

Digital Takes CENTER STAGE

► *The pharmaceutical industry has been overhauling its business model, embracing technologies that improve efficiencies, reduce costs, and help them to become more patient-outcome focused.*

Recent trends suggest that pharma companies will continue to invest in digital solutions and partner with innovative technology companies to inform business and clinical decision-making. Yet according to McKinsey, many pharma executives find it hard to determine which digital initiatives to scale up and how. The priority for companies will be to assess which technologies will result in the most value.

Patient Perspective

Patients are more determined to take control of their healthcare, and surveys have found that they are more confident about their own ability to make decisions about their health and wellness. The ability to engage with such patients is crucial.

According to PwC, leading pharma companies are embracing a flexible, interactive approach to patient engagement, providing patients with better tools and more specific information about their conditions, as well as the drugs they are taking.

That trend is reflected in the investment choices companies are making. A survey of 76 R&D leaders at pharma companies conducted by Accenture found that a quarter expect digital to have the greatest impact on their company's ability to transform the R&D model to become more patient focused.

Advances in digital technology have made access to patient data more seamless and various tools — miniature implants, vital signs tracking devices, remote monitoring biosensors, and non-invasive diagnostics — can be combined with portals and apps to improve communication, notes PwC's 2017 Pharmaceuticals and Life Sciences Trends.

These technologies also make patients — or consumers — more aware of their treatment options, and more will turn to such solutions to gain greater insights, according to ZappRx analysts. Forums such as PatientsLikeMe help to connect patients with the same conditions to share knowledge and provide support.

In this environment, pharma companies have to be careful that any digital solution doesn't simply focus on driving brand aware-

ness but also on helping patients and physicians to communicate more seamlessly.

A future trend will be to ensure that the portfolio embraces a digital ecosystem that feeds information about a patient's condition to both that patient and other key healthcare stakeholders. This will help to enable remote monitoring of the patient by practitioners. McKinsey offers the example of a digital care plan for a Parkinson's patient that could combine the medication regimen with a solution that monitors drug taking and a smartwatch to assess the patient's condition. Not only could this technology be used to remind patients to adhere to their medication but also to send updates to the neurologist, who in turn can coach the patient on lifestyle changes or adapt their therapy remotely using telemedicine solutions.

Driving R&D

Digital processes are also seen as important for improving R&D productivity, the Accenture survey found. Among the companies that are adopting digital as a key R&D strategy,

EXECUTIVE VIEWPOINTS

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ESOLUTIONS ENABLING HEALTHCARE DECISION-MAKING

Technological advancements have made it possible for patients to use their personal mobile devices to help reduce the burdens they experience along their health journey. From simplifying participation in clinical trials, to keeping them better informed throughout treatment, to providing health monitoring and management tools, digital solutions continue to play a big role in improving health outcomes. These technologies are now being applied in healthcare settings. Voice assistance and wearable sensors, for example, help monitor health while at home or on the move, and are enabling more informed healthcare decision-making.

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ECO SOLUTIONS IMPROVE EFFICIENCY

Today's electronic clinical outcome assessment (eCOA) solutions facilitate improved site workflow and efficiencies, e.g., utilizing a tablet for both clinician- and patient-reported outcomes, inputting data from multiple avenues, and analyzing data in real time. I expect we'll see further back-end advancements that will enable sponsors to identify data outliers at the site and patient level, making eCOA more of a trial oversight solution. Lastly, we can expect to see more eCOA-device integrations, such as activity trackers as indicators of a fall in neurology CNS studies, which provide greater insights to patients' experiences during clinical development.



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IMPROVING OUTCOMES AND REDUCING COST

The objective for patient digital solutions in healthcare is to improve clinical outcomes and reduce the total cost of care. Solutions such as EHR give patients access to their detailed medical records, as well as knowledge and resources to empower them to take control of their healthcare and have more informed conversations with their HCPs. Also, digital pill caps/boxes, using voice assistants, and even SMS reminders are extremely useful for promoting adherence and reducing cost of care.

many have made changes to scale digital efforts, including appointing a global head of digital and establishing a digital center of excellence to help embed digital capabilities across various functions, including R&D.

And for those companies that have adopted digital with the R&D function, many are making leaps and strides in core process redesign of target product profiles and clinical development plans. These companies are harnessing real-world data to make better use of medical science liaisons.

Digital platforms can also help to integrate more patient information into the R&D process, such as patient outcomes as well as patient input into clinical research.

Digital can be invaluable at the clinical stage, for example, helping to optimize trial design by targeting specific subpopulations. Once the trial is under way, eSolutions will be integral to providing real-time or near real-time transparency into trial outcomes.

One important development during 2017 was the release of new endpoint recommendations focused on the use of mobile technology in clinical trials from the Clinical Trials Transformation Initiative (CTTI), a public-private partnership of pharma companies, academics, and regulators aimed at creating a gold standard of trial design using digital technology.

Other partnerships include Parexel and Sanofi collaborating to research the role of

wearables in clinical trials by leveraging their clinical, regulatory, and technical know-how to assess how wearables can enhance data collection and study performance.

Advanced simulation techniques could be key technologies in driving digital discovery and molecule testing. For example, 3-D tissue modeling could help to assess potential toxicity using computer simulation.

Competitive Drivers

Pharma companies must constantly find ways to stay ahead of the competition, and in this environment data insights and analytics are critical. Digital services can help companies in crowded therapeutic areas to differentiate their products.

From a commercial point of view, advanced analytics solutions can help companies inform pricing, gain insights into market access, develop more successful contracting strategies, and even identify treatable patients.

Pharma companies also have to be aware of a new set of competitors as technology leaders such as Apple, IBM, and Qualcomm Technologies move into healthcare. As a result, pharma companies will have to determine whether and how to compete or collaborate with these new players. Companies also need to keep a careful eye on what competitors are doing with digital initiatives and where strat-

egies are proving to be successful, they should adopt and adapt similar programs.

While many pharma companies have only dipped their toes into digital solutions for various reasons, some have been more enthusiastic. Novartis has announced that digital is a key strategic plan, and it has established several partnerships with companies such as Qualcomm, which is developing a next-generation Breezhaler that gives patients with COPD access to their own data on the use of their inhaler in near real time.

Using digital technologies, promotional campaign outcomes can be accurately assessed, and clear comparisons can be made between the costs associated with promotional campaigns and sales.

Another area ripe for digitization is the supply chain, allowing companies to transform operations, improve processes, and bolster productivity. For example, digitization allows for end-to-end supply chain integration as well as greater efficiencies in areas such as filling, replenishing, and troubleshooting, PwC says.

Experts note that companies need to stop thinking of digital as a bolt-on and start embracing a digital-first strategy. Digital solutions are becoming ubiquitous across all industries. To succeed in this fast-moving landscape pharma companies will have to adopt approaches and processes that enable them to take advantage of digital innovations. ^{PV}

EXECUTIVE VIEWPOINTS

REDUCING THE BOTTOM LINE

Secure software solutions that replace old manual processes and give companies the capability to standardize, optimize, collect, and mine data are essential for the realization of performance, along with assessment of risk and costs, which contribute to companies' bottom lines. The cloud, real-time analytics, and mobile devices have been transformative on a global scale for providing better customer experiences and access to new markets.



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ESOLUTIONS IMPACT DEVELOPMENT

We know time and cost are impediments to getting new therapies to patients. Patient recruitment and broad access to trials can help address these challenges. Digital solutions are driving our ability to lower the barriers to entry for patients into clinical trials. Moving forward, the use of digital solutions will allow for greater access, which will increase recruitment, while also reducing timelines and costs.

Advances in connecting patients virtually to healthcare, and in turn trials, will have a significant impact on drug development and the concept of clinical trials as a care option. Long term, the ability to routinely and seamlessly access and query electronic healthcare records, regardless of EHR system — via technology such as blockchain, has the potential to revolutionize healthcare and drug development in the same way it has for the financial and banking industries.

ESOLUTIONS PROVIDE GREATER ACCESS TO CLINICAL TRIALS

Regardless of whether the technology is as simple as eConsent and digital signatures, or more complex, for example virtual patient engagement in trials — all of these advances in eSolutions have the ability to give patients greater access to participate in clinical trials. eSolutions can result in faster patient accrual and shorter drug development timelines.

In some cases these advances may save money; in others they are cost neutral relative to trial expenses. However, if we can get an efficacious drug to market more quickly, this positively impacts the bottom line for sponsors.

Equally, if we can achieve no-go decisions faster it will save potentially on development costs, and reduce exposing additional patients to therapies that don't offer benefit.