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Driving an Effective Digital Transformation in Pharma

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Introduction

The pharmaceutical industry has been relatively slow to digitalize, although Covid-19 has served to accelerate this process in recent months, expediting, for example, the digitalization of sales and marketing activities. This is indeed a welcome change. However, digitalization alone won't suffice to keep pharmaceutical companies thriving in the coming years. Instead, business leaders must focus on creating a real digital transformation.

To do so, executives will need a strong understanding of digital transformation and how it differs from digitalization. Effecting a successful digital transformation in a business as large as a pharmaceuticals company also requires a clear vision and strong leadership and organization.

The undertaking may be large, but as giant digital incumbents like Google and Amazon enter the market, and new, more personalized therapies and technologies threaten to replace traditional molecules, successful digital transformation is perhaps the only way for pharmaceutical companies to avoid redundancy.

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Digitalization vs. Digital Transformation

Business leaders in the pharmaceutical industry often confuse digitalization and digital transformation, seeing as synonymous these two very different concepts.

Digitalization means improving existing business processes with the aid of new technologies. Switching from paper to digital record-keeping is one example. Importantly, digitalization is often accompanied by automation, whereby machines and artificial intelligence carry out processes with little to no human intervention. Digitalization can result in both important productivity increases and cost reductions, but the processes themselves remain largely unchanged.

Digital transformation, on the other hand, involves critically examining business processes from a customer-centric perspective and leveraging new technology to radically change and improve the overall customer experience. Intelligent chatbots with access to customer information, for example, speed up customer service and reduce costs in human resources. New information and processes can be added as required, without the need to retrain or rehire. Digital transformation prepares businesses for an unsure and shifting future, safeguarding against changes in product and production and positioning them as disruptors rather than disruptees.

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How big businesses **are using digital transformation to get ahead**

How big businesses are using digital transformation to get ahead

Big businesses face their own set of challenges when it comes to digital transformation. Pharmaceutical companies should look to their counterparts in other industries for inspiration and guidance.

UPS serves as one example of a large company undergoing a successful digital transformation. The company hired its first Chief Transformation Officer, Scott Price (now President of UPS International), in 2017. In an interview with Innovation Leader, Price explains some of the challenges he faced trying to transform a large company, one with thousands of employees, hundreds of systems and processes and a longstanding culture.

Effecting a successful digital transformation in a business as large as a pharmaceuticals company also requires a clear vision and strong leadership and organization.

First, Price warns against confusing transformation with strategy. Transformation is the means to an end, but that end has to be clearly defined. For UPS, the path forward was built around four key pillars, including enhanced services for SMBs and growth in B2B and B2C sectors. These pillars served to keep UPS' compass pointed in the right direction.

Second, there is no cookie-cutter solution to digital transformation. UPS' approach included reducing costs to reinvest in technology, which is key to any such transformation. However, Price also discusses having to identify the skills necessary for future employees and communicating them to existing ones.

Likewise, there are different ways to oversee transformation. "One is the activist, mercenary option," explains Price. "You bring in a Chief Transformation Officer knowing they have an expiration date. They know they're going to have no friends, but they get the deal done. That's not how UPS operates. The second is how I was brought in. … You have to collaborate and you have to use persuasion. The third option is less effective. You let each one of the functions do it themselves. In my experience, that's non-transformational. It generally doesn't get you to top quartile performance, which was one of our objectives."

Finally, transformation should be seen as an ongoing, independent process. "If it's in a department like Finance, it is not seen as impartial." That impartiality helps transformation leaders make objective decisions, but also facilitates collaboration with others departments and reduces the chance of infighting. Price closes the interview by emphasizing the importance of ongoing transformation: "Transformation never ends. Technology is always developing. New entrants are disrupting. Every company needs to stay on its toes."

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Commonwealth Bank of Australia is another example. The company started its digital transformation by planning to invest $5 billion by 2024, with the goal of becoming a digital leader not just among banks but on a global cross-industrial scale.

True to digital transformation's focus on the customer, Commonwealth's new mobile app sits at the heart of its strategy. It is "customizable like an iPhone and personalized like Netflix recommendations," says Pete Steele, Chief Digital Officer. (Commonwealth obviously knew where to look for digital inspiration.)

Likewise, the platform leverages sophisticated AI to respond to, even predict, customer needs. A 'Customer Engagement Engine' employs 200 machine learning models across 157 billion data points to learn from user behavior and send helpful, personalized messages to users to help them, for example, avoid late fees on credit card payments or being overdrawn. Rather than simply replacing processes with a digital successor, Commonwealth is using technology to build new ways of engaging with its customers.

"We are moving quickly to build, develop, partner and invest in new services we can integrate into the CommBank app," explains CommBack CEO Matt Comyn. "Our ambition is that our 'For You' personalisation function will bring together internal and external services and provide a single place for our customers to receive personalised service, benefits and offers."

Like UPS, Commonwealth Bank sees transformation as an ever-moving target, and banking as one of the threads common to its customers' diverse needs and desires.

"It's a given that every customer wants their banking to be safe, secure, easy and convenient. But they also want digital tools to help them plan and budget, set goals and achieve them, predict and manage their bills, and achieve their dreams of owning a home, running a business or securing their retirement."

As a result of its strategy, CommBank has already seen increases in app engagement and transactions. More than 6.3 million customers use the CommBank app, with 6.95 million log-ins per day. App transactions equated to roughly $1 billion per day, and over 6 billion personalized messages were sent to customers in 2020.

Creating a digital transformation in a business as big as a pharmaceuticals company is certainly possible. But for a variety of reasons, that doesn't seem to be happening as often as it should.

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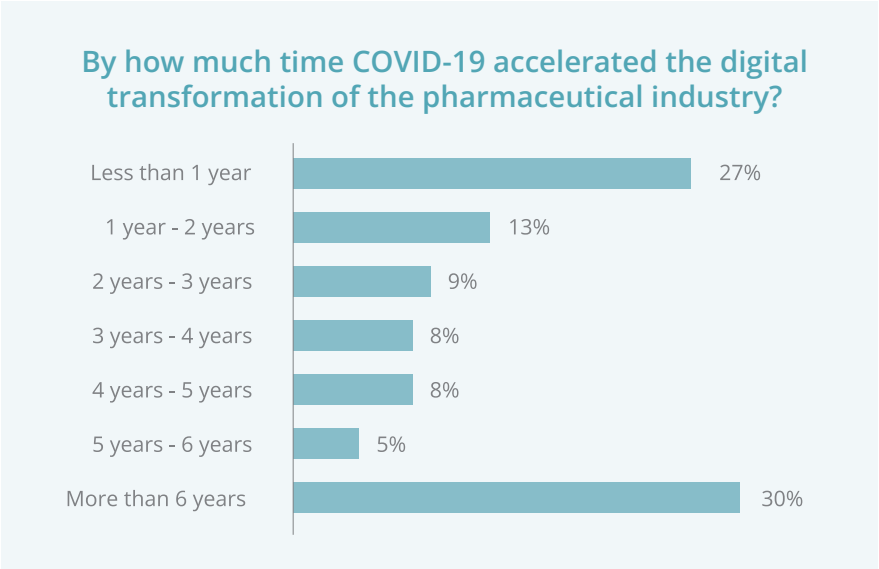
Impact of COVID-19 on the digitization of the pharma industry

The COVID-19 pandemic impacted the pharmaceutical industry in many ways including delaying routine treatments, straining healthcare budgets, derailing drug development for non-COVID related diseases, causing supply chain disruptions, and impacting marketing and sales rep activity. Therefore, the pharmaceutical industry was forced to adopt various digital technologies to overcome the challenges posed by the pandemic.

Verdict has conducted a poll to assess by how much time the COVID-19 pandemic has accelerated the digital transformation of the pharmaceutical industry.



The poll suggests that COVID-19 has fast-forwarded digital transformation of the pharma industry by more than six years, as opined by a majority 30% of the respondents.

However, from my experience in working with most of the mid-sized and large pharmaceutical companies, I would argue that the term 'digital transformation' is being erroneously applied and that these results indicate that the companies have speeded up their digitization, rather than digital transformation.

Real digital transformation in the pharmaceutical industry is crucial for improved patient care, cost-effectiveness, greater transparency, improved production, and drug development and as an industry we must move on from digitization to digital transformation which are very different, although related concepts.

Source: https://www.pharmaceutical-technology.com/news/covid-19-accelerated-digital-transformation-of-the-pharma-industry-by-five-years-poll/#:~:text=Digital%20transformation%20of%20the%20pharma%20industry%20has%20been%20accelerated%20by,by%20fTheir%20to%20five%20years.

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Where pharma is and where it should be

The pharmaceutical industry, as a whole, isn't where it should be. Digitalization has been relatively slow. A 2019 study by Simon-Kucher, for example, showed that "59% of pharma, medtech, and consumer healthcare companies still lack a fully defined digital strategy."

Of course, Covid-19 served to accelerate digital innovation in the pharmaceutical industry. Based on a study by Verdict, roughly one third of respondents believe Covid-19 accelerated the digital transformation of the pharmaceutical industry by more than 6 years. Still, a Pharma Manufacturing survey of pharma leaders showed that only 31% considered digitization a leading priority in upgrading manufacturing facilities. 50% of the respondents said their company was still "at the starting gate" of its digital transformation. Likewise, only 10% foresee great benefits to R&D, only 24% to supply chain management, and a mere 2.5% to equipment maintenance—all areas where other industries are seeing phenomenal returns on digital investments.

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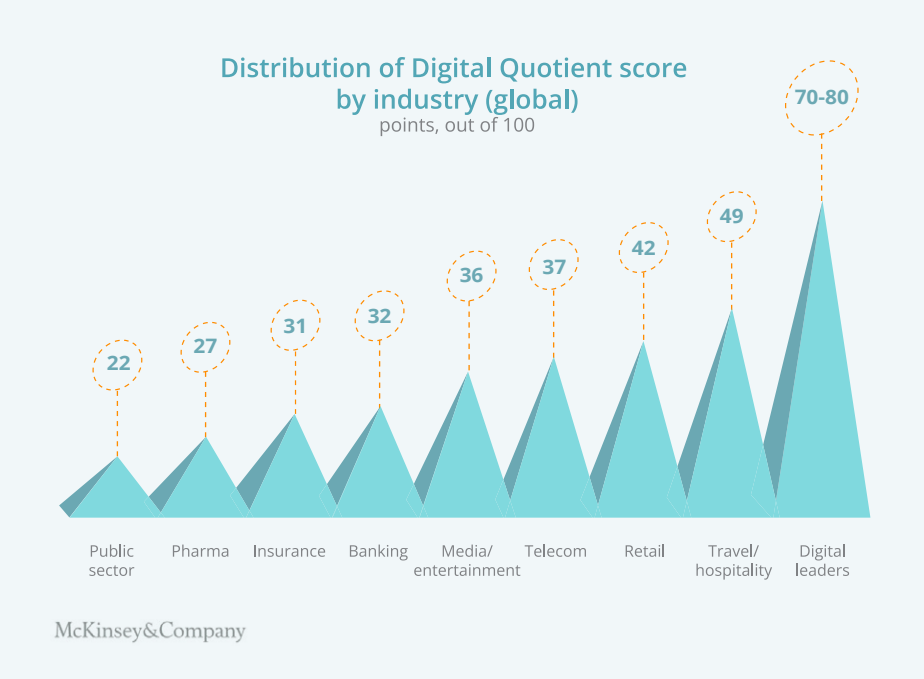
Plus, pharma as a whole is playing catchup. A 2016 report from McKinsey paints a grim picture of the pharmaceutical industry relative to other global industries. Other than the public sector, pharma shows the least digital maturity compared to insurance, banking, media and entertainment, telecom, retail, and travel and hospitality. Covid-19 may have helped jumpstart the digital transformation in pharmaceuticals—but it was no less transformative for banking and retail.



Of course, it's not all doom and gloom. Covid-19 pushed things along. The well-funded global effort to rapidly produce a viable, scalable vaccine led to digital innovations in research and development (R&D), production, and distribution. Advances were also seen in clinical trials. According to Global Data's State of the Biopharmaceutical Industry 2021 report, more than 1000 clinical trials were disrupted as a result of Covid-19 but were later resurrected thanks to innovations in remote patient monitoring (RPM) and virtual trials.

Nonetheless, pharma as an industry is falling behind. Companies cannot approach digital transformation with the same complacency as they have digitalization, or the consequences could be severe.

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Importance of Digital Transformation in Pharma Industry

Digital transformation, more than simple digitization, is critical to ensure continued growth for pharma companies in an increasingly competitive digital world. In addition to revenue growth and new value shift models future proofing the company if done well, there are some key benefits for pharma.

- Understanding the customer more in order to provide more value and engagement
- Providing more value and value-add customization to customers
- Ability to reach customers within regulatory environment in a compliant way
- Tracking metrics and performance

Transformation is the means to an end, but that end has to be clearly defined.

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Where AI fits in a Digital transformation

Artificial intelligence (AI), or the ability for computer programs to learn, predict, and make informed decisions, is transforming every sector of the business landscape. It has the potential to dramatically increase value to shareholders and stakeholders for businesses that understand how, when, and why to implement it. Indeed, AI represents as fundamental an opportunity for change in business operations as did previous industrial and technological revolutions.

But just as past business leaders had to learn to leverage first steam power and then electricity, today's executives and managers must master the fundamentals of AI to drive truly valuable, long-lasting, and adaptive changes to their businesses.

At the moment, only a very small number of organizations have been able to use AI to its full potential. Traditional businesses, including many of those in the pharma space, are still struggling to see where AI fits into a successful digital transformation (DX). The problem is less a question of technical knowledge, which many leaders have, and more one of strategy, implementation, and culture.

Let's contrast traditional businesses to AI-powered ones, and examine the characteristics of companies that have successfully digitally transformed using AI, and discusses how firms can create shareholder (and stakeholder) value through AI.

Creating a digital transformation in a business as big as a pharmaceuticals company is certainly possible. But for a variety of reasons, that doesn't seem to be happening as often as it should.

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Traditional business versus AI-powered business

In every industry, AI-powered businesses are beating out traditional businesses that have failed to adapt.

Compare Amazon to Barnes & Noble, for example. In 1996, Amazon boasted just $16 million in sales compared to Barnes & Noble's $2 billion. Today, Amazon has a market cap of around $1 trillion, while Barnes & Noble sits at $475 million—several orders of magnitude smaller. Why? Amazon has openly said that one of its greatest drivers of success is the sophistication of its AI algorithms, which understand customers to an unprecedented degree and, more importantly, can provide targeted, data-informed recommendations to millions of customers per second.

Transformation is the means to an end, but that end has to be clearly defined.

Tesla provides another example. The automotive industry has been dominated by traditional business players for decades. Today, Tesla is worth more than the next six automotive companies—combined. AI plays another critical role here. Tesla is not merely a car production company, it is an artificial intelligence company offering the dream of autonomous, self-driving cars to regular consumers (at $10,000 a pop). Tesla's disruption of the industry is not due to greater sophistication in production or more spending on marketing. It is an AI company first and foremost, embedded in the automotive space.

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Digital Therapeutics and Digital Health and their Impact on Pharma Revenue

Digital health is transforming the way pharmaceutical companies, payers, healthcare providers (HCP), and patients interact and extract value from one another. This article briefly explores the shape of the digital healthcare ecosystem, the role of digital therapeutics in terms of both outcomes and the market, and the ways in which digital healthcare is likely to evolve.

The Digital Health Ecosystem

Definitions in the digital health ecosystem are still quite loose due to the evolving nature of digital health technology and the eagerness of disruptors to create value out of novel technologies and solutions. This is compounded by a general resistance to change in the healthcare space.

But broadly speaking, digital health refers to companies, products, services, and concepts that exist at the intersection of technology—notably information technology—and healthcare.

It can be separated into two categories: digital therapeutics (DTx) and digital care. The former refers to evidence-based interventions, made available through some device or application, to help patients and providers prevent, diagnose, manage, and treat a specific disease.

In addition, DTx providers are expected to engage end-users in product development and usability, feature robust patient privacy and security, respond to regulatory bodies as necessary, and collect, analyze and apply real-world evidence and product performance data.

Finally, digital care loosely refers to businesses that offer care solutions to patients for a variety of health troubles, much in the same way a clinic or hospital might.

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Outcomes in Digital Health

Especially in disease prevention and long-term disease management, statistically significant positive outcomes have been found.

For example, Omada Health, a digital care solution with personalized programs for diabetes, musculoskeletal disorders, prediabetes and weight management, hypertension and behavioral health, features in 16 peer-reviewed studies with demonstrable positive outcomes.

Virta, which operates in the diabetes-management space, reported reversal of diabetes in 60% of patients and reduction of insulin usage in 94% of patients.

Finally, Pear Therapeutics, owners of reSET (substance abuse), reSET-O (opioid abuse), and Somyrst® (insomnia) released real-world data from its applications demonstrating improved clinical outcomes for patients.

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The Evolving Digital Health Market

The majority of DTx applications tend to be focused on management—of diabetes, of substance abuse disorders, of body weight—and prevention—such as for heart disease. In other words, it relates to the management of chronic diseases and behavioral conditions, which make up a large part of US healthcare spending.

The market is growing quickly and, for the most part, year-on-year. It increased from $1.1B in 2011 to $9.4B in Q3 of 2020, with the only dip (10%) appearing in 2019. The market is evolving so rapidly, in fact, that a 2020 forecast by Insider Intelligence placed 2025 DTx market value at $9B, while a 2021 forecast has adjusted this to $56B—a 600% increase.

A variety of DTx business models exist. According to a McKinsey report, 67% of companies "reported having a digital solution as a core asset, … while approximately 20% reported having data or hardware as a core asset." Despite the fact that 85% of DTx companies have the "technical and legal ability to monetize data", many find it doesn't fit with their current model or presents too many challenges.

Digital solutions, like an app or software, make up 67% of core assets for DTx companies, while unique (and patented) algorithms and a platform connecting stakeholders make up 40%. Only 20% go to market with a device, and likewise, only 20% market a data set as their primary asset. (The values exceed 100% as many providers work in a combination of two or three spaces.)

McKinsey report five business models used by most DTx companies: as a prescription digital therapeutic (PDT), as a solution marketed to employers, as a solution marketed to payers (who offer it to policyholders), as a solution marketed to HCPs or pharmaceutical companies and, of course, as a solution marketed directly to consumers. The latter is the least common among main players as there are a number of related challenges.

Partnerships also vary widely in the DTx space. Many providers, of course, choose to collaborate with incumbents who can offer experience, funding, and a strong reputation.

Some of these are device providers, such as the partnership between uMotif, a "patient-centric platform powering site-based to fully decentralized clinical, real-world and post-marketing research" and Fitbit. Unsurprisingly, pharmaceutical companies also make for strong partners. Noom and Novo Nordisk are one well-known example, as are Happify and Sanofi.

Novartis has invested in a number of projects, including Proteus Digital Health, which makes an ingestible sensor. Others, however, decide to move forward without partnering. DarioHealth, for example, built a smart glucose meter from scratch, preferring the agility in this approach to partnering with an existing device.

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In the years to come, reimbursements are likely to be an important topic for DTx companies as many of the telehealth benefits provided by Covid-19 emergency are rolled back or rethought. According to one article in Forbes, leaders will need to demonstrate the value of the data produced and work towards establishing long-term government payment contracts. Meeting regulatory requirements will be an important first step for DTx companies—something pharmaceutical companies can provide guidance on.

Value-shift Models Seen by Pharma in Digital

The "digital" in DTx has unsurprisingly brought with it many of the business model attributes of technology companies, including a focus on patient outcomes and value, as well as proactive management of disease—an area, as we've seen, where DTx is very active. Pharmaceutical companies will need to (and have already) embrace such models, especially as digital incumbents like Google and Apple move to market with digital healthcare products and services, bringing with them all their experience and expertise in customer-centric models.

Fortunately, some are already making great strides in this area. Novo Nordisk, for example, is making good use of the BrightInside digital healthcare platform to extend the benefits of its next-generation insulin pens. In a rather unique move, the company has also taken a non-exclusive approach to its partnership. "By safely and securely enabling data integration across Novo Nordisk's partner ecosystem, the BrightInsight Platform supports Novo Nordisk's goal of helping more people realize the full benefit of their innovative medicines."

Big Pharma in Digital Health

So what role does (and might) big pharma play in digital health? As already noted, there is some hesitation. Pharmaceutical companies obviously see the benefit of new technologies (and the data that tends to come with them), but are wary of the risks associated with the high barriers to access inherent in their own, tightly regulated space. While evidence-based outcomes certainly aren't rare, as we've seen, neither are they the norm, which raises other questions about compatibility. Finally, there are cases where the technology is simply unable to capture a sufficiently significant portion of the market to make it viable. This was the case with Proteus, who filed for Chapter 11 Bankruptcy (and was snatched up by Otsuka for a relative pittance of $15M) when it failed to secure customers for its ingestible chip.

Nonetheless, big pharma will want to collaborate with big tech to reap the benefits that are obvious to both, even if it isn't clear how to go about it. Both will need to play to their strengths, with tech and data companies providing technologies that customers enjoy using and in the production of which they've played a central role, with drug-makers providing regulatory and empirical research support.

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The Importance of Embracing the Future of Digital Health

There's no question that pharmaceutical companies will need to embrace digital health to maintain relevance. The age of generalized molecules is coming to a close. The future lies with earlier diagnoses, thanks to always-on monitoring from smart devices like smart watches, smart homes, and smartphones; treatments with fewer side-effects, including DTx treatments focusing on successfully modifying behaviors; managing disease successfully through data-driven lifestyle changes; and highly personalized medicine (including drugs).

All of these will mean less demand and weaker markets for traditional, general-subscription drugs, meaning that pharmaceutical companies will need to embrace digital health or fade into the background. This is especially true as the barrier to FDA approval has already been cracked not once, but twice, by Pear Therapeutics and Proteus, and digital health startups are unlikely to remain as hesitant about seeking regulatory approval on their own.

Already, pharmaceutical companies have made important strides in embracing the inevitable future of digital health. Beyond the investments mentioned above, for example, innovation challenges are proving to be a low-risk, high-return approach for companies. Eli Lilly and Company's "Transforming IBD" innovation challenge brought clinicians, patients, and innovators together. The winner, Health Voyager, won $50,000 and aid in developing their solution.

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How to Get Started with Digital Health

After examining a number of digital health businesses, there are several steps for successfully working in the digital health and DTx space.

Defining a clear value proposition to address customers' unmet needs is key, as is the design of a satisfying and good customer experience, something tech companies are particularly good at.

Healthcare companies can provide support by adding their experience to technical expertise to develop robust, compliant products with a proven value that opens the doors to the most appropriate regulatory pathway.

Finally, digital health stakeholders must develop a core asset that creates a sustainable advantage and scalable model, exploring any of the different business models mentioned above.

Digital health and DTx are gaining momentum. The top 150 start-ups in 2020 received over $20B in funding, and the market continues to grow at a steady rate. Pharmaceutical companies are making headway in this space, but are already working at a disadvantage in many ways. That said, the experience in key aspects of empirical research, regulatory compliance, and going to market are invaluable. But very few pharmaceutical companies have a strong, innovative digital health strategy, confusing this instead with digital marketing.

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Characteristics of companies that have **successfully digital transformed using AI**

An important question is how companies that have successfully digitally transformed using AI, like Amazon, Tesla, and AliBaba, differ from others. As it turns out, the main differences between traditional businesses and successfully AI-powered businesses are cultural and strategic. These are the findings of an extensive report published in the Harvard Business Review entitled Building the AI-Powered Organization. Based on this and other studies, there are some key negative cultural aspects that hold businesses back.

Technology is a necessary evil, not a universal support. First, traditional businesses have tended to see AI (even technology in general) as a "necessary evil" to business operations, and not something that can improve processes and experiences across the board. In the words of Imtiaz Adam, a well-known AI business expert, "Tech firms and startups view technology including AI as a source of revenue generation and [a] key part of the customer experience. Legacy firms often view tech as a cost and backend process that is an evil necessity relative to the business rather than a key tool to generate value in the core processes of the company."

The term 'digital transformation' is being erroneously applied and that these results indicate that the companies have speeded up their digitization, rather than digital transformation.

Data is collected as an afterthought and put to limited use. Businesses having undergone successful digital transformations did so by understanding the value of data as a precursor to decision-making, customer relations, and production, and not merely as their byproduct. In one review published in the California Management Review entitled "Demystifying AI: What Digital Transformation Leaders Can Teach You about Realistic Artificial Intelligence," the authors note that integrated data management, or "the organizational capability of managing customer and organizational data in a holistic and integrated fashion, avoiding data silos and incompatible data formats" (emphasis added) helps separate DX leaders from laggards. Look once again to Amazon, whose

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entire customer journey is informed by data.

AI is developed and implemented in a top-down fashion, rather than directly involving the departments and individuals who will be using it to boost retention and trust. In one example from the HBR study, a firm implemented an AI scheduling solution for events involving hundreds of people. The AI ran through the hundreds of millions of possible permutations, distilling options down to millions, then hundreds. “Experienced human planners then applied their expertise to make final decisions supported by the data, without the need to get input from their leaders.” Importantly, they “[trusted] its output because they’d helped set its parameters and constraints and knew that they themselves would make the final call. When AI is developed with departments, rather than imposed upon them, retention and trust are much higher.

AI understanding and adoption are taken for granted or left to chance. In one study, it was found that the vast majority (90%) of companies who were able to successfully implement and scale AI practices “spent more than half of their analytics budgets on activities that drove adoption, such as workflow redesign, communication, and training.” Cultural and workflow changes require leadership and cannot merely be left to chance. Executives should expect and plan for resistance, finding ways to motivate and engage employees in the move to becoming a full-fledged AI-powered business.

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Enacting digital transformation in the pharmaceutical industry

Digital transformation is a bit like trying to maneuver a massive container ship. The sheer size of the beast makes it difficult to turn about and a lot of energy is required to get it moving. Once it's underway, though, all that's needed is a clear destination, good navigation, and strong leadership.

The first step is to focus on what matters most. This will serve as a polestar in your digital transformation, informing decisions and allowing for all the minute corrections necessary to stay the course. It might be argued that in pharmaceutical companies, drugs should be the focus. However, as we've seen from successful transformers like Commonwealth Bank, both product and technology really should take a backseat to customers. Moreover, new therapies are being developed rapidly. Pharmaceutical companies that focus solely on molecules will flounder as personalized approaches like genetic therapy and immunomodulatory nanobots gain traction.

The next step is to plot a course from where you are to where you want to be. There is an almost endless number of ways to do this, both conceptually and technically. It is simultaneously the most important and the most difficult phase. Planning for digital transformation requires taking stock of your existing assets, processes, and resources, both human and technological. Individual stages will often revolve around the digitalization of these elements, but reinvention is equally important.

Finally, businesses must adjust course as new technology becomes available. Digital transformation is a journey, not a destination. Pharmaceutical companies should look to leverage disruptive technology like digital twins, smart materials, 5G and the Internet of Things (IoT), sensors and wearables, nanotechnology, decentralized production like 3D printing and smart factories, and platform enablers (components that improve the function of an existing platform, like iOS or Android).

That said, transformation needn't come at the cost of day-to-day business or quarterly objectives. With the right strategy and approach, it's possible to enact change without disrupting ongoing business or threatening your bottom line. In an article from the Harvard Business Review, Drs. Nathan Furr and Andrew Shipolov dismantle some of the scarier popular misconceptions regarding digital transformation, including the idea that it requires "a radical disruption of the value proposition" or "overhauling legacy systems." Neither of these things is true, and there's no reason a company can't undergo a successful digital transformation while continuing to thrive in the short-term by implementing intelligent, incremental changes in light with its overall transformation strategy.

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How firms are **creating shareholder value through AI**

Such cultural changes don't come easily, but the benefits are more than considerable.

Leveraging AI to make full use of customer and corporate data provides a full, 360° view of the customer. In "Using AI to Track How Customers Feel — In Real Time" (HBR), authors M. Zaki, J. R. McColl-Kennedy, and A. Neely describe how they applied an adaptive AI to customer satisfaction written responses with great success, unlocking several key benefits. The AI showed them what customers really cared about, including several elements leaders had missed out on, like the importance of financing and invoicing, allowing them to redirect resources and better train employees; it allowed the firm to uncover the root causes of dissatisfaction by following-up with flagged customers; it helped the firm to capture the customer's emotional and cognitive responses to their service and then quantify it, something humans are notoriously bad at. All of this was used to improve customer experience, which ultimately led to greater profits. Cited above, Amazon is another clear example of the value in customer data.

AI allows businesses to be proactive rather than reactive by predicting customer needs, expectations, and even behavior. The same AI mentioned above allowed the team to spot and prevent decreasing sales by zeroing in on customers that, while giving high satisfaction scores overall, were "at risk of defecting due to historical issues." It was shown that "if these so-called 'satisfied' customers defected they were likely to cost them around $6 million in sales." By learning from millions of customer experiences in ways no team of humans reasonably could, AI provides robust decision-making information ahead of events. Predictive AI is making its way into customer relations, production, and even notoriously fuzzy areas like share trading with proven success.

Using AI to build new services and products out of existing data. Beyond customer relations, AI can help businesses leverage existing processes and data to create new value in novel services or products. For example, the Press Association is using AI to spur on an industry-saving digital transformation project for local news (a sector that's been in decline for years). Machine writers are able to churn out hundreds of localized variants of basic news stories in mere hours, which local journalists can then engage with and expand upon. "News providers that still have reports delving into local issues will use these bot-generated stories as the basis for their own, deeper investigations going forward." It is not quite, but almost, something from nothing.

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Streamlining supply chain and production to an unprecedented degree. While Tesla is offering AI as a product, BMW has integrated AI into just about every step of its manufacturing processes and logistics. It uses AI to manage the movement of more than 31 million parts around the world, drive autonomous transport vehicles inside and outside plants, load and unload payloads and, more importantly, make logistical decisions about what needs to go where at what time. This is key, as it allows humans to focus on the craft of making cars, without having to worry about materials being where they should be at what time. Finally, BMW is using AI to check for defects and better distinguish between oil and dust, for example, versus actual fine cracks or imperfections.

Likewise, AliBaba's Singles Day set record sales this year, despite a global pandemic that not only disrupted supply chains but also presented significant hurdles for the AI whose job it was to predict sales. Nonetheless, by foreseeing a need for greater investment in AI in light of these global changes, AliBaba was able to generate more than $115 billion in sales from November 1st to November 11th, at a time where other online sellers were struggling.

These are just a few of the ways firms are creating shareholder value through AI.

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Business impact

The studies mentioned above, and in particular that of Brock and Wangenheim, show that AI is expected to impact business in a variety of areas, including smart services, office automation, management support, smart products, manufacturing automation, and automated customer service.

While expectations are largely aligned across sectors, close to 20% of firms anticipate a particularly high impact. Across industries and firms, the common thread is that those with stronger digital skills anticipate the greatest AI business impacts.

In other words, businesses with a strong digital strategy and digital business development skills, investments in new digital technologies like AI and IoT, skilled and well-funded data science teams, and excellent cybersecurity skills stand out as particularly well-positioned to "realize the potential of the new digital technology."

The study underscores the importance of technical know-how, data management and analytical skills, and data, certainly, but also that these elements must be "embedded in a coherent and suitable strategic framework to ensure a guided implementation and wider organizational alignment and support."

In other words, executives and business leaders must establish a clear, strategic path forward, championing the characteristics of companies that have successfully transformed using AI so that shareholder and stakeholder value might be created as a result.

Where to start

Many businesses struggle to fit AI into their digital transformation. They are disappointed by returns after implementing IT transformations, or digitizing processes or adding AI but not seeing the expected returns. Others know they have transformative amounts of data at their disposal but are unable to obtain real value. Or they understand the value of data but are unsure how to mine it.

There are myriad factors to take into consideration, muddying the waters and making it difficult to know where and how to begin. Eularis have often been called in to take over transformation projects for large healthcare companies after the 'safe' big consulting firms have failed to deliver. Eularis work with biopharma and healthcare teams interested in becoming a data-driven insights company weaving AI, ML, and other FutureTech while identifying ways to transform the value being delivered across the pharma value chain by creating innovative, transformative value shift models. Executives can start by reaching out to the author Dr. Andrée Bates (abates@eularis.com) for a confidential discussion on what can be achieved for their company.

Conclusion

Business leaders with the knowledge to implement the strategic, cultural changes necessary to marry AI and DX are able to create tremendous shareholder value. Such businesses, however, stand out as exceptions in a sea of stalled transformations and disappointing returns on investment. Investing in expert services is one reliable way to gain the understanding and skills necessary to leverage AI to its full potential.

To weather the coming storm of disruption and change, pharmaceutical companies will need to undergo successful digital transformations – not simply digitizations. This requires a clear vision and a comprehensive roadmap, once which takes into account the state of the market, the activities of investors, tech enablers and disruptors, internal resources, and, of course, the customer. Eularis works closely with pharmaceutical companies and others in the healthcare space to build these roadmaps and help businesses achieve digital transformation.

The world is changing. New therapies threaten the dominance of traditional molecules in medicine. New disruptors and existing digital giants like Amazon and Google are already moving into the healthcare space with astonishing speed and unrivalled resources. If pharmaceutical companies fail to plot their course today, they may never make it out of the harbour.

ABOUT THE AUTHOR

Dr Andrée Bates

Dr. Andrée Bates is a pharmaceutical industry veteran with 30 years in the industry and 20 years working specifically in pharma AI. She brings blended expertise in Artificial Intelligence (AI), Pharmaceuticals, and Strategy. Dr. Bates has led Artificial Intelligence powered projects for numerous top-tier pharmaceutical companies in diverse areas such as clinical trials and R&D, market access, regulatory, medical affairs, and sales and marketing. These have all resulted in measurable growth in revenue, profit, and market share for her clients. Having worked in the pharmaceutical industry since 1993, and AI in Pharma since 2003, she has a detailed understanding of the pharmaceutical environment and how AI can be leveraged compliantly and effectively. She has authored many articles in peer-reviewed journals and industry reports. She has also been a guest lecturer on Healthcare Innovation and AI in multiple university MBA programs: INSEAD Business School (Fontainebleau), the Erivan K Haub School of Business at St Joseph's University (Pennsylvania), Fordham University (New York) Global Healthcare Innovation Management postgraduate program, and Bayes Business School (Formerly Cass Business School – The University of London), and she lectures on AI for Boards at Henley Business School at the University of Reading, as well being a guest speaker in numerous internal pharmaceutical company meetings and international conferences in UK, USA, Latin America, Canada, France, Germany, Spain, Hungry, Poland, Japan, China, Singapore, and Australia.

About Eularis

Eularis exist to help biopharma and healthcare commercial teams who want to weave FutureTech like Artificial Intelligence (AI) and Machine Learning (ML) and Virtual Reality (VR) and Augmented Reality (AR) and Internet of Things (IOT) to solve their challenges and deliver unprecedented measurable results.

The Eularis team of experts have extensive qualifications combined with many years of real-world experience in both biopharma and AI companies. The mix of qualifications (MD, PhD, MBA, M. Sc., M Engineer.) along with prior experience in executive-level positions in top 20 pharmaceutical companies ensures our clients have the right strategic and tactical questions solved and planned with cutting edge technology and AI. You have access to Pharma AI Futurists, Pharma Board level team, and AI Strategists, and Data Scientists and Big Data Engineers and Developers to ensure you are playing at the top of your game.

Every project is unique and begin by developing a deep understanding of your strategic needs and your data. Then, we plan the right approach to meet your strategic needs and transform your performance.

Learn more
eularis.com

TRY ONE OF OUR CORE SERVICES

1 AI STRATEGIC BLUEPRINT

Give us your most difficult challenges to solve with AI and FutureTech!

The problem of poor AI impact comes down to a lack of strategy and pre-strategy. We know AI is impressive, and we see the results all around us. So why do many pharma AI project never pass the pilot stage? There is a plethora of evidence as to why not having a strategic AI blueprint before you begin is problematic and leads to project failure. We create strategic AI blueprints to ensure all AI projects meet the company's strategic objectives and move the needle for maximum impact.

2 AI DEPLOYMENT BLUEPRINT

Ensuring the key foundational elements required for success in your AI FutureTech projects are in place.

In the pharma environment, we face unique challenges. Knowing where you want to go is one thing, but the trap many then fall into is ensuring that the key foundational elements are in place (e.g., finding the right data, getting through internal legal and compliance, buy vs build, tech planning SOW, choosing the optimal AI vendor etc.) so that you can execute quickly. Our deployment blueprint accelerates your ability to industrialise the opportunity effectively by taking care of all these foundation pieces enabling you to easily commercialize the most effective solutions rapidly and seamlessly.

3 AI MODEL IMPLEMENTATION & TECH BUILD

End-to-end solutions focused AI and tech implementation

Tech implementation from end-to-end including tech project planning, implementing security procedures, data discovery, data staging, data preparation, data AI modelling (with ML, NLP, Generative AI etc) model evaluation, UI/UX creation, integration services, software integration and cloud services, perform testing and quality controls and launch.

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