Reshaping a Business Around AI: The Machine First™ Approach to Digital Transformation

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We have witnessed in the past decade changes in the digital world that have had far-reaching consequences for both businesses and individuals. Companies that have thrived during these revolutionary times have been able to ride the technology wave. They've adopted cloud, mobile, automation, and artificial intelligence (AI), creating a competitive edge for themselves by using them to develop new, interactive, and immersive customer experiences and radically new business models. Amazon, Netflix, Apple, and companies that have followed their lead have, and are demonstrating, what it means to re-think the way business is conducted, applying new technologies as a starting point and a foundation, not as a bolt-on or an afterthought.

As this universal digital transformation proceeds and picks up steam, we believe there needs to be both a change in the way we think about embedding technology in our businesses and a structured way of doing so. To provide best-in-class services to customers and to guide companies toward growth

and perpetual transformation, we believe a Machine First philosophy is essential. MFDM™ (Machine First Delivery Model) is the vehicle we choose for our customers to drive their transformation and growth strategy.

In this article, I will explain this concept at a high level and discuss its far-reaching impacts. Finally, I will examine why a Machine First approach requires a different mindset to develop digital processes that can continually get smarter.

Machine First: The Basics

All digital transformations should begin by examining the digital ecosystems in which a company operates, as the previous article pointed out. Then, it requires a structured approach to generate real value from these technologies.

As we introduced the Machine First philosophy, the first mindset change we implemented was giving the first right of refusal to technology. Few companies exemplify this concept of adopting a Machine First approach to digital transformation better than Netflix. Netflix's first digital business model was taking customer orders for movies

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on the Netflix website. By booking orders online and distributing them on DVDs through the mail, Netflix changed the way people rented videos. When Netflix shifted its business model in 2007 to begin streaming videos over the internet, its AI-driven recommendation engine became its key tool. That engine would be behind its third business model transformation about five years later as Netflix effectively automated all its manual work. Its Machine First approach transformed the entertainment industry as powerhouses such as Disney, Comcast, and Amazon have all launched (or have announced) highly-competitive streaming offerings.

But the entertainment industry is hardly the only sector disrupted and permanently altered by digital transformation. The Machine First approach adopted by these entertainment giants has been deployed in many other sectors, with huge effects.

Four Big Impacts of a Machine First Approach

From TCS research and client work worldwide, we have found that digital transformations that follow a Machine First approach lead to four major improvements across industries and sectors:

1 ### Create a Superior Customer Experience

Customers expect every point of engagement with a company to be simple, engrossing, and personalized. The AI-driven recommendation engines of Netflix, Amazon, Spotify, and other online companies track what customers purchased in the past. Based on similar customers' tastes, they can provide guidance on what to purchase next. In the 1990s, that kind of institutional memory far surpassed what even the most intuitive and informed Blockbuster Entertainment store employee could offer, or, for that matter, any store employee at any retailer anywhere. AI enabled Netflix to

gain a clear competitive advantage over the video stores, ultimately displacing them and leading to their extinction.

Other companies have digitally transformed their customer experience to help employees focus on their biggest customers. That's what happened at one of the world's largest investment companies. It developed robo-advisers to free up its financial advisers to work with the firm's most profitable customers (i.e., those with the highest net worth). The robo-advisers are based on software using AI and machine learning technology to offer automated and personalized investment advice to customers.
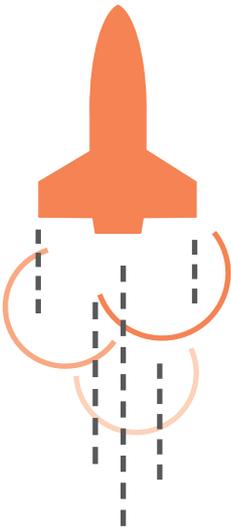
2 **Enable Business Model Innovation and Entry into New Businesses**

The Machine First approach can enable enterprises to launch new business models to generate new revenue streams.

When a company collects digital data (especially customer data) that might be valuable to other entities, the data can provide an entry into new businesses. For example, online real estate information providers like Zillow and Opendoor Labs (which enable homebuyers to see properties for sale on mobile apps) have been capitalizing on the information they possess, and smart algorithms, to expand their businesses into financing and other aspects of home buying, addressing the many pain points people experience when buying and selling homes.
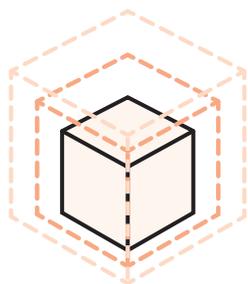
3 Enhance Business Outcomes

The approach and the mindset of Machine First help to establish limitless boundaries to enterprises to scale and grow exponentially.

Consider what Dubai-based retail giant Landmark Group did recently. The company took a Machine First approach to reinvent its supply and procurement activities. Its key goals were to meet compliance deadlines and curb excessive procurement spending. The company automated key tasks across its sourcing-to-onboarding process. The initiative has increased supplier visibility and enabled smarter vendor negotiations.

4 Empower the Workforce

Automating everything that can be automated does not mean eliminating every job that can be eliminated. It involves turning over manual tasks to software and then identifying the new jobs that software cannot presently do. Those new jobs will rely on technologies such as AI to empower employees with recommendations to make better decisions.

Similarly, Cargotec's mobile service technicians, who perform preventive maintenance and repairs on their cargo-moving equipment, had their response times affected since they were using paper-based systems to service and track their field work at customers' locations in Sweden and remote parts of Finland. They were dependent on back office staff, whom they contacted by cell phone to receive work order requests,

update customer records, and order parts. Cargotec implemented a system that gave technicians access to data anytime, anywhere and the ability to order parts, manage inventory, report time and costs, generate reports, and update customer records, using their laptops.

Some companies may see a net increase in jobs by taking this Machine First approach to digital transformation. For instance, between 2006 (the year before Netflix launched its streaming service, when its annual revenue was $1.2 billion) and 2017 (when revenue was $11.7 billion), the company's workforce increased more than four times.[14] In other words, automating to the max, driving exponential revenue growth, can help a company increase employment over time. We discuss this in another article in this edition here.[15]

Critical to making all this happen is digital data. No matter how much data companies are collecting today, they will need to acquire more tomorrow, assimilating it quickly and incisively. As every big company turns more and more data into actionable intelligence, it will gain new business and customer insights.

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[14] Netflix annual reports for 2006 and 2017, accessed April 15, 2019. The company had 5,400 full-time employees in 2017, and 1,300 in 2006. https://www.netflixinvestor.com/financials/sec-filings/default.aspx

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As more manual activities are automated and driven by AI decision making, software will get smarter and become more capable of driving marketing, sales, distribution, production, finance, and other key business functions. *This creates a virtuous circle: As the machines get smarter, they allow employees to deliver higher-order work, adding ever more value to the enterprise.*

These are four of the largest impacts we've seen among companies that have transformed their businesses successfully with a Machine First digital approach. But I would be remiss if I didn't mention another key to their success: designing their information systems so that they can continually improve and learn automatically, getting more intelligent in the process.

Turning Digital Processes into *Intelligent* Digital Processes

Establishing online connections with customers, suppliers, and other parties in your digital ecosystem is only a first step. You will also need to make your online business processes *intelligent*. This means that they can create personalized engagement, provide recommendations, and accelerate straight-through processing with little, if any, human intervention.

This is where artificial intelligence, machine learning, and other technologies come into play.

This is not what traditional systems development was about. Taking a business process and implementing software to improve it, whether by developing custom code or installing an enterprise system, has produced significant improvements in cost, quality, time to market, and other key metrics for decades.

Established companies today can't do without the huge investments in systems they've made over the last 50 years.

However, those systems are static in their design and embed a 'point-in-time' intelligence into a company's business processes. The software captures the best thinking at the moment it was developed on how to automate a business process. That is not enough for today's business environment.

Instead, with a Machine First approach, a company has the opportunity to automate processes and products in ways that they improve themselves with little, if any, human intervention.

This is possible because such software applies machine learning to keep improving from their experience captured as data.

The algorithms that drive the personalization engines of Amazon, Spotify and other companies automatically improve themselves based on what people are actually buying. Machine learning technologies improve the software to get sharper in their recommendations—i.e., to offer better ones.

As a result, companies can shift their software from being highly intelligent at one point in time—the moment the system went live—to software that, on its own, continuously improves. Such ever-intelligent software is another key component of Machine First approaches to digital transformation.

The Never-Ending Transformation of Your Business

Companies that try to preserve age-old routines and tinker on the margins will find that those methods are not nearly enough. Companies that have benefitted from a Machine First approach include a leading airline that improved its Net Promoter Score by 4 points, and a leading retailer that increased online sales 29% in peak season.

In a world of rapid digitization, the companies that lead their digital ecosystems will be those that automate to the max, use AI to do that work, and create new, more stimulating jobs that only people can fill. They'll also use AI and machine learning technologies to continue improving the work that their robots and people do, both separately and together.

Thanks to these new, intelligent technologies, business opportunities today—for improved customer experiences, business model innovation, enhanced outcomes, and an empowered workforce—are practically limitless in all industries. But seizing them will require a different, new, and more holistic approach to digital transformation.

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