



Sources	Harvard Business review		
Date	February 2021		
Potential scale of impact	Certainty of outcome	Impact horizon	
★★★★	★★★★	H1	H2 H3

In AI, research doesn't provide a durable advantage. While research propels the field forward, that research is often shared openly, the patents research yields matter less, and improvements often come from the virtuous cycle of users generating data and firms refining their product based on what they learn from that data.

In terms of knowledge and technologies, many of the essential algorithms in AI have become public knowledge, accessible from published papers and conference proceedings. This is important in enabling latecomers' to catch up with forerunners, allowing them to close the knowledge gap with in a short period of time.

Another way that AI differs from traditional sectors is where innovation creates profit. Put simply, data and talent trump patents in AI research. In traditional sectors such as pharmaceutical or mobile communications, patents play a critical role in securing firms' positions and protecting profit streams. The open science nature of AI means that firms' competitive advantages often stem from the extent to which they can assemble a large database — and develop domain-specific knowledge or applications around the database — faster than anyone else.

Achieving this requires two assets: data and computer science and engineering talent.

The “weak AI” we are developing today — AI that solves narrowly defined problems — requires domain-specific knowledge and user-generated data to improve. For example, AI often needs to be customized to specific business scenarios. You first make a product (e.g., voice recognition), then you attract many users who generate data. Finally, you use machine learning to improve products with data. Improvements continue through this virtuous cycle.

[China's emerging leadership](#) in global AI depends in part on this. It has a vibrant market that is receptive to new AI-based products and Chinese firms are relatively fast in bringing AI products and services to the market. Chinese consumers are also fast in adopting them. As such, the environment supports rapid refinement of AI technologies and AI-powered products.

OPEN SCIENCE
 The open science nature of AI allows latecomers to close the knowledge gap with forerunners in a short period of time

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