Can AI Help You Strategise Better?

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Machine learning algorithms can uncover intricate patterns in big data and enable managers to strategise with more confidence.

Corporate decisions on M&A, alliances, divestiture and diversification are typically made under significant uncertainty and daunting complexity. It is therefore important to have a good strategy when contemplating such decisions so as to overcome that complexity and learn as much as possible from the signals that result from implementing the strategy. Without good strategy, as many now recognise, decisions **more often than not** lead to disappointing or even downright disastrous consequences.

We think artificial intelligence can play a useful role here. But let's dissect the problem first. To begin with, strategies (and even business models) are really theories, or coherent stories about how the world works. Put simply, a business strategy is a theory about how to make money. Second, all theories are ultimately inductive; they arise from attempts to explain patterns in data.

Putting these two ideas together gives us a third: Use machine learning – the latest and most successful form of artificial intelligence – to detect patterns in data and determine the ones that can help formulate more informed strategies.

Managers may well be justified in believing their firms to be unique, but this does not make organisations immune to broader patterns and forces in the industry. Machine-learning-based analysis of large samples of aggregate industry data could offer a bird's eye view of broader patterns that individual managers may never discern if they relied only on their direct experiences alone. Fortunately, large amounts of data of relevance to strategists – related to the likes of M&A and alliance transactions, patenting and employee reviews – are available today.

We show how this could work in a recent **paper** published in the *Strategic Management Journal*. Specifically, we offer a template for how strategists can uncover new theories in traditional strategy domains such as corporate alliances by way of big data and algorithms, using an approach known as **algorithm-supported induction**.

Business model innovation in the private equity industry

Multi-partner corporate alliances, or deal syndicates, are central to the private equity (PE) industry. A deal syndicate comprising a PE firm, institutional investors (e.g. insurance companies and pension funds), banks and corporate firms jointly purchase companies, investing capital and expertise. Several deal syndicates constitute the alliance portfolio of a PE firm.

Something interesting happened about a decade ago in this industry: A relatively novel business practice of "add-on deals" began to take off. In these deals, a PE firm acquires a company and merges it with a related firm in its portfolio of companies. Contrast this with the more established model of leveraged buyouts, in which a PE firm borrows money to acquire a standalone company.

The question we investigated was a simple one: Would adopting the new practice of add-on deals require changing the kind of alliance portfolios that PE firms used?

We studied around 60,000 global PE deals transacted by over 4,500 PE firms from 1990 to 2016. We split the sample into two parts. Our machine learning algorithms detected in the first sample two robust patterns about add-on deal adoption: First, add-on deals very often feature the participation of a new type of co-investor, namely corporate firms with expertise in add-on deals; second, these co-investors do not belong to the pool of existing corporate firms that participate in leveraged buyouts. These are only correlations, but they are robust and extremely unlikely to have been due to just random errors.

What might account for these patterns? This is where human creativity comes in. We believed that since deal syndicates needed new corporate partners to pursue add-on deals, PE firms that already had lots of partners, or already worked with firms that could potentially compete with the desired new corporate partners, would be slow to adopt add-on deals.

We tested these conjectures in the second half of our data and found strong support for them. In short, we learnt that a firm's existing alliance portfolios can impede the adoption of new business practices that are themselves alliance-intensive. This suggests a dark side to partnerships.

Strategise like a theorist

Strategists could draw valuable insights about partner selection from our study. Firms need a new kind of partner for new kinds of practices in alliance-intensive industries, and strategists should think carefully about their firm's capacity limits and managing rivalries among its existing partners. Recruiting expertise could perhaps be an alternative to syndication.

These are theories that still need to be validated, through pilot projects for instance. But they are based on robust patterns in aggregate data, and therefore more likely to be correct than something based on an individual manager's limited and idiosyncratic experiences.

Our approach has other possible applications even within the PE industry. For instance, given the extensive data we have on syndicated partnerships, we can use algorithmic induction to explain why certain syndicate partnerships are more prevalent than others. This is no different from asking why certain acquisitions materialise and others do not.

The patterns found by machine learning are only correlational. But with careful thinking about cause and effect, a strategist should be able to draw

useful conclusions about possible explanations – i.e. build a theory – which in turn can lead to a robust strategy. As the psychologist Kurt Lewin famously said: "There is nothing more practical than a good theory".

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https://knowledge.insead.edu/strategy/can-ai-help-you-strategise-better

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About the research

"Do Alliance portfolios encourage or impede new business practice adoption? Theory and evidence from the private equity industry" is published in *Strategic Management Journal*.

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