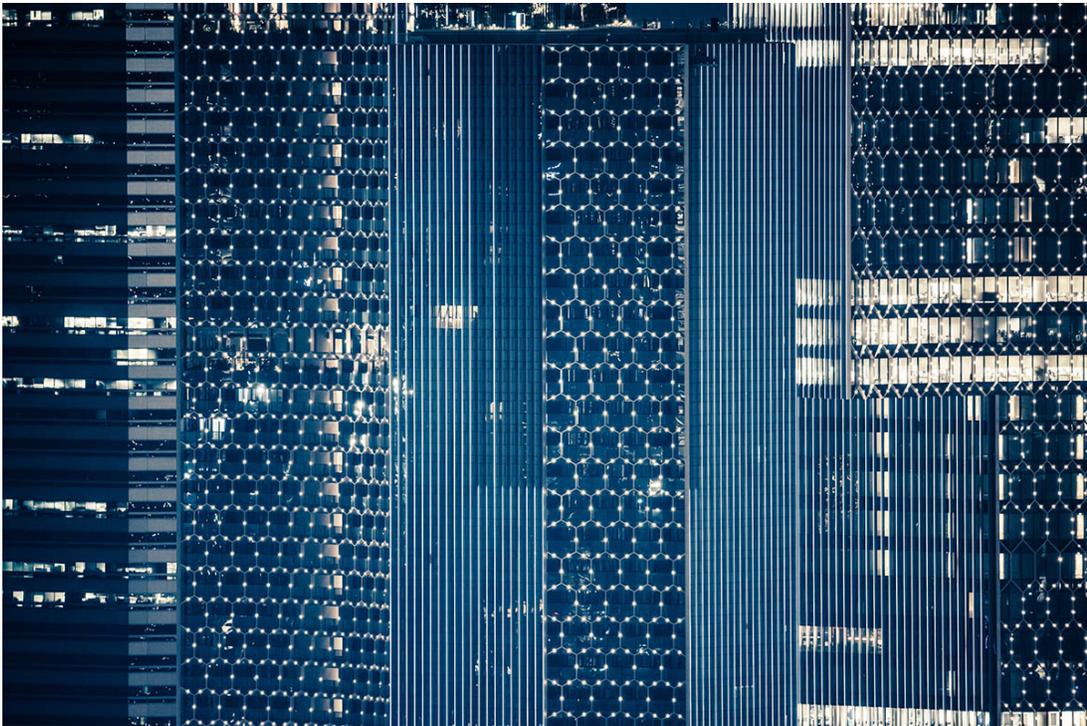


TECHNOLOGY

Rebuilding a Company with Artificial Intelligence

by Al Naqvi and J. Mark Munoz



Implementing AI is an important undertaking for organizations across all industries.

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The fallacy that artificial intelligence (AI) is either a fleeting fad or a fanciful extension of the digital era must be demolished quickly. AI has already been reconfiguring business processes and systems over the recent years, and will continue to transform businesses

over the coming decades. For many firms, artificial intelligence has been a threat as well as an opportunity. In organizations, much like a building in need of repair, some firms opt to just do minor fix up work, others do substantial renovation, and others decide to completely rebuild their AI architecture in order to better serve future needs.

Cracks in the foundation

In several instances, what firms need to repair is critical and time is running out. As the AI revolution unfolds, there is a shift in the foundation and structural revisions are necessary. There are five areas that need attention:

1. **Change in data utilization** – The digital revolution was about developing systems for data – that is where systems were designed to collect, organize, and process data. The machine learning revolution is about designing systems from data.¹ Data becomes the raw material over which algorithms function as learning machines.
2. **Smarter machines** - Since the inception of the human civilization and when humans developed basic machines (e.g. pulley, plane, levers) until laptops processed and churned out data, and machines flew us across oceans, the basic concept of machine stayed the same: it was a tool under total human control. Machines are no longer thoughtless artifacts subservient to human commands. Thinking machines can accumulate experience, learn, adapt, and function autonomously. Never before have humans experienced another intelligent species or machines with this type of intelligence. The current era is on the cusp of a major change and there is no history to understand its implications.
3. **Evolving work processes** - The inclusion of thinking machines in the workplace, and in the workforce, is altering the fundamental frameworks in which products are created and office operations take place. For instance, the problem of what work will be performed by machines and what need to be performed by humans must be analyzed in all firms. Machines that hire and fire, machines that manage performance, machines that identify morale problems, machines that audit work, machines that determine bonuses, machines that manage talent – are mere examples of tools at hand and part of contemporary work design and process.

4. **Techcroachment**² - Tech firms now have the ability to encroach on traditional businesses. The capability of non-native firms – i.e. companies from the tech sector – to compete in traditional sectors implies that conventional channels are no longer applicable. Apple and Facebook can enter financial services, Google can enter healthcare, Tesla can make cars, and Amazon can sell groceries (ie, Wholefoods). With reference to Michael Porter’s Five Forces model, this is an environment where New Entrants and Threats of Substitution constantly emerge and are on steroids.
5. **Scalable Invincibility**² - Competitors fight for advantage. Imagine a world where advantage can be created once and then it simply multiplies and scales in such that it eliminates the need for another product or service. Intelligence has become unconquerable and on a grand scale. Google is an AI company. Once the search engine gained scalability, every interaction, every piece of data, every new information only helped it become smarter. If IBM Watson and H&R Block can create a tax platform then the entire United States will only need one tax filing platform – and that platform will become smarter with every interaction. This type of mega scaling is only possible with AI.

Rebuilding for success

Given this major shift in the operational foundation, firms cannot merely do minor fix-ups or superficial makeovers, they need to completely rebuild their organizations to manage the disruptive changes. There are three blueprints for strategic reconstruction.

1. Use the “Gone Neural” model² - AI can help companies connect with their customers to an extreme point of what we call “Gone Neural.” In this radical concept, everything a firm does is viewed as an extension of customer’s cognitive realities as expressed in the customer’s behavior and actions. Customers influence all decisions made in a firm by extending their cognitive maps into the firm’s peripheral boundary (input) and expecting a package of gratifying value (output) from the firm. This cycle forms a co-evolutionary bond whereby customers and firms develop each other’s cognitive functions and set expectations. Examples of the “Gone Neural” models include firms that are capturing customer interaction, operationalizing it, and using recommendation engines to optimize customer relationships.

2. Reconfigure the business model - Don't just add AI as another technology. Instead build a truly transformational business model around AI. Regardless of industry, configure the firm's operations as an AI business. Who would have thought that a 10,000 BC old industry of agriculture will be reinvented with AI? But, with companies like John Deere and ADM, AI has become a core driver of revolutionary strategies.
3. Operationalize AI - Incorporate AI in all departmental functions within the firm. This means operationalizing AI in areas such as Finance, Supply Chain, Marketing, HR, Operations, and other corporate units – to ensure that a consistent and integrated strategy is pursued. Similar to the case of a building with a damaged foundation on one side, fixing AI in just one area, without considering its impact on the overall stability of the edifice will be an exercise of futility. Organizations need a holistic AI strategy to succeed (Munoz and Naqvi, 2018).

Maintaining structural integrity

Preparation is key. AI is a revolution of its own – not an extension of previous digital revolution - and many companies and executives are not ready for it. Many are approaching it on an experimental basis. Some are experimenting with Robotic Process Automation, others with chatbots. Some are trialing a data science project while others are testing robots. But few are cognizant of AI's true potential. They are not recognizing that their entire business models, competitive structures, and strategic dynamics have changed.

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End unproductive experimentation. Executives need to make a conscious decision on the renewal of their AI strategy (Naqvi & Munoz, 2018). Serious strategy must replace the weed-like proliferation of AI technologies. As children collect toys, many companies are

piling up AI technologies. In many cases, executives lack the basic strategy training on how to develop and design an enterprise level strategic framework for AI. In addition, several opportunistic vendors and service providers are invading poorly informed firms.

The C-Suite and Board of Directors must proactively lead the AI strategic planning efforts. AI is today what Internet was in 1996. At that time, many executives thought that the Internet was nothing more than replacing paper brochures with websites. Some executives did ROI studies to develop capital authorization requests for bringing in email (i.e., email compared to snail mail costs as savings). It is often extremely hard for companies to connect the dots when rapid and major technological changes take place. And even when they do connect the dots, they may not get things right. For example, while Amazon and Netflix emerged with powerful business models, it is not that Sears, Macy's, Blockbuster Video and other retailers did not bring in the technology. They did. But while it was not too little, it was either too late or too loose. There was no disciplined link between technology and business strategy.

Capitalize on your genuine strengths. Contrary to the common view that a brick and mortar state cost many companies their competitive advantage, there are companies that get their strategy and rebuilding efforts right. Walmart remains a technology marvel despite being a brick and mortar company. It has emerged as “the other tech company.”

Many companies are still struggling to find their real tech identity and operational bearings. Wherever these firms are in their business cycle, whatever the industry, the reality is that there are major cracks in the digital foundation that need immediate attention. A poorly planned, hastily executed AI fix would not solve the problem – a strategic and holistic organizational reconstruction is necessary.

► References

1. This quote is attributed to Al Naqvi: “We built a system for data. Now we build systems from data” and is used in AIAI brochures and catalogues. ↩

2. The terms (Techcroachment, Invincibility Property, and Gone Neural) are proprietary AIAI terms used in AIAI courses/models that have been developed by Al Naqvi. ↩ ↩² ↩³



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