Why life sciences companies need to tap technology to gain a competitive edge—and what that means for the chief information officers (CIO) role

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Abstract: Fundamental changes in the marketplace for medicines, as well as the rapid and continuing evolution of technology are bringing new challenges and opportunities for life sciences companies and their contribution to healthcare systems. These changes bring pressure on chief information officers (CIOs) within the healthcare industry to play an increasingly strategic role in advancing business success and delivering digital transformation.

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Fundamental changes in the marketplace for medicines, as well as the rapid and continuing evolution of technology, are bringing challenges and opportunities for technology to be used in new ways within life sciences companies.

The greater incorporation of innovative digital and information technologies by these organizations stands to alter both the development and delivery of medicines. Companies are exploring ways to wrap digital technologies and services around the pill to improve customer experience and outcomes, which will contribute to cost-savings to the healthcare system and optimized care.

In fact life sciences companies are now launching products at a more rapid rate, and in a greater number of therapy areas. As manufacturers focus on these innovative product launches, operating budgets remain strained by the simultaneous investments required, while their information technology (IT) departments are finding they need to do more with limited resources.

Several changes within the marketplace for medicines have simultaneously created a more challenging commercial environment requiring new technological approaches. The rise of specialty medicines for narrow patient populations requires more precise and orchestrated customer engagement—often through digital channels—aimed at fewer and harder-to-reach treating physicians.

Growing efforts by cost-conscious payers and health systems to optimize treatment and pay for patient outcomes are elevating the need for big data, and requiring manufactures to invest in large information systems that can be used to prove the role and value of their medicines.

The rapid and continuing evolution of technology is putting additional pressures on the IT organization to deliver both innovation and efficiencies to their company. The rise of mobile, cloud, and other new digital and information technologies are now a new frontier of competition among life science companies, putting new demands on the IT organization and requiring new specialized knowledge and skills.

Organizations must transform both strategically and operationally to capitalize on this technological innovation and at the same time ensure corporate profitability by reducing costs. This environment therefore brings opportunities for technology-minded individuals to emerge within the healthcare arena to play an increasingly strategic role in advancing life sciences companies' business success through transformation, and lead them along a path of

technological innovation.

While most companies have completed centralizing their IT functions to achieve efficiencies, the simplification of their organizations through technologies is not occurring as quickly as they hoped. For example, migration to the cloud among life sciences companies is progressing slowly, which means that the internal complexity of their infrastructure remains unchanged and that hinders their ability to transform.

The IMS Institute recently conducted an independent technology assessment of dozens of life sciences companies using a proprietary Information and Technology Transformation Scoring (ITTS) Framework. This framework incorporates several strategic considerations that include: innovation, disruption, organizational transformation, big data, analytics, infrastructure as well as the future of work itself.

The highlights of this assessment are noteworthy:

(I) On average, 85% of companies with centralized IT functions outperform across all elements of transformation within the ITTS, and companies that use cloud-based technologies for more than 25% of their software needs similarly outperform;

(II) However only 30% of companies have so far adopted cloud software to this extent, forgoing the simplifying effects of this technology;

(III) Company analytic systems, so important to simplifying big data, are still primarily operational rather than strategic, with fewer than 10% of companies having systems that frequently have predictive and prescriptive capacities to guide user action.

Internal customers of life sciences companies, who report significant need for greater insights from big data, may also still find their systems fall short of what is needed.

As leadership in new functional areas within IT such as digital and mobile health become viewed as critical to success, healthcare companies are hiring new chief information officers (CIO) as well as creating new digital and innovation leadership roles to address this growing need.

Almost half of the life sciences companies profiled have CIOs who have been in place fewer than 3 years, and 70% fewer than 5 years. For small companies, 41% of all CIOs were hired just within the past year.

More than two-thirds of today's CIOs were also hired from outside the company, with external hiring ranging from 82% for small companies to 52% for large companies, who have a wider pool of internal candidates to draw from.

Despite the critical role of the CIO in business transformation, the role has still not been elevated among the C-suite, with less than one quarter of CIOs being part of the company's executive team and only 14% at large companies.

This may in part be due to a perception of IT as playing a limited role in innovation. Two thirds of life sciences companies view their IT function this way, and some have begun to look beyond the CIO to new strategic IT roles.

The CIO role has often narrowed in scope as responsibility for areas such as R&D bioinformatics, mHealth, genomics and Real World Evidence have shifted to the R&D or commercial organizations.

The assessment found that more than 82% of companies have established new IT roles beyond the traditional CIO's area of influence within digital, mHealth, data and innovation functions. These roles challenge the CIOs role in innovation, although which roles will own future IT innovation remains undetermined.

Among companies that have an innovation program that includes IT, the CIO is currently involved in this program 53% of the time; much more often than the Chief Marketing Officer, Chief Technology Officer or Chief Data Officer, indicating the CIO still plays the traditional role of owning the innovation process. However, the Head of Digital Marketing was involved slightly more often—59% of the time-making digital competencies critical to retaining leadership of innovation.

The CIO is still in the best position to lead technological innovation, but what life sciences companies are looking to the CIO to deliver has changed. Companies are looking to CIOs to strategically build business value around "the pill" using digital technologies, embed change and innovation in their company culture, and deliver horizontal efficiencies.

According to Egon Zehner, a leading Executive Search firm, from a hiring perspective, the role of a Life Science CIO has already evolved, with CIO job role descriptions now reflecting the search for change using new words like innovation, trends, and transformation and the need for efficiencies using words such as cost-effective, KPIs, metrics, and standardization and shared services.

With new "digital" competencies viewed as keys for success, assessments by CEOs of CIO candidates increasingly focus on a combination of digital and core competencies. Core competencies of strategic orientation, results orientation, team leadership, and collaboration and influence are still essential, but in pursuit of future digital leaders, CEOs are also looking for candidates with consumer centricity, digital fluency, mHealth understanding, data orientation, adaptability and change leadership.

Since these digital competencies are difficult to find among CIO candidates, CEOs are shifting to a model looking at candidate potential to grow into the competencies needed for the digital age—and are testing whether candidates have traits to help bridge the gap toward a technology-based future.

Ultimately, if CIOs develop skills for the new era of digital transformation, they can avoid new roles creeping in on innovation. The need for life sciences companies to rapidly embrace digital opportunities has laid the groundwork for CIOs to take on a truly strategic role regarding technology adoption and mHealth in general.

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For more insights regarding the evolving role of CIOs within the life sciences industry you can download the report from Egon Zehnder and the IMS Institute titled "New Strategic Information and Technology Roles in Life Sciences Companies" at www.imshealth.com.

Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.