

Amy Hung,
Olivier Leclerc,
and Travis Murdoch

How to succeed as a chief digital officer in pharma

Pharmaceuticals & Medical Products March 2017

The life-sciences industry is embracing digital to unlock innovation. We spoke to ten digital leaders at global pharmaceutical companies to understand how they focus their efforts.

The conviction that competitive differentiation will require effective digital initiatives has led many life-sciences companies to create a new leadership role, chief digital officer (CDO), to guide their digital initiatives.

To understand how these leaders see the digital future and how they are managing for success, we spoke to CDOs and their equivalents at ten pharma companies. These conversations suggest three imperatives for digital efforts: focus on the team applying the tools, not on the tools themselves; make bold, disruptive bets; and optimize the portfolio of initiatives to achieve company priorities, while taking finite resources into account.

Focus on teams and capabilities, not tools

Like most tools, digital technology becomes commoditized, so gains from early adoption tend to fade as technology becomes cheaper and more accessible. Thus, technology itself is unlikely to be a sustainable differentiator.

“It is easy for businesses to jump to technology, to be enamored with the shiny objects and not focus on the problem [they are] trying to solve,” says Amy Landucci, global head of digital medicines at Novartis. Sustainable differentiation requires a focus on generating cutting-edge insights into the business and its possibilities. To that end, companies must build teams of people capable of generating such insights. The team, not the tool, is the vital element in digital success across industries.¹

The team must have a suite of digital capabilities, including expertise in data science and multichannel management, experience deriving insights from real-world evidence, and a system of digital tools to complement traditional pharmaceuticals. Generating differentiating insights requires a cross-functional team that’s able to work across markets.

¹ Satty Bhens, Ling Lau, and Hugo Sarrazin, “The new tech talent you need to succeed in digital,” September 2016, McKinsey.com.

A team member needs to have “drive, good understanding of customer journeys and ability to identify the relevant innovative digital solutions leading to better healthcare outcomes. He/she needs to inspire the rest of the organization,” according to Betul Susamis Unaran, global head of digital at Ferring Pharmaceuticals. Other digital leaders say they seek individuals who want a job that is not purely technical, who can understand pain points and ways that digital technology can resolve them, and who can work with diverse members of the wider enterprise.

The evolution of digital in the strategy of manufacturers creates this need for cross-functional teams. The next few years will likely see manufacturers’ focus shift from technology to design in order to ensure adoption of digital and analytics solutions inside and outside the enterprise. Several factors will fuel this shift.

First, powerful digital and analytics platforms that enable faster and easier application development are emerging. For example, while deep learning analytics used to be the secret gardens of a few technology companies, open-source platforms like Alphabet’s TensorFlow can enable anyone (with solid mathematical skills) to develop innovative analytics. The impact of the analytical tools will depend on their reach, which will in turn depend on the creation of interfaces that enable lay users to leverage the analytics in their day-to-day work. Creating intuitive interfaces so executives, physicians, or patients can use—and help improve—the tools will be mostly a design and marketing challenge.

Second, just as tech companies such as Apple and Fitbit have made user-centric design a significant source of digital value, life-sciences companies will embed design thinking into their approaches to the market. Many are realizing that differentiating through digital will require translating deep customer insights into solution designs that help patients and providers simplify their journeys or improve their outcomes.

Finally, life-sciences companies are increasingly recognizing the need to overhaul their current approach to application development. Only a handful of the 160,000 healthcare applications available on iOS, for example, are used at scale. Similarly, pharmaceutical manufacturers are starting to realize that creating applications focused solely on their products will limit their impact. Most patients are polymedicated and require interoperable solutions. How many apps will a single patient use?

The adoption challenge is huge and will require sophisticated teams that put digital and analytics at the heart of the business. Attracting such talent remains challenging, as multiple tech companies are venturing into life sciences. Companies in some industries admit paying digital executives more than the CEO, albeit on terms strongly linked to performance.

The organizational structures within which teams operate will depend on their mandate. Philip Ma, vice president of digital health technology and data sciences at Biogen, says

that a key question is whether the company's strategy is "to enable the existing business or to create new businesses." Most CDOs with whom we spoke are charged with enabling the development of digital solutions within the core of the business, so they have organized their teams to integrate closely with, and have influence on, business functions.

But the rarer strategy of using digital to create novel business lines and revenue streams calls for designing the organization to be as unencumbered as possible by the current enterprise. Kristian Hart-Hansen, CEO of the LEO Innovation Lab, says that he wants to be like a "speed boat going out into open waters." Otsuka Digital Health, a start-up created to commercialize a digital behavior-health platform, is similarly freestanding.²

Make bold, disruptive bets

Change in today's digital world is proceeding rapidly. The belief that digital change happens incrementally is dangerous and has contributed to the demise of many companies, including some with a rich technological history—such as Kodak, a technology leader that failed to keep pace with the rapid digitization of photography.

A portfolio of digital initiatives should include bold, disruptive bets. Malika Mir, CDO at Ipsen, says that a key part of her role is "to make sure that the business understands digital is a game changer, that it will revolutionize how we do business."

Other industries offer valuable lessons for pharma. In some industries, digital has moderately realigned supply and demand in the market by exposing new supply (Airbnb) or by addressing unmet demand (streaming services that unbundle single songs from albums). In other industries, market dynamics have shifted radically, with companies reimagining products and services (as, for example, Amazon and Dropbox transformed storage products into a service) or hyperscaling platforms that blur traditional industry definitions and span multiple market segments (Apple, Google, and Tencent).³ In banking, among other industries, traditional barriers to entry, such as regulatory control, have not prevented extreme market shifts—signaling risks for companies that ignore the need to make bold moves.

While many pharma companies are launching game-changing initiatives to transform their core business, another option is to create a separate, self-sustaining entity for these efforts. LEO Pharma created Innovation Lab as an independent unit with multiyear funding to focus on nonpharmacologic digital solutions for patients with skin diseases. As CEO Hart-Hansen suggests, LEO Innovation Lab is shifting "from a pills company to a solutions company," creating digital platforms and applications not necessarily tied to drugs.

Initiatives fall into two key categories. A disruptive initiative inherently transforms a product or a customer experience (or the monetization of either). Conversely, an optimizing digital initiative improves the efficiency of a business or product more incrementally. The distinction is important.

² See David Bell, Brian Fox, and Ryan Olohan, part 6 in *Pharma3D: Rewriting the Script for Marketing in the Digital Age*, Google, McKinsey & Company, and The Wharton School, 2016, pharma3d.com.

³ Angus Dawson, Martin Hirt, and Jay Scanlan, "The economic essentials of digital strategy," *McKinsey Quarterly*, March 2016, McKinsey.com.

Disruptive initiatives require substantial change and create tension in the enterprise. Success metrics are rarely fiscal, especially in the early stages. These initiatives require multiyear investments and extensive capability building, and they have a higher risk of failure than optimizing initiatives.

Optimizing initiatives often have a measurable return on investment. These “safer” initiatives are important, but too much attention to them can prove dangerous, as they can create a false sense of security. They consume the digital team’s time and effort but rarely mitigate the external risk of disruption to the enterprise.

Optimize the portfolio

From the many digital initiatives available to them, CDOs must choose those that will best serve the company’s priorities within its finite resources. Making the right choice requires setting the digital strategy, aligning initiatives with strategic goals, creating metrics for and prioritizing initiatives, and developing an operating model.

Setting the digital strategy requires identifying how digital technology can help redefine the business (that is, the use cases).⁴ This step ensures focus on addressing the needs of the enterprise, with less focus on the technology itself. “Technology is here to facilitate a business,” says Marcello Damiani, chief digital officer of Moderna Therapeutics. “If you don’t understand your business, you can’t apply your technology.”

Then the CDO needs to inventory initiatives and align them with the use cases. Except for a new or small company that is “planting its initiatives in a green field,” most companies have existing initiatives that have arisen organically within the enterprise. A closer look at these initiatives often finds opportunities to combine some by use case. Philip Ma of Biogen, for instance, has reorganized multiple small analytics and data-science initiatives to take advantage of their interdependencies in helping the company get better at forecasting.

Next, the CDO needs to define metrics for success, as a basis for prioritizing initiatives. The right metrics depend on the type and scope of the initiative. CDOs agree that a financial-output metric such as return on investment is not necessarily well suited to disruptive initiatives in their early stages (or ever, in many cases). In the early stages, measures appropriate to a specific use case, such as increased customer adoption or shorter recruitment time, are generally more appropriate. Most also use a second metric, such as degree of alignment or likelihood of implementation, to reflect the desire and ability to execute an initiative—underscoring the importance of change management in deploying digital.

Combining these metrics with resource requirements is an effective way to prioritize initiatives. Some CDOs discover that their portfolio focuses too heavily on technology like apps or analytics. Others see that they lack the capability⁵ or team for effective execution.

⁴ Our previous research found four main areas where pharma companies can capture value from digital. See David Champagne, Amy Hung, and Olivier Leclerc, “The road to digital success in pharma,” August 2015, McKinsey.com.

⁵ Many companies turn to partnerships for capability building. At a recent McKinsey European roundtable, 10 of the 12 digital leaders from pharma companies said they use external partners to build capabilities.

Finally, the CDO must develop an operating model. A common impediment to successful deployment of digital initiatives is the company's traditional way of working. Established pharmaceutical companies typically make decisions meticulously, and often slowly. As a result, the CDOs we interviewed recognize the need to develop new operating models that enable rapid building, testing, and learning—an agile or lean-start-up model, for example. The goal is to swiftly deepen understanding of the customer or use case and learn from failed experiments.

For instance, one company recently developed a new pricing and contracting tool for medical-device representatives. Instead of modifying the core analytical engine embedded in a complex legacy system, it deployed a new cloud-based solution, initially using simple outputs from the legacy system. Believing that the tool was directionally correct, the company piloted and refined it with field representatives. It gradually developed a full solution to embed in the enterprise system, but it benefited from the impact of the initial solution in the meantime.

The status quo is often deeply rooted in large pharma companies, and this can hamper the effort to create a build-test-learn operating model. For example, team members often have difficulty accepting the failures that inevitably happen when testing and iterating a nascent initiative.

Some CDOs tackle such issues by asking senior management to realign employees' performance metrics. Others recruit individuals from technology firms and start-ups, where the build-test-learn approach is part of the company culture. "It's OK to fail," says Michael Russo, executive director of digital strategy and innovation of Acorda Therapeutics, "but fail quickly and learn from the mistakes." Role modeling by leaders—for example, when an executive describes his or her own failures and the lessons learned—can also help shift the culture.

A crucial part of the new operating model is an approach to knowledge management. Malika Mir of Ipsen, for example, has established processes to record all initiatives in a central database in order to track them and share knowledge from successful and failed initiatives across the global organization. This has the added benefit of providing a means of tracking initiatives.

Deployment of resources is equally important. In the early stages of an initiative, when the potential for failure is high, use of resources needs to be limited without extinguishing innovation. "If tests show the project is good and we see a business case, then we go to beta phase and scale up," says Hart-Hansen of LEO Innovation Lab. One CDO speaks of putting "guardrails" around the resources devoted to initiatives, while empowering leaders to allocate the resources as they see fit.



CDOs can play a key role in guiding life-sciences companies through the disruption of digital technology and reaping its rewards. Successful CDOs build teams that can generate insights

from digital tools and have the courage to make bold, disruptive bets. These leaders also create a portfolio of initiatives that match company priorities and make the organizational changes needed to execute those initiatives successfully.

In an end state where digital is fully embedded in the business, the successful digital leader may be faced with the dilemma of his or her position becoming redundant. At its best, the CDO is thus an agent of transformation, and the epitome of selfless leadership. ■

Amy Hung is a senior expert in McKinsey's New Jersey office, **Olivier Leclerc** is a senior partner in the Southern California office, and **Travis Murdoch** is a consultant in the Silicon Valley office.