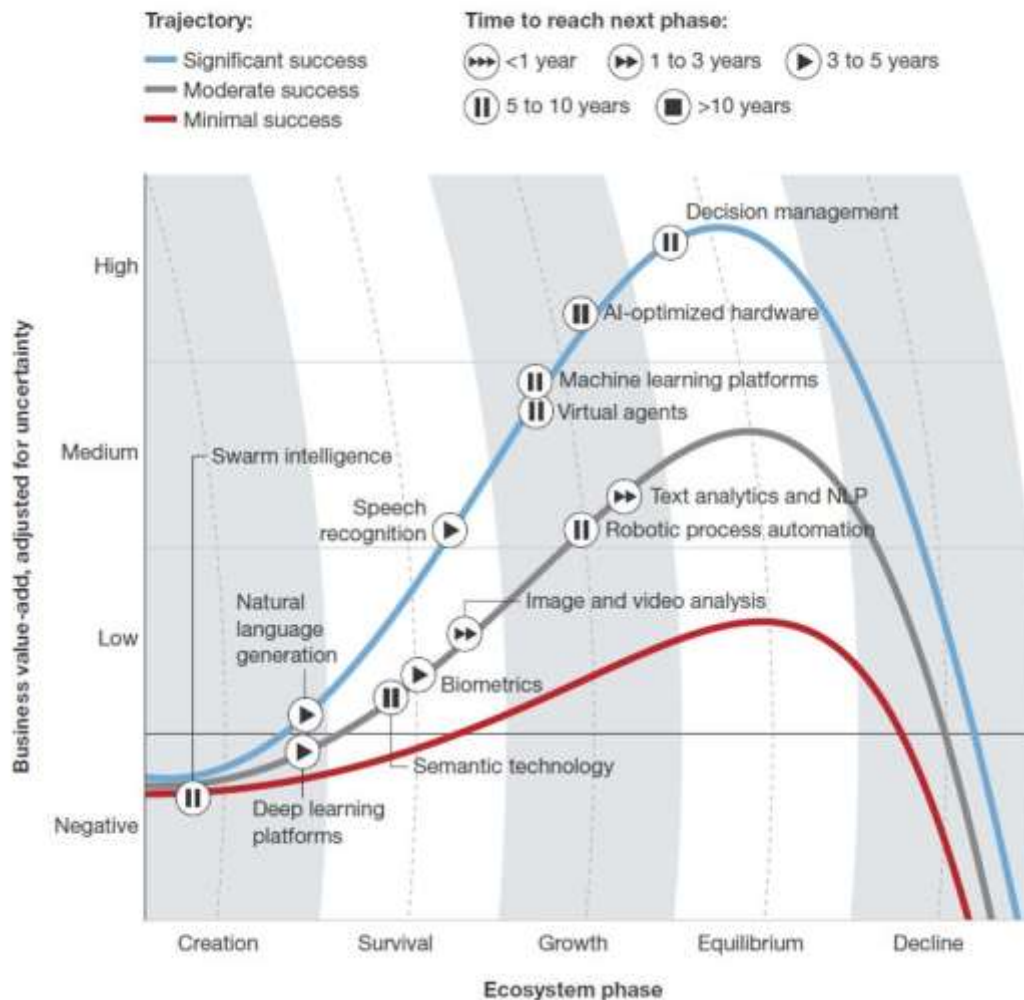# Top 10 Hot Artificial Intelligence (AI) Technologies

di Gil Press

FIGURE 4 TechRadar™: Artificial Intelligence Technologies, Q1 '17

The market for artificial intelligence (AI) technologies is flourishing. Beyond the hype and the heightened media attention, the numerous startups and the internet giants racing to acquire them, there is a significant increase in investment and adoption by enterprises. A Narrative Science survey found last year that 38% of enterprises are already using AI, growing to 62% by 2018. Forrester Research predicted a greater than 300% increase in investment in artificial intelligence in 2017 compared with 2016. IDC estimated that the AI market will grow from $8 billion in 2016 to more than $47 billion in 2020.

Coined in 1955 to describe a new computer science sub-discipline, "Artificial Intelligence" today includes a variety of technologies and tools, some time-tested, others relatively new. To help make sense of what's hot and what's not, Forrester just published a TechRadar report on Artificial

[Intelligence](#) (for application development professionals), a detailed analysis of 13 technologies enterprises should consider adopting to support human decision-making.

Based on Forrester's analysis, here's my list of the 10 hottest AI technologies:

1. **Natural Language Generation**: Producing text from computer data. Currently used in customer service, report generation, and summarizing business intelligence insights. Sample vendors: Attivio, Automated Insights, Cambridge Semantics, Digital Reasoning, Lucidworks, Narrative Science, SAS, Yseop.

2. **Speech Recognition**: Transcribe and transform human speech into format useful for computer applications. Currently used in interactive voice response systems and mobile applications. Sample vendors: NICE, Nuance Communications, OpenText, Verint Systems.

3. **Virtual Agents**: "The current darling of the media," says Forrester (I believe they refer to my evolving relationships with Alexa), from simple chatbots to advanced systems that can network with humans. Currently used in customer service and support and as a smart home manager. Sample vendors: Amazon, Apple, Artificial Solutions, Assist AI, Creative Virtual, Google, IBM, IPsoft, Microsoft, Satisfi.

4. **Machine Learning Platforms**: Providing algorithms, APIs, development and training toolkits, data, as well as computing power to design, train, and deploy models into applications, processes, and other machines. Currently used in a wide range of enterprise applications, mostly `involving prediction or classification. Sample vendors: Amazon, Fractal Analytics, Google, H2O.ai, Microsoft, SAS, Skytree.

5. **AI-optimized Hardware**: Graphics processing units (GPU) and appliances specifically designed and architected to efficiently run AI-oriented computational jobs. Currently primarily making a difference in deep learning applications. Sample vendors: Alluviate, Cray, Google, IBM, Intel, Nvidia.

6. **Decision Management**: Engines that insert rules and logic into AI systems and used for initial setup/training and ongoing maintenance and tuning. A mature technology, it is used in a wide variety of enterprise applications, assisting in or performing automated decision-making. Sample vendors: Advanced Systems Concepts, Informatica, Maana, Pegasystems, UiPath.

7. **Deep Learning Platforms**: A special type of machine learning consisting of artificial neural networks with multiple abstraction layers. Currently primarily used in pattern recognition and classification applications supported by very large data sets. Sample vendors: Deep Instinct, Ersatz Labs, Fluid AI, MathWorks, Peltarion, Saffron Technology, Sentient Technologies.

8. **Biometrics**: Enable more natural interactions between humans and machines, including but not limited to image and touch recognition, speech, and body language. Currently used primarily in market research. Sample vendors: 3VR, Affectiva, Agnitio, FaceFirst, Sensory, Synqera, Tahzoo.

9. **Robotic Process Automation**: Using scripts and other methods to automate human action to support efficient business processes. Currently used where it's too expensive or inefficient for humans to execute a task or a process. Sample vendors: Advanced Systems Concepts, Automation Anywhere, Blue Prism, UiPath, WorkFusion.

10. **Text Analytics and NLP**: Natural language processing (NLP) uses and supports text analytics by facilitating the understanding of sentence structure and meaning, sentiment, and intent through statistical and machine learning methods. Currently used in fraud detection and security, a wide range of automated assistants, and applications for mining unstructured data. Sample vendors: Basis Technology, Coveo, Expert System, Indico, Knime, Lexalytics, Linguamatics, Mindbreeze, Sinequa, Stratifyd, Synapsify.

There are certainly many business benefits gained from AI technologies today, but according to a survey Forrester conducted last year, there are also obstacles to AI adoption as expressed by companies with no plans of investing in AI:

There is no defined business case	42%
Not clear what AI can be used for	39%
Don't have the required skills	33%
Need first to invest in modernizing data mgt platform	29%
Don't have the budget	23%
Not certain what is needed for implementing an AI system	19%
AI systems are not proven	14%
Do not have the right processes or governance	13%
AI is a lot of hype with little substance	11%
Don't own or have access to the required data	8%
Not sure what AI means	3%

Once enterprises overcome these obstacles, Forrester concludes, they stand to gain from AI driving accelerated transformation in customer-facing applications and developing an interconnected web of enterprise intelligence.