Disrupting Innovation with Digital Solutions

Healthcare is undergoing a massive transformation with increased emphasis on digital technologies in all areas. According to Deloitte research, biopharma companies recognize that digital transformation will aid product and service innovation, greater customer engagement, and improvements across R&D, commercial, and the supply chain.

Companies realize they must embrace digital solutions more proactively given growing competition from non-traditional stakeholders, including Google, Amazon, and Microsoft, which bring with them cloud computing as well as powerful digital service ecosystems.

Some industry experts also point to the potential of technology innovators to disrupt the industry's sales model and influence pricing, for example, by taking over drug distribution channels.

The Digital Disruption

Digital solutions are disrupting innovation in multiple ways. With more and more consumers adopting wearables and other sensors, there is a proliferation of data that could be invaluable in providing real-time insights into a person's health and response to treatment.

Elsewhere, the growing popularity of direct-to-consumer genetic tests is making more data available for research and personalized medicine. As a result, digital therapeutics are emerging as ways to treat or manage a variety of diseases, including Alzheimer's and diabetes.

In a crowdsourcing simulation exercise, Deloitte sought feedback from industry leaders across various functions on what it would mean to evolve in the context of digital technology disruption. Most believe digital solutions can help companies improve processes and productivity, identify different patient types for more personalized care, and even dramatically change the types of treatments companies offer.

Discussions on the digitization of the industry point to a move toward digitalized labs. Some analysts have noted that in order to speed the development of new products, make the most of existing research data, and even improve collaborations with partners, companies will need a digital laboratory platform. According to McKinsey, IoT in the lab will reduce manual errors and variability.

There have been several innovations aimed at automating laboratory workflows to create greater efficiencies and enable scientists to focus on science. For example, Swittons has brought out a new line of IoT-enabled smart devices built specifically for pharmaceutical labs. The software platform can be integrated with other systems and other IoT devices to help companies build strategic Labs of the Future (LoTF).

Industry's Response to Digital

At some pharmaceutical companies, digital is becoming more deeply entrenched. Roche, for example, sees digitization as integral to helping manage the complexity of medical practice (through tools such as clinical decision support), tapping into data to support individual patient health and population health insights, and support the broader healthcare infrastructure.

In the area of personalized health, Roche has invested in advanced analytics and AI to gather real-world data with a goal of improving speed and efficiency when developing innovative medicines.

Regulatory authorities are also paying closer attention to digital solutions. The FDA established the Digital Health Center of Excellence with the objective of empowering stakeholders to focus on high-quality digital innovation for healthcare advancement. The center seeks to advance digital health technologies, provide scientific expertise across the FDA, advance digital health technology standards globally, offer regulatory review support and coordination, and support strategic partnerships.

The center has been instrumental in enabling digital therapeutics to come to market. For example, Pear Therapeutics received FDA approval for several digital therapeutics, including reSET, for the treatment of substance use disorder, which received authorization from regulators to improve disease outcomes. The company also received approval for reSET-O for the treatment of opioid use disorder, which was authorized through Breakthrough Designation in December 2018, and Somryst for the treatment of chronic insomnia, which was submitted through the FDA's traditional 510(k) pathway while simultaneously reviewed through FDA's Software Precertification Pilot Program and was authorized in March 2020.

Building a Digital Solution Strategy

During a keynote presentation at an an executive forum titled Digitalization in the Pharmaceutical Industry, Prof. Dr. Oliver Gassmann, University of St. Gallen, offered a way forward for digital innovation:

- **Think big** – How will a new, disruptive solution change the entire industry, or even other industries, on a global scale?
- **Start small** – But be ready to expand quickly.
- **Fail cheap** – Learning by mistakes early ensures first approaches are less costly.
- **Move fast** – Don't be discouraged by failures and adapt quickly to market changes, developed insights, and experiences.

Source: Jan Horvat, The Zühlke Group

EXECUTIVE VIEWPOINTS

Deighton Liverpool
Chief Information Officer
Ancillare

IoT and Data Capture

Twenty years ago, a conference audience watched in awe as Oracle Co-Founder Larry Ellison demonstrated using a credit card to buy a soda from a machine. Now, Internet of Things (IoT) devices are ubiquitous. It has quickly become critical to capture patient data remotely using IoT devices. Organizations that can capture this data, and create algorithmic capabilities using AI and machine learning to mine and interpret it, will shape our work and lives going forward.

Data as a Commodity

Data is a premium commodity in today's digital world. The quantity and diversity of data allows organizations to proactively develop new products and services. However, there are security risks to storing and transporting this data across a digital footprint. The challenges are immense in ensuring that cybersecurity protocols are followed. Policies such as GDPR and CCPA seek to protect the consumer, and it is imperative that any solutions that are implemented take them into account.

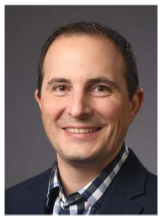
Jim Mahon
VP, Chief Strategy and Marketing Officer
ERT

Virtual Trial Technologies

Virtual trial technologies will continue to have the biggest impact on our industry as we move toward a post-pandemic era. In fact, a recent industry survey showed that 82% of clinical trial sponsors are adopting new virtual technologies to keep their trials on track, mostly in hybrid virtual trial models. These technologies enable bringing trials to the patient's home. Obvious benefits of telehealth and remote data capture are convenience for patients, safety, continuity of trials, and the opportunity for more frequent and more "real world" data capture. Additionally, objective measurement of precision motion captured at home will unlock differential understanding of disease, treatment response, and quality of life quantification.

The Benefits of Streamlined Clinical Trials

Most clinical trial stakeholders are already seeing the enduring benefits of virtual trial technologies if only out of necessity originally. More virtual visits will minimize the need for patients to travel to investigative sites, and increased device integrations with consumer and medical data capture tools, like precision motion measurement, will simplify patients' participation in clinical trials and improve their overall engagement. By doing so, the industry will benefit from more streamlined clinical trials, enhanced patient engagement, and accelerated clinical development times.



Mark DelSesto
VP, Analytics Platform
EVERSANA

Algorithms at the Heart of AI and ML

The typical answer, of course, is that artificial intelligence (AI) and machine learning (ML) software will change everything. Digging below the surface, the real takeaway is to understand how pervasive the use of these algorithms will become and how common it will be to embed them in a wide range of products and services that are quite unexpected. Just about any product or service can be enhanced with ML algorithms analyzing data, searching for patterns, and making automated decisions.

Sprinting Forward

Implementation hurdles are usually related to switching costs: the pain of upgrading versus the gain from the new technology once deployed. Our challenge is that change continues to accelerate. The trajectory of our progress is not based on where we've been or the current rate today; the trajectory builds on new technology, and it is ever increasing. We are well past the crawl and walk stages — we need to be running right now, and we need to be prepared to sprint next year. Skipping or avoiding phases of technology change can quickly hinder businesses, making it imperative to constantly assess and adapt to evolving technology solutions.

Antonio Pregueiro
VP New Offerings and Practice Lead
IQVIA

Smart Algorithms

Beyond AI/ML, the real impact is coming from representing the planning and ways of thinking of field teams through computer algorithms. Platforms running these algorithms analyze customer and market data to produce recommendations around "next best" engagements. By extending human decision-making with digital tools, you

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continuously improve omnichannel customer engagement with next best action, customer messages, and even journeys. This is crucial to successfully impact both automated and person-led engagements.

Driving Impact

A lot of time has been spent choosing the most appropriate platforms, considering that using the right data and expertise is what drives actual impact. The understanding of diseases is captured by real-world data better than ever before. The technology to process and learn from this is universally accessible. So, the real differentiator is the ability to apply them. Patients benefit most since they are more quickly identified, while the industry is rewarded financially by optimizing how resources are deployed.

Juan Garcia
Lead Digital Developer
Ogilvy Health

Capitalizing on the Advancements in Technology

Better healthcare at lower cost requires promotion of interoperability between healthcare technology and its data and patient's medical history. Using technology to take medical tests and having those results available to a healthcare provider near instantaneously cannot be withheld because of legal murkiness.

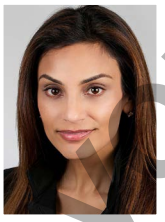
The FDA regulates medical devices, including medical apps. Standards and guidance are needed to make sure that the patient's data is handled with the utmost care and that there is communication between medical technology and patient EHRs. There are a number of companies making wearable technology designed and marketed to increase healthier activities, and measure health information from users. Are these then medical devices? Is there appropriate medical safeguarding of data? Can these watches, or health trackers, or smart speakers talk to a patient's EHR or their healthcare provider? Will we see groundbreaking technology be locked away or dumbed down because the legal team were too cautious?

Christine Molbury
Account Group Supervisor
Ogilvy Health

Making Connections on a Human Level

The success of our work as digital healthcare marketers is hugely dependent on education and engagement through human interaction and connection. In-person conventions, educational forums, and one-on-one meetings have always been core components to developing and delivering our strategy. We are now faced with the challenge of continuing to provide healthcare professionals (HCPs) and consumers with the same level of support with limited or no in-person interaction.

Utilizing technology solutions that healthcare practitioners are familiar with, such as electronic health records and telemedicine platforms, allows us to reach our audience with information at the very moment they are making critical decisions for their patients.



Ramita Tandon
Chief Operating Officer
Trio Health

End-to-End Data Infrastructure

To remain competitive in a healthcare ecosystem that is moving toward value-based and personalized healthcare and to support the need for speed, flexibility, and rapid outcomes, the move to building a more robust and integrated end-to end evidence data infrastructure that links the traditional data silos, employs novel ways to collect and analyze RWD with real-time collaboration workflows will raise the bar for the depth and quality of insights generated to uncover the complete patient journey.

Getting to the Why

Building the blueprint to incorporate the patient voice ("why") and clinical evidence into a robust evidence generation engine will create the right feedback loop mechanism that translates into deeper transparency for the complete patient journey. Understanding the why will offer quicker insights into disease progression and treatment pathways to deploy targeted actions across the product life cycle, including designing patient-centered trials, tailored educational programs to increase therapy adherence, and a collaborative ecosystem to optimize patient experiences and outcomes.

Digitizing the Journey

With the COVID-19 pandemic, the industry has reacted with a new sense of urgency to adopting digital tools. One area where digital solutions are coming to the fore is in sales. In fact, according to a poll by ZS Associates, while 70% of pharmaceutical sales representatives are working again, their activity has been recorded at about half what it was before the pandemic.

According to experts, virtual engagement

with healthcare professionals is here to stay, which means sales teams need to create more meaningful ways to connect.

While digital solutions won't replace sales reps, one company that has cut sales jobs recently is Roche, as it moves toward a digital-powered distribution and engagement model.

IoT-powered smart devices are currently being used to help reps stay in touch with physicians.

Such devices let pharmaceutical sales representatives cover more territory, address communication barriers with physician office visits, improve professional consultations, and augment product orders. The challenges, experts say, are the use of proprietary platforms that don't integrate with other systems and the plethora of apps and portals being offered to physicians.

According to some industry experts, the sales and business sides hold the greatest potential for digital solutions. For example, data-driven insights generated from AI could help to establish pricing models, such as selling entire therapies at a fixed price.

Marketing messages can also be better targeted with digital solutions through customized clinical information as well as wellness recommendations. It is likely that consumer demands will mean biopharmaceutical companies will need to consider adopting digital solutions that analyze and predict consumer needs for personalized care. Among the digital solutions that are being used for commercial purposes are virtual reality and augmented reality solutions. Indeed, it has been estimated that the AR and VR markets will be worth $5.1 billion by 2025 amid ongoing adoption in the medical field and developments in healthcare IT.

Digital Expertise

If pharmaceutical companies are to take advantage of the innovation enabled by digital solutions, they must look both at partnerships as well as talent building.

Many companies are starting to invest in digital talent, but industry analysts say more needs to be done in terms of building talent, providing training, and ensuring these teams have the resources and investments they need to build impactful digital solutions.

Equally, those digital teams within pharmaceutical companies need to work collaboratively with other departments and with external partners. PV