

Competitive Strategy

Empowering AI Leadership

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Introduction

No board can fulfil its oversight duties without considering artificial intelligence (AI) and its potential, when managed responsibly, to transform and disrupt strategy.

AI's potential value is enormous. A study of 16 industries by Accenture found that AI has the capability to increase profitability rates by an average of 38% and add trillions of dollars in gross value by 2035.¹

To reap that value, companies are starting to compete using AI by:

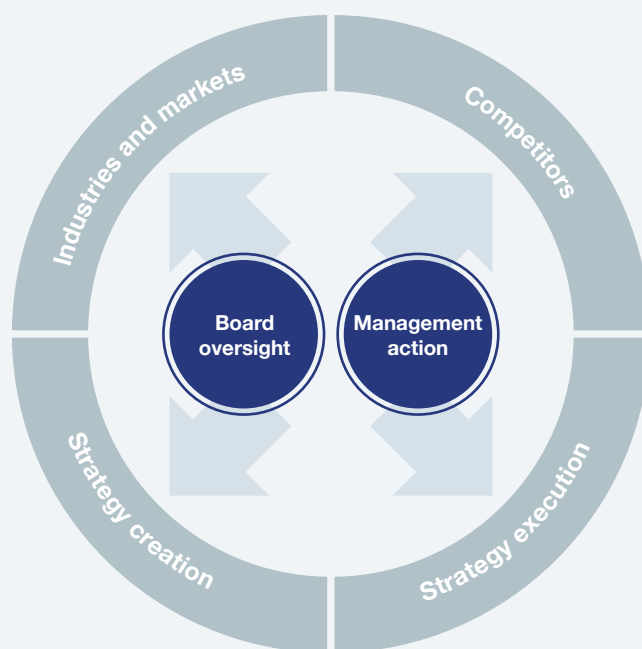
- **Disrupting industries with new business models:** AI, combined with cloud and other digital technologies, is the force behind a new generation of competitors that rivals struggle to match. Digital giants using AI have already transformed how people get information, hail rides and make purchases. Digital upstarts are siphoning customers and profits by introducing business models built on new AI-enabled services and product innovation. For example, retail start-up Stitch Fix is pairing AI with fashion-loving personal consultants to provide a simple new way to shop. As AI evolves, more industries will be disrupted – think of the car industry, as autonomous vehicles become capable and common.²
- **Simultaneously raising and serving customer expectations:** AI enables strategies based on speed, personalization and customer experiences that would otherwise not be possible. AI is helping mortgage lenders stand out in a crowded market by quickly analysing creditworthiness and approving loans. Streaming video providers and online retailers use AI to understand their customers' interests and personalize recommendations. Companies that use AI to offer more attractive and trustworthy new offerings than competitors can improve profitability and even reverse their decline.³

- **Matching up with technically advanced ecosystem partners:** Companies are competing to be desirable ecosystem partners by including AI capabilities in their services, connecting customers to niche companies with AI-enabled products and services, offering datasets for analysis and training machine-learning systems, and supporting open source and responsible AI initiatives that help all companies implement AI. Major technology companies are helping channel partners create their own AI offerings as well as providing AI-enabled products to their clients.⁴

But using AI responsibly is essential to long-term success. Scandals such as Cambridge Analytica have created a deepened resolve to hold management accountable for unethical uses of data and AI. By insisting that AI is fair, safe, reliable and secure, boards help companies build the trust needed to bond customers and partners.

This module will help board directors guide management in using AI to advance their company's strategy in a responsible way. It provides directors with frameworks and questions to assess their own knowledge of AI and their company's AI activities, independently evaluate management's actions in response to AI's competitive opportunities and challenges and prioritize the actions the board can take.

Directors must perform both an inward and outward evaluation: reviewing their own knowledge and their company's activities, as well as appraising the use of AI beyond the walls of the boardroom and the company.





Examples

Media companies increasingly use customer behaviour-pattern data to predict and recommend media content that customers will want to consume. This may be further optimized to meet a business imperative: What will enhance the likelihood of subscription renewal rather than short-term usage? For example, Netflix reduced customer churn by several percentage points using machine learning to provide personalized video recommendations – which helps provide significant competitive advantage against traditional forms of TV consumption.⁵

Stitch Fix, a US-based online styling service, selects products for customers based on surveys, descriptions, feedback and order history over time using collaborative filtering and mixed-effects modelling. They analyse style trends, body measurements, customer feedback and preferences to assist human stylists as they identify suitable products for each customer.⁶

ZestFinance helps lenders better predict credit risk and expand financing to borrowers who might not ordinarily qualify. The company enables lenders to analyse thousands of data points on an applicant and apply cutting-edge AI technology to arrive at a yes-or-no decision. The loans are typically small with high interest rates. ZestFinance is able to explain how it makes its loan decisions.⁷

Responsibilities

Understanding the AI landscape and AI's role in competitive strategy is an emerging area of focus under the board's responsibilities for strategy oversight.

The G20/OECD Principles of Corporate Governance, a set of recommended guidelines, provides a framework for understanding the board's oversight responsibilities for AI.⁸

1

Board members should act on a fully informed basis, in good faith, with due diligence and care, and in the best interest of the company and the shareholders. (Principle VI.A)

When considering questions about the company's competitive strategy, board members must make efforts in good faith to be fully informed about:

- Management's use and plans for applying AI in its competitive strategy, including anticipated benefits, progress in achieving those benefits, alignment with core values and ethical standards, and ameliorating possible internal and external risks associated with such a strategy
- Its competitors' use of AI, and the competitive threat to the organization
- How AI is changing competition in its markets and industries
- Management's plans and actions for ensuring AI is implemented ethically and responsibly.





2

The board should fulfil certain key functions, including reviewing and guiding corporate strategy, major plans of action, risk-management policies and procedures, annual budgets and business plans; setting performance objectives; monitoring implementation and corporate performance; and overseeing major capital expenditures, acquisitions and divestitures.

(Principle VI.D.1)

AI-related topics that boards should review and guide may include:

- Management's approach to using AI within the company's business and overall competitive strategy
- Whether management's plans of action involving the use of AI are consistent with the company's ethical standards or introduce new ethical risks
- The alignment with, and performance of, the company's current use of AI to advance its strategy
- The major actions and expenditures planned for using AI, and their progress towards successful implementation
- Management's awareness, plans and actions for ameliorating the risks: 1) of using AI in the organization's strategy; and 2) from competitors' use of AI
- Whether, and how, AI should be factored into performance objectives for management
- Whether the company's acquisitions are strengthening or affecting its ability to use AI to advance its strategy, and whether they introduce new risks
- Whether management anticipates compliance with upcoming laws and regulations, and possible impacts on individuals' rights, society and ethical values.

3

In order to fulfill their responsibilities, board members should have access to accurate, relevant and timely information.

(Principle VI.F)

To ensure access to information required to oversee AI's application to competitive strategy:

- Board members should be able to obtain the information needed to fulfil their oversight responsibilities relating to AI.
- Board members should have access, at no cost to them, to timely advice from qualified advisers.

The analysis in this section is based on general principles of corporate governance, including the G20/OECD Principles of Corporate Governance, 2015. It does not constitute legal advice and is not intended to address the specific legal requirements of any jurisdiction or regulatory regime. Boards are encouraged to consult with their legal advisers in determining how best to apply the principles discussed in this module to their company.

Oversight

This section includes three tools to help directors oversee management's competitive AI strategy.

The knowledge assessment tool helps board members rate whether they possess, or have access to, the knowledge required to independently judge management's knowledge and leadership on AI and competitive strategy.

View the Knowledge Assessment tool in Appendix 1.

The performance review tool consists of questions boards can ask management about their knowledge of AI and competitive strategy, and the progress and performance of their actions. It offers the SCEPTIC framework to help directors assess the answers they receive.

View the Performance Review tool in Appendix 2.

The guidance tool offers possible suggestions for further action in an “if, then” format.

View the Guidance tool in Appendix 3.



Agenda

The 5A framework will help directors set the agenda for initial meetings, prepare for discussions and anticipate follow-ups.

- **Attention:** Establish why AI is important for the company to retain industry leadership or remain competitive. Focus on industry-disrupting opportunities, emerging business models and competitors, and risks and ethics issues that could affect stock valuation, profitability and future growth. Gather information on activities by incumbent and emerging competitors, changing customer expectations and challenges to existing business models.
- **Alignment:** Build the case for why AI warrants board attention. The Responsibility section explains why AI falls under the board's oversight role.
- **Allies:** Identify fellow board members, executives, internal experts and trusted partners who can credibly back the importance of AI, identify and overcome possible objections from other board members, and share ways to gain backing from undecided directors and executives. In addition to legal and technology heads, executives with competitive strategy formation roles such as the chief strategy officer and chief marketing officer can be potent allies.
- **Action:** Think ahead about the desired outcomes from the board discussion. Initial discussions may lead to establishing a flow of information required to provide independent oversight or identifying issues that require action by management. Later meetings could focus on the progress of strategic AI initiatives, what has been achieved and metrics of success.
- **Assignment:** Consider whether AI and competitive strategy should be discussed by the entire board or by a board committee such as the strategy or technology committees.

Ways to broaden the board's mindset

- Consider how using AI ethically and responsibly can advance strategy and minimize risk.
- Emphasize reimagining the future over referencing the past.
- Ask what we learned as well as how we can win.
- Investigate and discuss potential pilots.
- Create half- or full-day strategic workshops for board members.
- Seek competitive signals from multidisciplinary teams, customers and employees and other external people.

Resources

(All references as of 23/7/19)

Books

- Anastassia Lauterbach and Andrea Bonime-Blanc, *The Artificial Intelligence Imperative: A Practical Roadmap for Business* (Praeger, 2018).
- Erik Brynjolfsson and Andrew McAfee, *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies* (WW Norton and Company, 2014).
- Kai-Fu Lee, *AI Superpowers: China, Silicon Valley, and the New World Order* (Houghton Mifflin, 2018).
- Larry Downes and Paul Nunes, *Big Bang Disruption: Strategy in the Age of Devastating Innovation* (Portfolio/Penguin, 2014).

Executive education programmes

- IESE, “Artificial Intelligence for Executives”, Barcelona, Spain.
- University of California, Berkeley, “Artificial Intelligence Unlocked”, Berkeley, California.

Reports and articles

- Mark Purdy and Paul Daugherty, “How AI Boosts Industry Profits and Innovation”, Accenture 2017.
- Michael Chui, James Manyika et al., “Notes from the AI Frontier: Applications and Value of Deep Learning”, McKinsey Global Institute, 2018.
- Sam Ransbotham, David Kiron et al., “Reshaping Business with Artificial Intelligence: Closing the Gap Between Ambition and Action”, MIT Sloan Management Review in collaboration with Boston Consulting Group, 2017.

Endnotes

(All references as of 23/7/19)

1. Mark Purdy and Paul Daugherty, “How AI Boosts Industry Profits and Innovation”, Accenture, 2017.
2. Paul R. Daugherty and H. James Wilson, Human + Machine: Reimagining Work in the Age of AI, Harvard Business School Press, 2018.
3. Ibid
4. Examples include Microsoft, Fujitsu, and the Partnership for AI.
5. Carlos A. Gomez-Urbe and Neil Hunt, “The Netflix Recommender System: Algorithms, Business Value and Innovation”, ACM Transactions on Management Information Systems, Volume 6, Issue 4, January 2016.
6. Daugherty and Wilson, *ibid.*; Sharon Gaudin, “At Stitch Fix, Data Scientists and AI Become Personal Stylists”, Computerworld, 6 May, 2016.
7. Daugherty and Wilson, *Ibid.*
8. G20/OECD Principles of Corporate Governance, 2015.

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Appendix 1: Knowledge Assessment Tool

This tool can be used by individual directors or as a board exercise.

As the following questions are asked, consider whether:

- The board possesses the knowledge needed for independent judgement (Definition: board members' knowledgeability about AI and AI-related issues)
- The board has access to knowledge (Definition: ability to obtain information from within the company, ability to obtain information from other sources, free access to experts)

The tool also suggests related modules for additional analysis.

External environment:	Ask yourself and fellow directors whether the board is well informed on:	Rate your answer (more than sufficient, sufficient, insufficient):	Related modules:
How AI is changing competition in your industry and markets			
Emergence of new business models	<ul style="list-style-type: none"> • Opportunities to use AI for new offerings and more valuable experiences • New business models made possible by AI • When new AI advances will be available and scalable • Ethical issues and responsibilities that arise with these new business models 		
Changes in customer expectations and behaviour	<ul style="list-style-type: none"> • Changing customer expectations and preferences for product features, interactions, speed, customization and pricing • Changes to buyers' purchasing decisions 		• Customer
Ecosystem partners with AI-based capabilities	<ul style="list-style-type: none"> • Partnership and joint-venture opportunities • Whether partners follow responsible AI practices 		
Other questions	Understanding of competitive risks Does the board: <ul style="list-style-type: none"> • receive information from internal and external sources? • have free access to timely advice from qualified advisers? 		
Competitors' use of AI			
Incumbents and traditional competitors	How traditional competitors compare on: <ul style="list-style-type: none"> • AI-enabled offerings and customer service • AI investments • intellectual property <ul style="list-style-type: none"> – AI talent advisers? 		
Digital giants and upstarts	<ul style="list-style-type: none"> • How digital giants and upstarts target our industry and customers • How our value to customers compares to our digital rivals' • What data digital giant competitors generate and use • Possibilities to partner with digital giants 		• Customer
Other questions	<ul style="list-style-type: none"> • How our competitors' success at competing with AI compares to ours, and why • How our competitors manage fairness, data guardianship, explainability and other AI responsibilities 		

Internal response:	Ask yourself and fellow directors whether the board is well informed on:	Rate your answer (more than sufficient, sufficient, insufficient):	Related modules:
Creation of AI-supported competitive strategy			
Identification of new strategic opportunities	<ul style="list-style-type: none"> • How management explores new AI-supported business models • What management is learning from other companies • Whether management is focused on growth or just cost-reduction • How management uses AI to find new opportunities • The risk and ethical exposure of the opportunities 		<ul style="list-style-type: none"> • Ethics • Risk • AI governance • Technology • Operating model
Investment in AI	<ul style="list-style-type: none"> • Expenditures in AI to support the company's strategy • Developing needed skills and talent 		<ul style="list-style-type: none"> • People and culture • AI governance
For natural science-based industries (e.g. resources, healthcare):	<ul style="list-style-type: none"> • Use of AI for scientific discoveries (e.g. chemical compounds, medical treatments and protocols, oil or gas reserves) 		
Implementation of AI-supported strategy			
Initiation	<ul style="list-style-type: none"> • What strategic AI initiatives are under consideration • Value anticipated • How management judges initiatives' value, risks, compliance with core mission and values, and the responsibilities and legal requirements to be met 		<ul style="list-style-type: none"> • Ethics • Risk • Technology • People and culture • Brand
Progress	<ul style="list-style-type: none"> • The status of the company's strategic AI activities • Reasons for delays and cost overruns • Partners and ecosystems involved in the initiatives • Addressing responsibilities and risks 		<ul style="list-style-type: none"> • Ethics • Risk
Evaluation	<ul style="list-style-type: none"> • Value received • Effectiveness of risk mitigation and responsibility assurance 		<ul style="list-style-type: none"> • Ethics • Risk
For companies affecting EU citizens			<ul style="list-style-type: none"> • Risk

Appendix 2: Performance Review Tool

The SCEPTIC framework:

- **Specificity:** Are the answers precise and do they show evidence of depth of knowledge? (Precision, Incision)
- **Candour:** Do the answers cover up negatives, exaggerate positives or steer towards one action?
- **Evidence:** Is there data, KPIs and other support to back up the opinion? Is the evidence biased, incomplete or unscientific?
- **Planning:** Are answers drawn from an effective internal process?
- **Thoroughness:** Are the answers based on a rigorous search for answers from diverse sources, or overreliant on a single, uniform kind of source?
- **Involvement:** Are the answers based on real-world experience?
- **Consistency:** Are the answers you are receiving logical or are there internal contradictions and gaps?

External environment:	Ask management:	Related modules:
How AI is changing competition in your industry and markets		
How AI is changing competition in your industry and markets	<ul style="list-style-type: none"> • Have you found a new AI-enabled business model that would increase our profitability and attraction to customers? • What are the opportunities to improve our offerings and experiences at lower cost? • What companies should we track? • How do we ensure that the new business model doesn't lead to conflicts with our core values and principles? 	
Changes in customer expectations and behaviour	<ul style="list-style-type: none"> • How is AI changing customer expectations? • How is AI affecting customer purchases and volume? • What concerns do customers have about AI? Are we addressing them? 	
Ecosystem partners with AI-based capabilities	<ul style="list-style-type: none"> • What partnerships and joint ventures are you exploring? • How do you evaluate potential partners on responsible AI principles? 	
Other questions	<ul style="list-style-type: none"> • If you were a competitor, how would you use AI to target our vulnerabilities? • How are we most likely at risk – e.g. commoditization, high cost structure etc.? • What new AI advances will transform our market? • Who advises you on AI? Are you satisfied with the advice? 	

External environment:	Ask management:	Related modules:
Competitors' use of AI		
Incumbents and traditional competitors	<ul style="list-style-type: none"> • Which traditional competitors are our greatest threat? How are they using AI? • How do our investments in AI compare? • How do we differ in using AI to address customer needs and preferences? 	
Digital giants and upstarts	<ul style="list-style-type: none"> • Which digital rivals are our greatest threat? • How are we exploiting our advantages as an incumbent? • Are digital rivals eroding our customer base, market share, profitability or growth? If so, why? • What advantages do our digital competitors have? • Which start-ups are receiving strong support from venture capitalists? Why? 	
Other questions	<ul style="list-style-type: none"> • Who are our most innovative competitors? How do they use AI? • How are you benchmarking our AI activities against our competitors'? • How are our competitors managing fairness, data guardianship, explainability and other AI responsibilities? • Are our competitors creating structural advantages in costs, offerings and services? 	

Internal response:	Ask management:	Related modules:
Creation of AI-supported competitive strategy		
Identification of new strategic opportunities	<ul style="list-style-type: none"> • How do we identify AI-enabled business models and opportunities, their potential value and their risks? • Are we using design thinking? • Have we found ways to transform our industry in our favour? • What reputation risks are opened up by pursuing these opportunities? 	<ul style="list-style-type: none"> • Ethics • Risk • AI governance • Technology • Operating model
Investment in AI	<ul style="list-style-type: none"> • What AI investments are we making to pursue opportunities? • What investments in skills and talent are we making? Are we making them in a way that is consistent with diversity statements in our corporate values? 	<ul style="list-style-type: none"> • People and culture • AI governance
For natural science-based industries (e.g. resources, healthcare):	<ul style="list-style-type: none"> • How are we using AI to make new patentable scientific discoveries? 	

External environment:	Ask management:	Related modules:
Implementation of AI-supported strategy		
Initiation	<ul style="list-style-type: none"> • Are these initiatives well aligned with strategic goals? • How do we judge success? • What is their potential value? Reputation, legal and other risks? How did you evaluate it? • How are we ensuring that our initiatives maintain the public's trust? • What will the initiatives cost? • What companies will supply technology, data and expertise? • Are our plans for pursuing these opportunities consistent with our core values? • What are their legal, human resources and technical requirements? How will they be met? • How will you move from pilot to a full-scale system? 	<ul style="list-style-type: none"> • Ethics • Risk • Technology • People and culture • Brand
Progress	<ul style="list-style-type: none"> • What progress has been made to date in our AI initiatives? How is progress measured? • What are the reasons for delays and cost overruns (if any)? How will they be resolved? • How are you ameliorating project risks? • How are you ensuring our employees and partners across industries comply with responsible AI and other ethics practices? • How are you addressing concerns and resistance from managers and other employees? 	<ul style="list-style-type: none"> • Ethics • Risk • People and culture
Evaluation	<ul style="list-style-type: none"> • What are the performance metrics for this tool beyond efficiency gains? Are they consistent with how we initially planned to measure success? • What value have we received from our initiatives? • Does the value received meet expectations? • Does this tool outperform existing processes? By what metrics? • Have we completely met legal and responsibility requirements? If not, how will we meet them? • How are you sustaining success? • What are the negative outcomes and how are they being mitigated? 	<ul style="list-style-type: none"> • Ethics • Risk
For companies affecting EU citizens:	<ul style="list-style-type: none"> • Is our initiative compliant with GDPR? 	<ul style="list-style-type: none"> • Ethics • Risk • People and culture

Appendix 3: Independent Guide Performance

Use this tool to consider responses to the knowledge assessment and performance review tools. These suggestions are a starting point for brainstorming on responses.

If the board...	Then consider...
Needs more external information	<ul style="list-style-type: none"> • Reading and subscribing to news sources and reports on AI strategies and trends • Attending events on AI strategies and opportunities • Meeting with venture capitalists, customers, trusted advisers and AI technology experts • Setting up fact-finding sessions with academics and experts
Needs more internal information	<ul style="list-style-type: none"> • Requesting reports and updates from the executive team • Meeting with mid-level managers and teams developing competitive AI strategy and systems
Needs more competitor information	<ul style="list-style-type: none"> • Hiring benchmarking services • Encouraging management to focus on competitor analysis
Needs management to focus on strategy and business-model innovation	Encouraging management to: <ul style="list-style-type: none"> • set up design thinking and ideation sessions • study AI strategy innovations by competitors and in industry • focus on developing a culture and organization that supports innovation and experimentation • review executive compensation
Needs management to better align AI activities with strategy	Setting up strategy reviews Encouraging management to: <ul style="list-style-type: none"> • review and reconsider KPIs and metrics, including creating new metrics
Needs management to better understand customers	Encouraging management to: <ul style="list-style-type: none"> • learn more about changing customer expectations and needs through research and design thinking sessions <i>See also: the Customer module</i>
Needs management to speed up progress	Encouraging management to: <ul style="list-style-type: none"> • review performance of suppliers and partners, and consider new ones • increase investments in talent and systems • review systems development and architecture for implementation issues and solutions <i>See also: the Technology module</i>
Needs management to increase benefits from strategic AI initiatives	Encouraging management to: <ul style="list-style-type: none"> • rapidly improve new AI-enabled systems and processes • investigate new business models • consider new joint ventures and partnerships
Needs management to better understand and follow through on risk, compliance and responsibilities of AI	Encouraging management to: <ul style="list-style-type: none"> • work with trusted advisers and legal experts to identify risks, relevant legal issues and ethical concerns • develop an AI governance framework • establish an ethics board • request regular reports on risk and responsibility assurance <i>See also: the Ethics, AI governance and Risk modules</i>