

Artificial Intelligence Industry Primer

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McCAFFERTY
&COMPANY

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Section 1

Executive Summary

Executive Summary

Industry Overview

Overview

Definition

“The field of computer science dedicated to solving cognitive problems commonly associated with human intelligence, such as learning, problem solving, and pattern recognition”⁽¹⁾

Key AI Concepts:

- ▶ **Machine Learning:** Algorithmic program or process that improves predictability as it undergoes more iterations
- ▶ **Deep Learning:** A part of machine learning that automatically extracts features through large volumes of data
- ▶ **Neural Networks:** An interconnected network of algorithm neurons across multiple algorithmic layers that mimic function of human brain
- ▶ **Moore’s Law:** An observation by Gordon Moore stating that *“The number of transistors in a dense integrated circuit doubles approximately every two years”*
- ▶ **Singularity:** An idea stating that technological progress, particularly in AI, will reach a point where machines are exponentially smarter than humans
- ▶ **GPU Accelerated Processing:** Processing technique that uses parallel connections between smaller core processors to handle workloads

Benefits of AI

- ▶ Higher labor productivity
- ▶ Optimized deployment of resources
- ▶ Higher corporate profits
- ▶ Higher overall quality of life for society

AI – Transforming Lives



Artificial Intelligence is expected to have a transformative effect on almost every aspect of life

Key Areas of AI Applications



Autonomous Vehicles



Fraud Detection



Smart Houses & Appliances



Networks



Automatic Programming



Knowledge Management



Home Robots



Surveillance

Executive Summary

Companies & Strategies

Commentary

- ▶ AI chip manufacturers are industry agnostic and are seeking to foster AI ecosystem development and growth to drive chip sales
- ▶ Platform companies generate large amounts of proprietary data and are using AI to optimize platform performance
- ▶ Large strategic companies in different parts of the ecosystem are developing partnerships for mutual benefit and growth
- ▶ Companies are using a combination of internal development and investment activities to develop AI capabilities

Strategies of Select Companies:

- ▶ **Nvidia:** Emphasizing applications where use of GPU chips offer superior performance to CPU chips.
- ▶ **Intel:** Emphasizing applications where use of CPU chips offer superior performance to GPU chips.
- ▶ **Apple:** Creating new positions and hiring new employees to develop internal AI capabilities. Smaller amount of external investment activity relative to competitors
- ▶ **Google:** Developing AI capabilities for applications across Google business units. Leveraging internal capabilities and actively making investments
- ▶ **Facebook:** AI development activity is being harnessed for applications across Facebook's social media platform

Key AI Industry Participants

Platform Companies



Hardware / Chip Manufacturers



Additional Participants



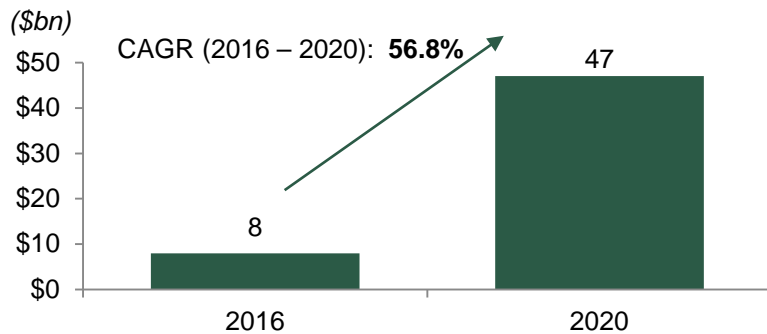
Executive Summary

Market Overview

Overview

- ▶ The AI market is at a very nascent stage, that makes it difficult to define an exact market size
- ▶ Although there have been significant investments in terms of R&D, the market has limited physical AI based products only
- ▶ Factors like improved productivity, diversified application areas, increased customer satisfaction, and Big Data integration are expected to drive the AI market

Market Size



Potential Sub Market Size	\$65.3bn Autonomous Vehicles (2027E)	\$30.0bn Image Recognition (2020E)	\$13.4bn Natural Language Processing (2024E)
	\$12.3bn Virtual Assistant (2024E)	\$9.2bn Predictive Analytics (2020E)	\$8.8bn Robotic Process Automation (2024E)

Key Products

Consumer Products



Apple Siri



Amazon Echo Dot



Samsung Otto



Google Home



Google Nest



Microsoft Cortana

Business Products



Watson Conversation



Google Cloud Platform

Google Cloud Machine Learning



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Executive Summary

Capital Markets

Overview

M&A Transactions

- ▶ Drivers of AI M&A activity include:
 - AI infrastructure buildout
 - Acqui-hire / talent acquisition
 - Product improvement leveraged through AI integration
 - Technology / patent acquisition
 - Fear of missing out

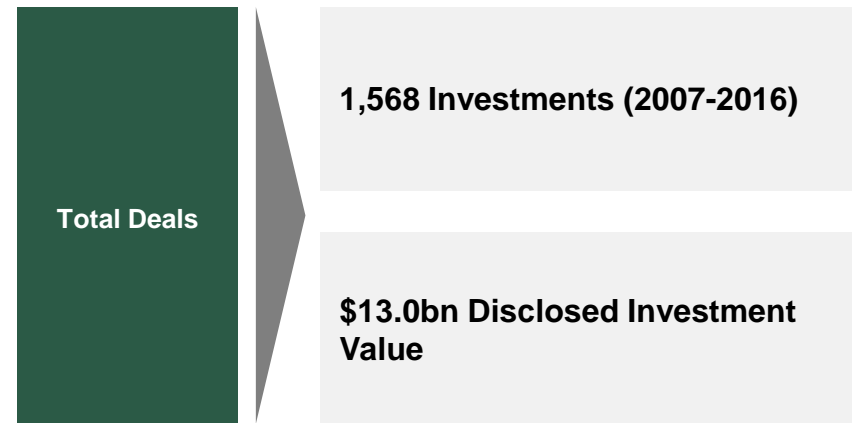
Private Placements

- ▶ Drivers of AI private placement activity include:
 - Obtaining AI exposure
 - Fostering of partnerships
 - Large market opportunity for AI companies creates potential for big exits
 - Need for working capital since most companies are focused on core technology development and generate little revenue

Artificial Intelligence – M&A



Artificial Intelligence – Private Placements



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