The E-ARENA

From the clinic to the medicine cabinet, e-solutions are transforming the way in which medicines are developed, monitored, and taken.

Soaring healthcare costs across the globe, accompanied by growing demands from aging populations and emerging economies, are fueling technological and business innovations to address an emerging need in an industry worth trillions of dollars, according to Lux Research.

In the emerging paradigm, e-solutions, which now touch every point along the drug development continuum, are evolving based on new and advanced technologies. For example, according to Lux Research, new lower-cost, distributed sensors and diagnostics will become much more important than current, traditional late-stage diagnostics and reactive therapeutic strategies.

Examples of newer technologies include wearable devices such as smart fabrics; deep-brain stimulation devices to treat growing neurological diseases, near-infrared spectroscopy for inexpensive brain imaging, and multi-purpose devices that can measure and display core vital signs.

Furthermore, according to Accenture, context-based services, i.e. services that combine real-time signals from the physical world with online activities, profile knowledge, social media, location data and other types of contextual input, will provide customer relevant data allowing life-sciences companies to provide enhanced health solutions that are relevant, timely and focused on patient outcomes.

Location-based capabilities, enabled by widescale smart phone and 3G/4G availability, have helped life-sciences companies find ways to engage with patients and provide them with useful services. Accenture notes several examples, including the Claritin app, which provides information on local pollen count and details of nearby medication availability, and the public restroom app launched by Pfizer in Israel to help in that company's campaign to raise awareness of overactive bladder as a condition and provide advice and helpline access.

Context-based capabilities are being used to fundamentally improve the quality of life for some groups of patients. For example, Accenture partnered with the Alzheimer's Association to build a business model for Comfort Zone, the first comprehensive location-management system designed specifically for Alzheimer's patients and their caregivers. The custom-designed monitoring solution integrates electronic patient-tracking devices with advanced location-tracking platforms from Omnilink to improve

A patient-centered model for drug development also means finding ways to integrate the patient perspective in every phase of the development continuum.

home care and reduce the overall cost of care for those suffering from Alzheimer's disease. Comfort Zone proactively communicates the location of the subject and, if necessary, provides emergency responders with additional information that will help them provide assistance.

In addition to the technological advances that are driving the evolution of mobile, digital, and other e-based solutions is the increasing focus of putting the patient front and center.

"Innovative and forward-thinking companies understand that patients need to be at the center of everything we do across the entire continuum of drug discovery, development, and commercialization," says Thomas Sellers, senior director, patient advocacy and corporate philanthropy at Millennium: The Takeda Oncology Company.

According to Mr. Sellers, there is a rational business imperative for keeping the patient at the center of the commercial strategy. Both regulatory and reimbursement decision makers are seeking to understand patient-centered drug development by reaching out to patient groups.

"It is essential to engage with patients as an industry to make development meaningful," Mr. Sellers says. "The leading companies in the sector all have robust patient advocacy functions and there seems to be a growing awareness of the importance of engaging with a range of patient groups."

A culture that recognizes the importance of the patient also improves employee engagement and enhances job satisfaction, he says.

"When companies become mission-driven organizations with a clear vision of how we can

FAST FACT

BY 2016, 3 BILLION PEOPLE, ALMOST HALF THE WORLD'S POPULATION, WILL BE USING THE INTERNET.

Source: Boston Consulting Group

THOMAS SELLERS
Millennium: The Takeda Oncology Company

contribute to better health and a brighter future for society, employees not only know what they are doing, but why they are doing it," Mr. Sellers says.

A patient-centered model for drug development also means finding ways to integrate the patient perspective in every phase of the development continuum, he says.

A good example is the Multiple Myeloma Research Foundation's ongoing patient study dedicated to mapping the genetic and clinical characteristics of blood cancer. Raw study data are made available to academic and industry researchers and Millennium's George Mulligan, director of translation medicine, was the only industry participant in the launch. (Editor's note: Millennium manufactures Velcade, a multiple-myeloma drug.) The three-part initiative was launched in September by the MMRF/MMRC to use big data and genomics sequencing to promote open access by sharing research data and to empower patients to find the right clinical trials via its CoMMunity Gateway.

"These initiatives involve collaboration between industry, academia, patient advocates, and healthcare providers and leverage existing capacity in the patient advocacy community including patient-led research networks, bio-banks, registries, regulatory engagement, and patient education and outreach," Mr. Sellers says.

Similar initiatives are happening in all different types of both tumor based and pan-tumor patient advocacy groups.

ILANA ROBBINS
Millennium

DR. TIMOTHY WRIGHT
Novartis

In recent market research carried out for Novartis, 92% of patients and 84% of seniors said they were comfortable using technology and the same study found that almost two-thirds of patients think that technology is helping them to better manage their health.

Patient E-Engagement

Partnering with patient advocacy groups — online and through mobile — for access programs, such as patient support and assistance, disease awareness and patient education programs, and public-policy advocacy are also a critical part of building a patient-centered healthcare system.

"Working together to eliminate barriers to treatment and to reduce disparities provides a common ground for engagement with patients," Mr. Sellers says.

"This is more important than ever, as healthcare budgets are shrinking worldwide and governments and payers are increasingly linking spending on treatments to outcomes," Dr. Wright says. "To meet this rising standard, the

We use our social spaces as part of our overall communications strategy along with traditional media.

healthcare industry needs to find new ways to capture and analyze real-world data to demonstrate the favorable benefit-risk value and the economic impact of our medicines."

One way Novartis is accomplishing this is by empowering individuals to more effectively manage their health and monitor long-term outcomes through the use of new e-based technologies.

"In recent market research carried out for Novartis, 92% of patients and 84% of seniors said they were comfortable using technology and the same study found that almost two-thirds of patients think that technology is helping them to better manage their health," Dr. Wright says. "We have tapped into this valuable resource and have devices such as the Breezhaler, which is used by patients to administer treatments for improving symptoms of chronic obstructive pulmonary disease. This simple device provides multiple forms of feedback and encourages compliance by allowing the patient to see when the capsule inserted into the inhaler is empty, and emitting a distinctive sound and taste when administered properly."

The Digital Patient

According to a recent Quintiles white paper, Harnessing the Power of the Digital Patient, patients may be the most under-used resource in the healthcare system, because many companies are using traditional approaches to interact with them. Understanding digital patients and providing them with the tools to become actively and involved in achieving better healthcare outcomes must become a new priority for the healthcare industry.

According to the report, the key to success in the age of the digital patient is to put patients at the center of the healthcare and communication network and establish relationships with them to enable them to participate in their own healthcare.

Ilana Robbins, manager, digital strategy and communications at Millennium: The Takeda Oncology Company, explains how her company is leveraging digital and social to engage with patients in various ways to improve health outcomes and experiences.

"We use our social spaces as part of our overall communications strategy along with traditional media," Ms. Robbins says. "It's amazing that we have an opportunity to truly change people's lives by helping to support them, connect with them, and to help them manage the ever-changing healthcare landscape."

Companies should be using digital and social tools to make the process that much less stressful and more engaging for patients, for example, consumer apps and digital solutions that work directly with a patient's treatment, improving their overall care.

Millennium's social media focuses on disease awareness, scientific advances, and the latest technology. The company engages with a very diverse audience that includes physicians, peers, media, patients, and others.

"I think there will be an a new wave of tools made for mobile and tablets that physicians can use to gain access to disease information, the latest clinical trials, drug information, and more," she says. "And this knowledge can help them better inform their patients and caregivers, allowing them to make better informed decisions about care." **PV**

Use of Tablet PCs in on the Rise

The global market for tablet PC devices in healthcare was expected to increase to $1.7 billion in 2013, reflecting an increase of almost 27% compared with 2012, according to Kalorama Information. The healthcare market research publisher says several factors are driving the growth of this market, including a shortage of qualified medical professionals, cost restraints, medical error reduction measures, expanding capabilities of devices, off-site medical care, and more.

Kalorama's estimate included sales for tablet devices, including hybrid and convertible tablets, where medical professionals or institutions have used these devices for at least 50% health-related use. The increasing adoption of tablets in the health industry will drive developers/manufacturers to continue to rollout new products, securing a healthy market for upgrades and replacement units.

"Tablet PCs are increasingly being used for a variety of tasks in the health field, including access to patient records at the point of care, improved viewing capabilities for medical images, and easy offsite patient monitoring," says Melissa Elder, Kalorama analyst and the author of the The Market for Tablet PCs in Healthcare report.

Viewing radiology images, ordering e-prescriptions, and filling out a patient's EMR record are among the tasks that physicians and other healthcare professionals are using tablet PCs for in a healthcare setting, according to the report.

VIEWPOINTS

MARK TAGGART
*Head of Patient
Reminders
Cenduit*

ePatient Reminders

Patients lead busy lives. They don't mean to not turn up for their visit or forget to dose. What typically happens in a clinical trial is that the longer the duration of the trial and the less frequent the visits, the harder it becomes for patients to remain compliant and engaged. Personalized SMS texts, calendar alerts, and voice messages increase patient motivation and help them feel more involved in the study. The result is a higher rate of retention.

When reminders are sent prior to and on the day of the visit, more patients arrive at the investigative site on time and in the correct state. In turn, the site sees patients at their scheduled visit time, the site's schedules are correctly loaded, and its visits with patients are more productive. When the site visit is productive, the patient is more inclined to call the site and reschedule another visit. This creates greater overall efficiency and better quality endpoint data.

BHASKAR SAMBASIVAN
*VP and Head of Life Sciences
Cognizant*

A New "E"cosystem

As life-sciences companies move toward a "networked company" ecosystem, including partners, providers, payers, pharmacies, and other external research organizations, the need to share information and collaborate becomes significant. The emerging business model now has the patient at the center of this ecosystem, which necessitates the need to better understand patient behavior and engage patients in different ways to influence care adherence and outcomes. Now more than ever, companies have to focus on generating insights from the vast amounts of data to drive greater R&D productivity and prove greater value of their products. Technology continues to play a very important role in all business needs driving transformation across the enterprise. New technologies such as social media, mobile solutions, the cloud, and big data analytics are being viewed as game changers in gaining a significant competitive advantage in this industry. Life-sciences companies that take a lead in harnessing the potential of these technologies will thrive in the future era of specialized medicine and outcome-based healthcare.

RAJ INDUPURI
*Executive VP, Principal Partner
eClinical Solutions*

Think End to End

Life-sciences organizations have myriad of clinical data being stored in various schemes, structures, and formats. This fragmentation makes it extremely difficult for companies to leverage their data for impactful decisions. To overcome these challenges, organizations need to implement end-to-end data management strategies that leverage robust industry standards such as CDISC data models. Also, technological advances such as cloud computing, analytics, and data repository solutions can provide cost-effective out-of-the-box capabilities that require minimal customization.

There are increasing regulatory requirements and trial design complexities in conducting clinical trials. Critical decisions are made quickly and real-time access to clinical data is needed to make impactful decisions. To keep up with changes, life-sciences companies are redesigning clinical trial operations and management to leverage e-solutions and technology. To be successful, organizations need to identify what processes need change management strategies, and implement comprehensive knowledge sharing and training on best practices.

R.J. LEWIS
*President and CEO
eHealthcare Solutions*

Integration Specialists

One of the biggest challenges to integrating multi-channel marketing lies in the area of discipline. There is a valid reason that agencies, suppliers, publishers, and other supporting services of life-sciences companies focus in a specific discipline, because it is where they are most skilled and offer the greatest value. When any organization claims to be completely integrated and offer full solutions across all channels, I get concerned. A jack-of-all-trades is a master of none and specialization breeds excellence. After all, you wouldn't let your family physician do your heart surgery, would you?

As clients seek higher ROI for their market spend, digital providers are offering more integrated solutions such as native advertising, or content integration, more specific and specialized targeting, and better tools and solutions for measuring creative performance and ROI. A solution that touches the entire customer experience provides better insights, deserves more accountability, and can deliver a more powerful result because it doesn't get watered down by having too many cooks in the kitchen.

TIM DAVIS
*CEO and Co-Founder
Exco InTouch*

Beyond the Pill

Technology is at the heart of pharma's strategy for moving beyond the pill. We'll see the most successful companies using central concepts, which easily adapt across difference territories, therapies, and phases. Cloud technology, access to devices, and increasing diversity in medical device integration enable a central platform to support tailored health programs, for example meeting differing brand manager needs across territories, or adapting programs from clinical research through to real-world use.

ROB ROBERTSON
*President and CEO
MedNet Solutions*

eClinical Study Validation

Sponsors and CROs are increasingly adopting do-it-yourself (DIY) EDC/eClinical solutions, given the ease of use, flexibility, and speed of deployment these systems can provide. These pay-as-you-go, SaaS-

based technologies also make EDC more affordable than ever — even for pre-clinical and early-phase studies.

While DIY systems provide significant benefits, one potential challenge can be the validation process surrounding each study. Even though an e-clinical solution's functionality should be validated by the technology vendor, the configuration of each study is up to the sponsor or CRO. Study validation may be a new responsibility for companies that previously conducted paper-based studies, or that relied on their technology vendor for study validation. It's therefore important to partner with an e-clinical solutions provider that offers practical, best practices validation assistance, know-how and advice.

SEAN HARTIGAN
Senior VP,
Multichannel/Digital Strategy
Ogilvy CommonHealth, part of
Ogilvy CommonHealth
Worldwide

Multichannel Marketing

Implementing effective integrated multichannel marketing (MCM) requires more than simply using many different disparate channels in your marketing mix. The biggest challenge is getting all of your multidisciplinary stakeholders — agency and brand team members alike — to accept this. And they need to embrace a holistic MCM vision that considers all tactics, e-solutions included, in context of one another versus silo thinking in a connected ecosystem that is customer-centric — content reflects customer needs/interests — and measurable, based on key performance indicators.

DR. BORIS KUSHKULEY
Chief Digital Officer
Ogilvy CommonHealth, part of
Ogilvy CommonHealth
Worldwide

A New Multimarketing World

In the age of Mad Men, marketing was about a "big idea" expressed as a powerful image with a striking tagline. In the past 20 years, the Internet, social media, mobile devices, and connected living rooms completely changed how we interact with the world. At the same time, cloud-based services, big data, and retargeting have created opportunities for a new marketing model. It is multichannel, transactional, and data-driven.

DAVID RECKNER
President
J. Reckner Associates Inc.

Making Market Research Seamless

The market is saturated with technology in the marketing research/customer intelligence space that works. What companies need to concentrate on is how to make the process frictionless and timely for our clients and, at the same time, engaging to respondents.

TIM GARDE
Managing Partner
Star Group & Star Life Sciences

Setting the Right Pace

The worlds of digital technology and content marketing are evolving at a dizzying pace. The life-sciences industry does not. Herein lies the challenge to implementing e-solutions in healthcare marketing: how, in this fast-paced digital world, do we create a comfort level for marketers accustomed to the deliberate pace of a regulated environment? Overcoming this requires a delicated balance of evaluating new technologies as they emerge; understanding the relevance of these technologies to relevant targeted audiences; and meeting the often competing expectations of marketing teams, regulatory bodies, and legal reviewers. A crucial step in this process is to gather key stakeholders early in the process to define requirements and align expectations

ALDEN MEIER
President
Trifecta Clinical

Technology is Key

Technology will play a key role in the emerging business model. Mobile technologies enable solutions that were not possible even a few short years ago. The rapid proliferation of mobile devices with ever-increasing capabilities allow data to be collected and distributed to a much wider audience in real-time. Time has become a competitive advantage and technology is what enables companies to accelerate time-sensitive activities.

The biggest challenge to integrating e-solutions isn't feasibility or technology, it's corporate resistance to giving up some control regarding sharing data and fear about introducing risks of data being compromised. The technology for integrating systems has come a long way through the acceptance of standards and is relatively simple to implement. Getting the approval to implement is far harder and tends to take a long time.

DOUG LIBERI
VP Operations
Y Prime

Collaborating for Success

Technology can simplify the equation for challenging new business models; however people will always be at the root of determining success or failure. To achieve positive results, the technology we use should provide a collaborative approach, which will ultimately provide win-win scenarios for the stakeholders in complicated research projects.

Technology must take into account how people work together, and facilitate rapid information exchange that empowers people to make smarter decisions in dynamically evolving environments.

E-solutions face the challenge of a lack of standardization in operational data used to manage clinical research. A typical technology vendor will be responsible for projects across multiple research sponsors, each potentially using unique terminology resulting in high costs associated with integration of each project's data.

To overcome this challenge we must look to collaborate with our competitors which may seem counterintuitive, however, could result in long-term efficiencies and improved relationships with customers and industry counterparts. Ultimately, this will provide value to all of our customers and the patients they serve.