Accenture Life Sciences
Rethink Reshape Restructure...for better patient outcomes

People + Technology:
A new double-helix for Life Sciences

How the combination of digital technologies and people creates huge opportunity for truly patient-centered healthcare
To date, digital has disrupted certain industries to a greater extent than life sciences. But that is rapidly changing. The convergence of digital technologies and people is helping drive three dramatic shifts in healthcare.

First, digital is transforming what patients expect from the services and care they receive. As consumers encounter new digital service models and approaches in one area of their lives, they increasingly expect to receive the same or similar in other areas. The impact of these “liquid expectations” is borne out by a recent Accenture survey of more than 200 executives at leading pharmaceutical companies in the US and Europe:

95% said they would be investing more in patient engagement technologies within the next 18 months.¹

But it’s not just patients who have liquid expectations, healthcare professionals, governments, providers, payers and business partners also do.

The second shift is the convergence of the consumer and clinical domains arising from ubiquitous connectivity and wearables. It’s what Fjord (Innovation and Service Design from Accenture Interactive) calls “Healthy is the New Wealthy”² in the Fjord Trends 2016 report. The wellness trend enabled by digital is opening up new streams of data, insights and revenue which is attracting new players from outside the traditional boundaries of life sciences.

And third, there’s also a significant shift in healthcare business models. The focus is switching from the volume of medicines, products and devices sold to the value delivered by patient outcomes achieved across an entire healthcare system. As an example, by 2018,

50% of Medicare payments will be tied to patient outcomes.³

In order to properly address these shifts and develop new strategies, life sciences companies need to enable people and ecosystem partners to accomplish more with technology. This pivot to people is the central theme entitled, ‘People First’ in Accenture’s Technology Vision for 2016,⁴ our most recent annual review of key technology trends. When combined with the latest Design and Services Trends from Fjord, it’s clear that future industry leaders are rethinking the critical role of people when harnessing advances in digital technologies.

We believe these advances can be categorized into four themes where we expect changes will be particularly profound over the next 12 months:

- **Volume to Value**
- **Intelligent Enterprise**
- **The Platform Business**
- **Liquid Workforce**
As the combined forces of balancing budget pressures, increasing patient expectations and emergence of digital technology create huge opportunities for new service delivery and connected healthcare, how can life sciences companies take advantage?

One of the principal influences identified by Fjord this year is the emphasis on wellness. We characterize this as “Healthy is the New Wealthy”. People are seeking greater involvement in managing their health and increasingly adopting new digital technologies and services that enable them to do so. Consumers are using health monitoring for the purposes of both leisure and preventative care.

But in order to benefit, life sciences companies have to understand how these developments affect their product strategies and invest in developing new services that focus much more closely on meeting changing consumer needs. While most life sciences companies have traditionally been designed for Business-to-Business-to-Consumer (B2B2C) and the focus on the B2B element of that dynamic has usually been adequate, that is no longer the case. It’s only by focusing on patients that companies would be able to generate the trusted relationships that can support the outcomes payers are looking for in an increasingly value-based market.

One opportunity comes from the shrinking size and cost of “wearables” and “nearables”, along with the infinite possibilities created by their connectivity via the Internet of Things (“IoT”) to demonstrate improved health outcomes in a way never before possible.

In terms of patient services, this means an evolution to the next generation of business models and strategies. Life sciences companies should continue to focus on what they do well in terms of researching and delivering new treatments. But they also need to think about developing their operating model in a way that enables them to create and curate complementary services.

38% of life sciences companies are automating routine tasks so they can free up time and resources to innovate and create new business models.

In the last year, we’ve seen companies achieving this through teaming relationships, acquisitions and other forms of collaboration. Just a few examples consist of: Proteus Digital Health which launched a provider partnership with Barton Health and a pharma partnership with Otsuka, both geared to promoting its ingestible sensor system. Meanwhile, Teva Pharmaceuticals acquired tech company Gecko Labs to develop its connected inhaler technologies.

Companies need to bear in mind that consumers expect and increasingly demand simplicity. The onus is on life sciences companies to integrate information and channels that deliver easy-to-use personalized services. It’s an area where the tech behemoth Google is making major investments. Through Verily, its life sciences business, the company is actively developing hardware and software solutions to transform patients’ lives. These consist of teaming to develop a ‘smart’ contact lens with an embedded glucose sensor which, it hopes, would make it easier for people with diabetes to monitor themselves continuously by measuring glucose levels in their tears.

New torrents of digital patient data like this can also help address the increasing demand for the more accurate and comprehensive information that’s needed to track therapy outcomes and comply with clinical trials.
So how should life sciences businesses respond? There are four considerations:

1. **Get to know customers more intimately than ever before.** That means deep immersion in their daily lives to understand what really matters to each of them. Companies recognize this, with nine out of 10 expecting to offer six or more patient-focused services over the next two years. These services consist of benefit coverage and access support, digital health counsellors and adherence program management. Backing this up, the largest investments will be targeted at technologies that interface with patients and healthcare professionals.

2. **Start by designing for outcomes.** If a service isn’t creating data to demonstrate improved outcomes, it’s unlikely to be adding value to either the business, or its customers. Overall, the industry is confident that it’s ready to move in this direction. In our survey for the 2016 Technology Vision, 88% of executives in life sciences companies agreed that their IT organizations are ready to respond to the demands of the company moving to an increased focus on patient and health economic outcomes.

3. **Identify where existing services can be enhanced or expanded.** Leverage what’s already available, and find ways to create new value by building on established and field tested foundations. To help achieve this, life sciences companies need to focus on capturing real data illustrating the impact their services have today. They must then use this technology and data to understand, adapt and differentiate themselves from competitors with new offerings that go beyond the drugs’ specific therapeutic benefits. An example at the far end of the service spectrum is WellDoc’s BlueStar® platform. Recently approved by the FDA (The Food and Drug Administration), the platform is the first mobile prescription therapy for type 2 diabetes. It provides real-time motivational, behavioral and educational coaching to help patients self-manage their diabetes treatment plan and is reimbursable by insurers.

4. **Measure the outcome of services.** There's plenty of work to be done here. In a recent survey by Accenture, only 40 percent of life sciences companies were actively measuring the success of their services and therefore able to demonstrate meaningful outcomes. Encouragingly, more companies are now planning to increase their investments in data analytics metrics, and reporting and tracking technologies.

**KEY POINTS**

- Technology and digital disruption means that patients expect more from life sciences companies than ever before.

- Patient services are the only way to meaningfully differentiate existing products and demonstrate meaningful outcomes... but only if you measure them!

- Services don’t need to be complicated; they need to add value and this can often be done by curating other services and partnering with new companies.

- If a service doesn’t make users healthier and their lives ‘better’ and/or ‘easier’ then it’s unlikely to be adopted long term.
The explosion of data in the life sciences industry presents both a major challenge and a great source of opportunity for companies that are equipped to handle it.

The sources of this data are proliferating rapidly. These range across the entire life sciences value chain, from connected devices and equipment to insurers and healthcare providers. In fact, according to our 2016 Technology Vision survey, leading companies are already tapping into new sources of data to deliver new products and services. For example, Pfizer’s using big data to find treatments for small patient groups. Boston Scientific and Accenture have developed a data-driven approach that aims to improve patient outcomes and reduce the cost of treating chronic cardiovascular conditions. And Fitbit has achieved HIPAA compliance, enabling it to handle patients’ personal health information.

To harness this data ocean, life sciences companies would not only develop partnering strategies with others in the health ecosystem, but also start making the most of the possibilities that intelligent machines offer to help manage, process and analyze data on an unprecedented scale.

The essential new co-worker in this world of data is the machine. Capabilities like artificial intelligence and automation are being used to complement human skills and people, providing opportunities for new growth and innovation. And as new technology breakthroughs proliferate, new investments will be made in natural language processing, computer vision, and knowledge representation and reasoning.

The two areas where executives expect these technologies to make a significant impact are in supporting medical diagnostics and clinical decision support tools faster, more accurate and more accessible. With the help of deep learning capabilities, it can contextualize imaging data by comparing it with large data sets of past images and analyzing ancillary clinical data. The goal is to analyze at half the cost, with twice the accuracy and double the speed of legacy approaches.

Intelligent automation could have an immediate impact on a life sciences company’s operations. For example, in pharmacovigilance, companies are challenged by the complexity of monitoring and reporting increasing volumes of data and can help to achieve a single view of product safety by using intelligent automation to process and analyze adverse event cases.

The pharmacovigilance department of one life sciences company piloted Accenture’s Intelligent Text Analytics Platform (iTAP) to demonstrate the feasibility and efficacy of an AI-based system for case processing. The results showed that fully automated operations can help to achieve 77 percent savings in processing time, while hitting precision and accuracy readings of more than 90 percent.
To become an intelligent enterprise, life sciences businesses should:

1. Establish a top-down strategic commitment to artificial intelligence and data science, consisting of R&D investment, innovation programs, and production development.

2. Establish a cross functional team, bringing together IT, Data Science and Domain advisors to establish a big data capability combining new sources of data, such as EMR, Wellness and social media.

3. Look at how technologies can be applied to internal operations by piloting a machine-learning approach to discover new data associations.

4. Develop machine-learning skills utilizing defined data for a very specific purpose, choosing an application that benefits from advanced analytics, such as personalization.

5. Create a training program to help confirm data scientists and IT solution architects are educated in the latest deep-learning and AI technologies, specifically in natural language processing and image recognition.

KEY POINTS

- The availability of new data sources is finally creating real opportunities for companies to create new products and services that benefit clinicians, healthcare systems and patients.

- When combined with the mainstream use of artificial intelligence, this creates opportunities for life sciences companies to simplify business processes and reimagine their product offerings.

- Simple internal applications of advanced analytics and artificial intelligence provide an opportunity to build internal core capabilities that would lift future products and services to a new level.
The platform becomes the business model enabling life sciences companies to create innovative services, and new sources of value. What new strategies will companies need to develop to take advantage of these developments?

According to our Technology Vision survey,

80% of life sciences executives agree that platform-based business models will become part of their organization’s core growth strategy within three years.

These technology platform based business models allow companies to create entire ecosystems that do much of the work to grow the company and help drive strategies. Life sciences companies would be able to engage in new ways with patients, providers, governments and other stakeholders, as well as with one another to deliver innovative products and services using platforms they co-create or choose to work with.

In the 2015 Life Sciences Technology Vision, we predicted that potential disruptors would emerge around four eco-systems: 1) provider 2) patient 3) product, and 4) regulatory / government.

We are now starting to see healthcare and life sciences companies make significant investments to build their platform strategies, changing the way they do business. It’s not only “health digitals” like Verily and 23AndMe that are evolving platform strategies. Digital leaders in the industry are doing the same.

The Philips HealthSuite® platform, for example, is an initiative with three different cloud partners: Salesforce, Amazon AWS IoT, and Alibaba AliCloud. It’s harnessing the cloud to enable new market opportunities, from patient management and data collection to consumer and home devices.

Kaiser Permanente,17 through its HealthConnect platform, has provided health professionals and 9 million of its members with real-time access to medical records.

Roche and Qualcomm, meanwhile, have entered a strategic collaboration to improve remote monitoring and management of chronic disease patients. Roche will utilize Qualcomm’s 2Net platform to seamlessly and securely capture data from a patient’s medical devices, beginning with anticoagulation meters, and transmit it to Roche’s cloud-based back-end services.18

These industry platforms could create a “network effect” that could break traditional value chains and the limitations of a supply-side economy within the life sciences industry. Health digitals, in particular, are looking at healthcare through a completely different lens (data-driven, wellness-focused). In the process, they’re opening up multiple revenues streams through which traditional health and life sciences companies, technology companies, and platform providers can generate profits.

In the Platform Economy, the platform becomes the product. That doesn’t mean life sciences companies are giving up on existing business models. For instance, at its core, Philips is still in the business of making medical devices.

81% of life sciences executives believe platform-based business models are defining the new rules of business in the digital economy.
To begin to capture the advantage that these models would produce, life sciences companies should focus on two areas:

1. Accelerating their uptake of digital technologies and cloud foundations as a crucial first step towards breaking into the platform world. The vision is to reinvent healthcare through an ecosystem of interconnected patients, providers and partners.

2. Adapting to the new business rules of the platform economy. These will provide different paths to growth that would not only generate high margins but will help rapidly scale up to hundreds of millions of patients, devices, and sensors processing a seamless flow of data that will improve the quality and cost of patient care.

KEY POINTS

- Life sciences leaders are accelerating their uptake of digital technologies as a first step in breaking into the platform world, with a bold vision to reinvent healthcare and be able to support an entire ecosystem of interconnected patients, providers and partners.

- The new business rules of the platform economy provide different paths to growth that will not only generate high margins but will help rapidly scale up to hundreds of millions of patients, devices, and sensors processing an endless flow of data, aiming to improve the quality and cost of patient care.

- Whether a company 'owns' a platform ecosystem or is plugging into another's, it is essential that they have a platform strategy and the business know-how to exploit it.
Finally the workforce will be freed to focus on outcomes and the needs of the customer. What will this mean for the salesforce and more broadly as life sciences businesses harness a "liquid workforce" to increase agility throughout their organization?

Life sciences companies must focus on creating new corporate cultures where technology enables their people to constantly adapt and learn. As GE shows, this "liquid workforce" can become a source of competitive advantage in its own right. Through a new approach called FastWorks, GE is embedding lean startup practices into the workforce, pushing it to change faster and make smarter decisions, while staying close to customers. It’s doing away with rigid approval processes to instead allow employees to make rapid changes to their projects or quickly switch direction.

73% believe a more fluid workforce will improve (vs. derail) innovation.

For life sciences companies, this "liquid workforce" plays out on two key dimensions. First, within the enterprise. To capture opportunities ahead of the competition, they need to attract and retain the digital talent that will be a decisive component of future competitiveness. Right now, companies are struggling to address this challenge. Research shows that it’s a live issue in the life sciences industry where technology firms ("fourth players") are entering the healthcare market and attracting the top talents. These new competitors are making significant investments aimed squarely at disrupting existing providers in the new health ecosystem. As evidence of this, venture capital investment in digital health has increased rapidly, reaching record highs of $4.5 billion in 2015.

53% of business leaders find it hard to attract and retain millennial talent that’s the core component of a liquid workforce.

It’s a live issue in the life sciences industry where technology firms ("fourth players") are entering the healthcare market and attracting the top talents. These new competitors are making significant investments aimed squarely at disrupting existing providers in the new health ecosystem. As evidence of this, venture capital investment in digital health has increased rapidly, reaching record highs of $4.5 billion in 2015.

Life sciences companies urgently need to attract talent that enables them to compete with these new health digitals. For example, we’re seeing some life sciences companies setting up operating groups in Silicon Valley, as well as recruiting talent in a targeted way from tech hubs. More broadly, the cross-fertilization between healthcare and technology is being driven by initiatives like the American Medical Association’s ‘Accelerating Change in Medical Education’ program, which is helping to fund medical school classes that teach how technology can be used to enhance patient care.

As well as attracting digital talent, they need to engage existing employees. That means adopting engagement approaches that reflect millennials’ requirements. One pharma company, based in the Netherlands, is considering a joint R&D facility initiative that will house researchers and academics from different companies to create a campus-style environment in which innovation can thrive. Other businesses, like Merck and Novartis, are establishing dedicated digital health innovation units that closely resemble the tech start-up ethos and experience for potential recruits.

The other key dimension for the "liquid workforce" is out in the marketplace. Leaders in the life sciences industry understand that customer-centricity is no longer an option. Delivering to that new imperative, they’re engaging with the business to develop the tools and services that stakeholders value. It’s essential for sales reps to keep pace with these developments, as well as understanding the digital environment in which physicians operate every day (e.g. EMR systems, e-prescribing and other connected health advances).

Sales rep engagement skills should be evolved so they can elevate and extend conversations with doctors and other stakeholders; and communicate fully aligned with interaction in the digital channels. For example, by using analytics to demonstrate how specific therapies could impact particular conditions specific to local populations, sales reps could be given in-depth, data-backed information to support their discussions with doctors and other healthcare providers. Digital tools can be used to support unique interactions with each buyer. That could include using mobile devices, virtual conferences, taking advantage of telepresence and presenting therapies through augmented and virtual technologies – for example, offering doctors immersive visualizations of oncology therapeutics via smart glasses.

Crucially too, the sales talent mix must be invigorated by hiring new resources with strong B2B sales skills and digital technology awareness. This would consist of account managers who can manage relationships with institutional purchasing organizations and operate in a more networked sales environment.

83% say training their workforce is more important today than three years ago.
To build a liquid workforce, life sciences companies should:

1. Identify priority roles within the business that are unfilled because the appropriate talent is hard to find.

2. Determine the investments that would be needed in facilities, technology and people to expand the organization’s training capabilities.

3. Create a new employee engagement strategy based on what millennials demand from their employers.

4. Identify where digital tools/capabilities can be used to support more effective sales rep/customer interactions.

KEY POINTS

- Advances in digital technologies, combined with the increased investment and activity in digital health, create an environment in which developing the appropriate talent becomes critical for both customer-facing as well as enabling roles.

- Life sciences companies in particular are at risk of losing competitiveness in the war for digital talent based on the changing nature of their workforce and new digital health competitors.

- With new skills and digital tools, the sales force will address the requirements of a broader network of buyers and influencers and deliver innovative solutions that help doctors deliver better service to their patients.
Every business will be starting from a different point in the critical journey that lies before them. Thinking about the questions below can help companies gauge their readiness for the road ahead:

- Which emerging business model is most applicable to the different parts of the business?
- To what extent will product portfolios come under pressure to demonstrate quantified improvements in patient outcomes?
- How will services differentiate or enhance product portfolios?
- What strategy will be needed to create or engage in new platforms that would shape the industry?
- How will the company set about creating new partnerships with new digital health businesses?
- How effectively does the business attract and develop digital-native talent?

As they address these questions, life sciences companies will need to focus on the outcomes that digital can deliver: flexibility, simplicity, value and a decisive pivot to the patient. Leaders already recognize that simply investing in more technology isn’t the answer. In the digital era they understand that their success depends on combining people and technology to differentiate themselves and outperform.
About Accenture Life Sciences

Accenture's Life Sciences group is dedicated to helping companies rethink, reshape or restructure their businesses to deliver better patient outcomes and drive shareholder returns. We provide end-to-end business services as well as individual strategy, digital, technology and operations projects around the globe in all strategic and functional areas—with a strong focus on R&D, Sales & Marketing and the Supply Chain.

We have decades of experiences working hand-in-hand with the world’s most successful companies to improve their performance across the entire Life Sciences value chain. Accenture’s Life Sciences group connects more than 15,000 skilled professionals in over 50 countries who are personally committed to helping our clients achieve their business objectives and deliver better health outcomes for people around the world.

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