldwide Cognitive Systems, Content Analytics, and Discovery Software Forecast, 2016-2020* (IDC #US40305316, June 2016)

- *IDC PlanScape: Implementation of Cognitive Systems* (IDC #US41477516, June 2016)
- *IDC PeerScape: Digital Transformation - Practices for Strategically Leveraging Cognitive Systems* (IDC #US41191916, April 2016)

About IDC

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