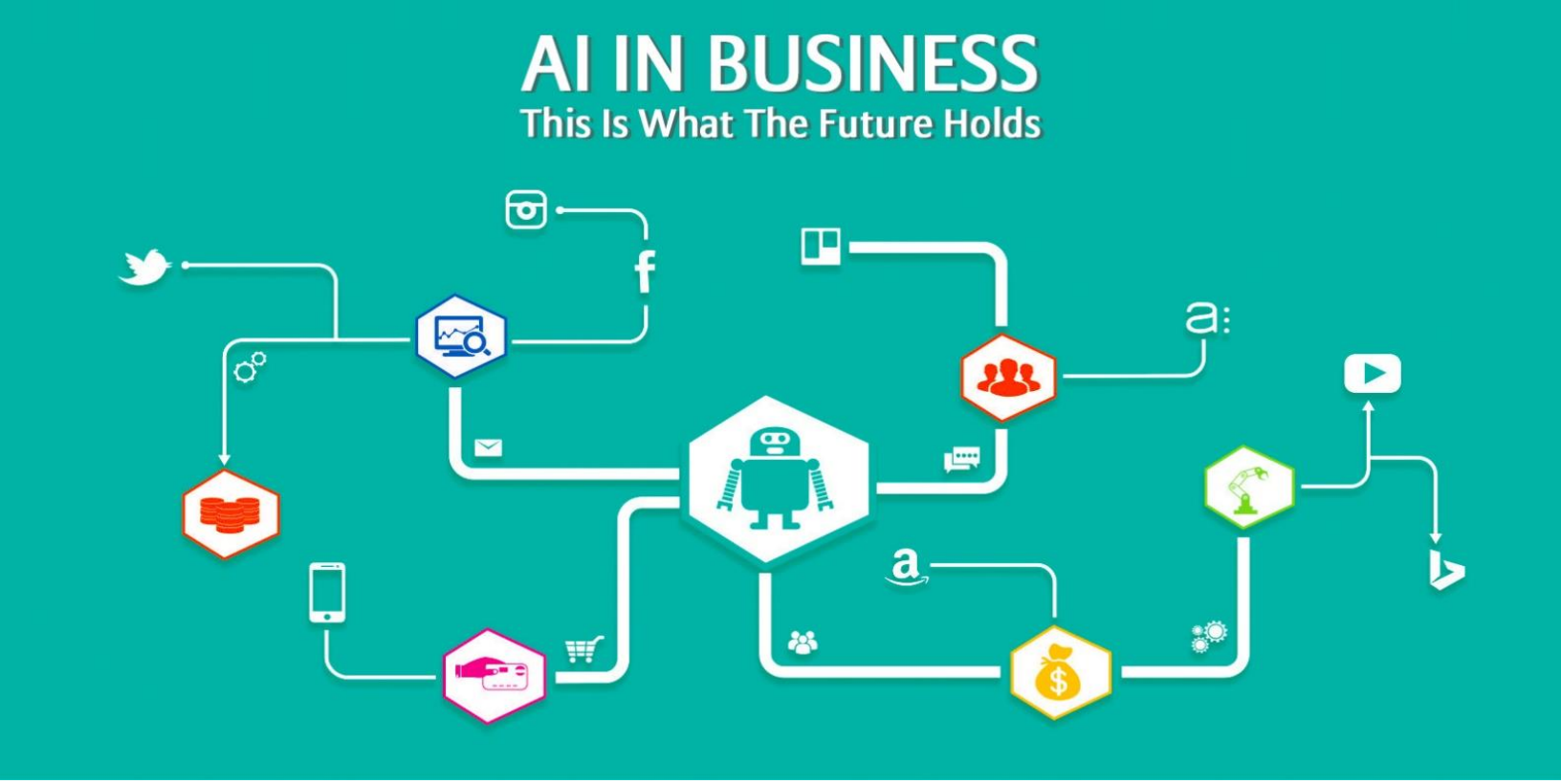

AI In Business: This Is What The Future Holds

AI technology will spread broadly in the next few years across industries ranging from health care to automobiles. (Dennis Nishi)

The popular Super Bowl commercial laid out a tongue-in-cheek crisis in the future of AI. Amazon.com's (AMZN) digital assistant Alexa loses her voice. What to do in a world dependent on artificial intelligence in business and at home?

Enter a series of stand-ins, including actor Anthony Hopkins, who goes into creepy Hannibal Lecter mode and unnerves the people he's supposed to help. Thankfully, Alexa recovers her digital voice and restores order. AI proves its value.

Corporate America is on the cusp of a plunge into this future of AI in business. And giant technology companies — which stand to benefit by both harnessing their own artificial intelligence applications and helping other companies make the leap — are immersed in it now.

Artificial intelligence innovations are well along at Amazon, Google-parent Alphabet (GOOGL), Apple (AAPL) and Microsoft (MSFT). Alexa, found on Amazon's Echo devices, is just one example. Digital aides like Google's aptly named Assistant on its Home smart speaker and Apple's Siri on its Home Pod can help with shopping, entertainment, school work and other tasks.

Tech companies also are busy at work on deploying AI in self-driving cars. And companies ranging from giant IBM (IBM) and Oracle (ORCL) to a wave of startups are competing for talent and technology so they can cash in as AI spreads to non-tech enterprises.

Outside Silicon Valley, companies are dipping a tentative toe into AI. Surveys show that most companies plan to evaluate how artificial intelligence can make them better, whether in making sales forecasts, automating tasks now done manually, improving existing products or enabling new ones. Budgets could more than triple in the next few years.

"There's a lot of interest and experimentation; companies are still in the proof-of-concept, project phase," said Nicholas McGuire, vice president of enterprise research at CCS Insight. "We'll see more deployment in about one or two years."

AI In Business Now

Artificial intelligence software programs — essentially computer algorithms — analyze huge amounts of data to identify patterns and predict outcomes.
Companies are developing AI software that could save lives through early cancer detection. Other projects might someday thwart a cyberattack.

Banking, retail and health care are among the sectors pushing into AI with pilot projects. Conversational "chat bots" are popping up on company websites, answering questions and improving customer service.

Walmart Stores (WMT) harnesses AI to optimize inventories and supply chains by predicting future demand and reordering stock. Monsanto (MON) uses artificial intelligence to identify the most promising molecules in bioengineering. John Deere (DE) expects AI to reduce chemical spraying volumes in farming. And shale oil producer Devon Energy (DVN) uses AI to guide drilling gear.

There's more. Banks see the future of AI in detecting money laundering and fraud. Manufacturers see AI as helpful in scheduling equipment maintenance. In health care, AI could predict diabetes and other diseases before they develop and identify the most promising treatments. A new algorithm from Google can help predict heart disease via retinal scans.

In e-commerce, marketers expect AI tools to personalize website content to spotlight products or services that each online shopper is most likely to buy and to target ads more effectively. The telecom, oil and gas, media, entertainment and agriculture industries also are expected to embrace AI in their business.

"A lot of companies see AI as transformational, but maybe not quite yet," said Jeff Cotrupe, an analyst at Frost & Sullivan.

Industry disruptions and AI-based business models are off in the future.

"The enterprise has been a bit slow," said Aditya Kaul, research director at Tractica. "Many companies are still in the early stages of understanding what is AI, what problems can be solved, what is possible."

Spending To Deploy AI In Business

IDC forecasts that worldwide spending on AI hardware, software and services will jump to $58 billion by 2021, up from just $12 billion in 2017. AI is not a budget line-item at this stage," said CCS's McGuire. JPMorgan estimates that AI will account for 1.8% of global enterprise IT budgets by 2021. Though still small next to, say, the 8% spent on cybersecurity that would be up from a scant 0.3% in 2016.

An AI spending boom would boost growth at enterprise software firms, cloud computing providers and IT service providers such as Microsoft, IBM, Accenture (ACN), Salesforce.com (CRM) and Oracle.

"The AI killer app has emerged: cost savings," Brent Bracelin, a KeyBank Capital Markets analyst, said in a recent note to clients. Aside from customer service, he says many time-consuming, back-office tasks such as human resources, finance and accounting will be automated with AI.

Artificial Intelligence Development Tools

One key to the future of AI will be to make it easier for companies to forge ahead with artificial intelligence projects, say analysts. Salesforce.com, AT&T (T) and Google are among those seeking a faster track for AI in business.
AT&T, with an open-source software project, aims to make developing AI predictive tools as easy as building a website. Working with IT consulting firm Tech Mahindra, AT&T has launched an open-source artificial intelligence software project with the Linux Foundation.

"There is some confusion that doing AI is very expensive if you look at the R&D budgets of Google and Amazon," said Kaul. "But you don't need billions of dollars to get AI projects started. There is open source software — it's a big trend within AI — that helps companies build their own solutions."

Salesforce.com has a mantra to help customers build AI tools "with clicks not code." That means companies don't need their own programmers to write algorithms that can find patterns or make inferences from sales data.
Salesforce has a line of tools it calls Einstein that use a company's historical lead and account data to predict which deals are more likely to close.

"What companies need is the ability to apply AI to their business. There's not a lot of off-the-shelf AI, like Salesforce's Einstein," said CCS Insight's McGuire. "But technology is advancing quickly. We're going to see a lot more technology that helps companies automate the creation of custom AI models, which will speed up the market."

McGuire says nearly 60% of companies surveyed by CCS Insight are testing or studying AI. One problem is that high-tech companies are willing to pay much higher salaries for AI specialists, which increases their expenses.
If they lack in-house expertise, McGuire says many companies are turning to cloud computing vendors — Amazon Web Services, Microsoft and Google — to get a head start.

Cloud computing vendors aim to provide AI-as-a-service. Companies can run artificial intelligence apps on powerful computers rented by the hour to crunch massive quantities of data.

"All the public clouds are fighting over who has the best AI platform," said Jason Ader, a William Blair analyst, in a report.

Future Of AI: Who Has The Expertise?

Many midsize or large companies lack internal technology staffers who can build AI-powered apps. That gives information technology services firms such as Accenture and IBM an opening as companies look to develop custom AI apps, says Bhavan Suri, analyst at William Blair. IBM, which has focused its Watson AI platform on health care, is moving into new markets such as digital marketing.

Wall Street analysts anticipate that AI tools will be integrated with existing big data, business intelligence and industry-specific enterprise software. Kaul says many industries are still in the early stages of digitizing records handled as paperwork. Once that data is available, AI tools can go to work to help deploy AI in business.

"Although Google, Facebook (FB), Baidu (BIDU), Apple, Microsoft and Amazon may have taken early advantage of their large data sets and established platforms, enterprise software vendors like SAP, Oracle, and Salesforce are gradually embedding AI into their offerings," said the JPMorgan report.

Software companies pushing into AI include Adobe Systems (ADBE), Tableau Software (DATA), Zendesk (ZEN), Coupa Software (COUP), and Cornerstone on Demand (CSOD), HubSpot (HUBS), Splunk (SPLK) and Workday (WDAY).

The fact that most non-tech companies need a helping hand getting into artificial intelligence also provides an opportunity for startups pushing into the enterprise market. Among them: Sentient Technologies, Data Robot, Clarifai, Algorithmia, Affectiva and SpaceKnow.

AI Deep Learning Vs. Machine Learning

At this early stage of AI in business, corporate America is using what's called "machine learning" for the most part as opposed to more complex "deep learning." With ML, algorithms are trained to create predictive models or identify patterns. ML helps predict what a particular customer is likely to buy or detects insurance claims fraud.

Tech companies use machine learning to personalize web content and other tasks. But they also are plowing ahead in applying deep learning, which mimics neural networks in the human brain, for classifying images and other purposes. Self-driving cars will require deep learning to map their surroundings and detect hazards.

Technology giants are in an AI arms race. They're funding or acquiring startups and paying super-salaries to hire AI computer scientists. Amazon isn't stopping at Alexa-powered digital assistants. Its Amazon Go retail stores use computer vision and AI to do away with cashiers.

Apple uses artificial intelligence software for facial recognition in the new iPhone X. And Apple is developing AI health care mobile apps. For Facebook users, AI lurks behind the scenes, playing a central role in what advertisements or news they see. And at Netflix (NFLX), programming recommendations are getting better as software algorithms are trained to identify movie matches.

What sets the tech giants apart is commitment. For them, the future of AI is now.

Google Chief Executive Sundar Pichai makes a point to show this. On earnings calls and tech conferences, he now calls Google an "AI first" company.