Recent advancements are making artificial intelligence (AI) ripe to disrupt all facets of our world, forcing us to reimagine how we live and work. Within the business sector, AI has long been hyped by developers, but has been slow to integrate into practice. Now, corporate executives are honing in on the strategic value of AI and, as technology and applications have matured, investing in its development and implementation. In particular, such big-name tech giants as IBM, Microsoft and Google are leading the way in developing accessible AI tools that will ultimately change the way companies and their employees do business.

In a previous Kenan Insight, we looked at the unique characteristics of AI — in particular its self-learning capabilities made possible through deep learning techniques — and how these characteristics allow for AI systems to be treated more like "employees" rather than just IT solutions. In this follow-up, we'll explore the elements of a potential strategic framework that allows business executives to realize AI's potential within their organization and lead to better human-AI working relationships. Our observations are based on comprehensive research on this strategic AI framework and its use cases, and will be explored more deeply in an upcoming article.

AI Integration Driven by Organizational Learning

Companies struggle to generate value from AI, partly because it is regularly used as a point technology for specific, siloed operations within the organization (e.g., customer service) rather than as part of a long-term strategy that can lead to sustained business gains. Additionally, AI is often viewed as a way to automate operations, not as a tool to supplement and support human workers. When employed together, human and artificial capitals have the ability to not only create efficiencies within business practices, but also innovate and create new opportunities.

Due to the unique self-learning capability of emerging AI tech-

nology, we recommend taking a learning-centered approach to embrace the link between AI and strategy. Our approach and framework reflect the sentiment that what drives strategy is not machine learning per se, but *organizational* learning.[1] Organizational learning is the source of competitive advantage and the foundation on which an organization can develop capabilities to adapt to shifts in the ever-changing environment. Through this lens, AI is treated as a strategic asset that helps the firm to continually reposition itself in the competitive environment, rather than as a tool for automating processes, cutting costs or modestly increasing the firm's revenue streams. Additionally, AI's ability to work harmoniously with human employees can encourage mutual learning between the two, resulting in a relationship similar to that of a relationship with a teammate or colleague.

Resource-Based View Framework

As the basis of our AI framework, we build upon the resource-based view (RBV), a strategic framework developed throughout the 1980s and 1990s.[2] Within organizational theory literature, this model seeks to better understand how companies achieve sustained success in their respective markets. Specifically, it underscores the internal resources and firm-specific capabilities a company can leverage to achieve a competitive advantage not easily replicable by other firms.

According to RBV, *resources* are defined as a firm's internal assets, both tangible (e.g., cash, machinery, inventory, etc.) and intangible (e.g., leadership, brand, reputation, etc). In knowl-

---

[1] Ransbotham, S., Khodabandeh,S., Kiron, D., Candelon, F., Chu, M. and LaFountain, B. (2020, October 19). *Expanding AI's Impact With Organizational Learning*. Sloan Management Review. https://sloanreview.mit.edu/projects/expanding-ais-impact-with-organizational-learning

[2] Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management, 17* (1): 99–120. https://doi.org/10.1177/014920639101700108

Figure 1: Two learning processes that transform internal resources to strategic core competencies
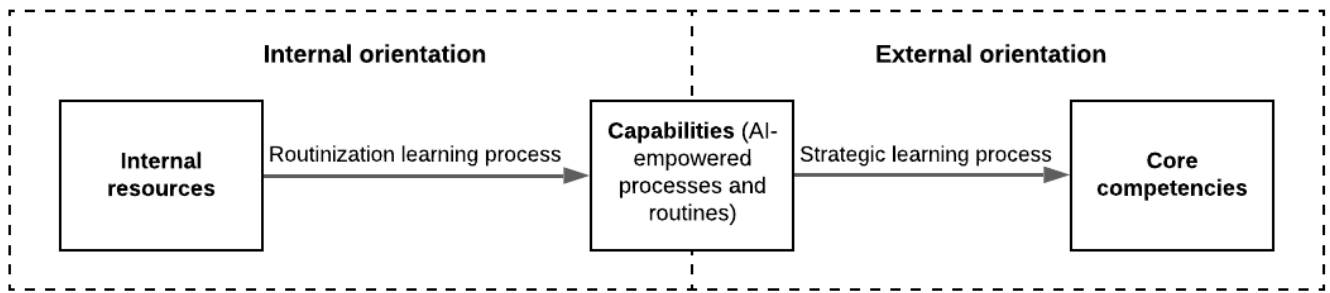
edge-intensive organizations, the most salient resource is information. *Capabilities* are defined as the way in which a firm harnesses its internal resources to conceive and implement external-facing strategies. Capabilities are the means through which a business delivers value to its stakeholders. Over time, firms transform their strategic capabilities into *core competencies*, which are the collective learnings developed across the firm by aligning products and services, technologies, internal capabilities and the competitive market.[3] Core competencies are the foundation of a firm's competitive advantage because they help it differentiate itself from its competitors. Core competencies are built over a long run and they are hard to imitate.

Applying AI & the Elements of Mutual Learning

The RBV model lends itself well to AI integration because it allows for AI to be viewed as a strategic resource that, when coupled with a firm's human capital, can create new, powerful, firm-specific capabilities and competencies. Earlier, we advocated for a "learning-centered approach" to support this type of strategic AI implementation. At the heart of the RBV model are two distinct learning processes that convert resources into capabilities (routinization learning process) and capabilities into core competencies (strategic learning process). When AI is strategically placed within an organization, there is opportunity for humans and AI to learn from one another to develop these new capabilities and competencies that give a firm an added competitive advantage.

Routinization Learning Process: Internal Orientation

The routinization learning process has an internal orientation that seeks to embed and internalize resources in organizational

routines, with a focus on improving organizational capabilities or the "internal value chain." This learning process leads to more effective and efficient organizational processes and routines. Through this form of learning, the organization can combine and exploit internal information resources to develop capabilities; it therefore has a clear link with management of knowledge and know-how.[4]

Through the routinization learning process, AI and human workers work and learn together to arrive at more effective organizational practices and routines. Work practices are the first step in the organization's internalization of resources. A key interim outcome of the routinization process is both human and artificial capitals arriving at a better understanding of problems, the internal context and awareness about the evolving capacity of the other party.

AI capabilities can help optimize current processes and routines. For instance, the customer experience is often fragmented because data and operations relative to providing that experience are housed in different units. AI-empowered learning can transform these disjointed operations to provide a comprehensive and cohesive overview of an individual customer, combined with pieces of data that inform decision-making.

Strategic Learning Process: External Orientation

The strategic learning process has an external orientation. Firms turn outside their organization to explore what's happening in their competitive market, paying particular attention to consumer behavior and demand. The external environment of the organization requires that internal processes and capabili-

---

[3] Hamel, G., & Prahalad, C. K. (1993). Strategy as stretch and leverage. *Harvard Business Review, 71*(2), 75-84.

[4] Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509-533. https://doi.org/10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z

ties be dynamically developed, adjusted and redeveloped to enhance the company's competitive advantage. An organization's ability to respond to evolving opportunities in the competitive environment (core competencies) depends on effective work processes, as capabilities are built over time.[5]

When AI systems are added to the strategic learning process, companies can leverage the symbiotic combination of human and artificial capitals to identify and transform capabilities to core competencies. Take, for example, a company like Ticketmaster, for which recognizing and rewarding legitimate buyers is part of its core competencies. Ticketmaster needs to constantly ensure that real fans – not bots and fraudulent actors – have easy and early access to tickets. The company uses machine learning to construct a holistic view of buyers' behaviors and facilitate legitimate buyers' access.[6] Resellers respond by trying to figure out how the algorithm works and adapt their strategy accordingly — a strategic threat to the integrity of the platform and its offering. Ticketmaster, in turn, uses human capital to scan the market and identify such changes, providing a feedback loop that helps retrain AI algorithms to combat irregularities.[7]

Together, the two learning processes connect an organization's internal capacities with its place in the external environment, enabling it to formulate a dynamic competitive advantage based on both. AI's self-learning contributes to this process to the extent that it translates to mutual learning (between AI

and knowledge workers). As a result, the key to integrating AI into these learning processes is to treat artificial capitals like a strategic resource capable of supporting and augmenting the human worker.

So What? Implications for Practice

AI is transforming business by its impact on both internal operations and the delivery of external services. As the technology continues to advance and integrate, it will be critical for business executives to prepare their workforces to take advantage of all of AI's strategic capabilities. Rather than perpetuating the news headlines of the evils of automation, though, organizations should encourage their human workers to work with and learn from AI systems. In turn, AI systems will learn from their human counterparts to become better resources. This concept of mutual learning between AI and human workers is where the opportunity lies for successful AI integration. Firms that do this successfully will have a competitive advantage.

To build up the human-AI relationship, executives must invest in their workforce's AI literacy and promote an AI culture. Firms will need to have an appropriate level of understanding and skill in AI to be effective in leveraging it as an integral facet of their strategy. Additionally, a culture shift from viewing AI as a technology tool to incorporating it into the fabric of operations is critical to achieving accelerated differentiated strategic value from it.

To build such AI literacy and culture, firms will need to get the commitment of multiple stakeholders at all levels of the organization, redesign processes to integrate the learning power of AI, and ultimately treat AI as an employee and teammate. We hope this conversation serves as the start of an important dialogue around successfully integrating human and AI working relationships.

[5] Stalk, G., Evans, P., & Shulman, L. E. (1992). Competing on capabilities: The new rules of corporate strategy. *Harvard Business Review, 70*(2), 57-69.

[6] Joshi, A., & Wade, M. (2020). *The building blocks of an AI strategy*. MIT Sloan Review, Cambridge, MA. https://sloanreview.mit.edu/article/the-building-blocks-of-an-ai-strategy/

[7] Pymnts. (2019, December 2). *How Ticketmaster Rewards Fans And Bars Fraudsters*. Pymnts.com. https://www.pymnts.com/fraud-prevention/2019/how-ticketmaster-rewards-fans-bars-fraudsters-security/.

OUR EXPERTS

Chelsea Donahue
Rethinc. Labs

Mohammad Hossein Jarrahi
UNC School of Information and Library Science

Chris Wicher
IBM

RESEARCH

Toward understanding the impact of artificial intelligence on labor

Seven Technologies Remaking The World

Could AI Be Your Next Employee of the Month?

Robots, Remote Work and Regional Inequality

The Unchaining of Supply Chains: Dismantling Disruption and Risk in the Post-COVID World

RESEARCH (CONT.)

Where Are We Going? Lasting Changes to Working, Living and Traveling in a Post-COVID World

More Research at
kenaninstitute.unc.edu/research

RESOURCES

April 7 - Webinar: Rethinc. Labs — Fairness in Justice: Use of Machine Learning in Pre-trial Detention