Prescriptions for Healthcare's Digital CIOs

Healthcare CIOs are poised to expand their influence amid a “perfect storm” of regulatory and market forces that require a digital response. Our latest research reveals the new workstyles and mindsets CIOs should adopt to prepare for this important organizational role.
Executive Summary

Chief influence officer. Chief talent officer. Change agent. Coach. Politician. Technology evangelist. These terms describe the array of roles today’s healthcare CIOs see themselves playing, which stretches far beyond serving merely as a custodian of legacy systems and support functions. As the industry adopts new business models and responds to new competitive and market forces, CIOs say they too must adapt by developing a set of powerful new skills, mindsets and work styles that help both themselves and their organizations nurture a more digital sensibility.

That’s the story revealed by our exclusive CIO survey, conducted in late 2015, in which we sought to better understand where healthcare organizations were in their digital transformation, and to gauge the strategic role CIOs are playing in these endeavors (see Methodology, page 12). We asked healthcare CIOs about a range of topics, including:

- What are the external forces driving digital in their organizations?
- Who is leading digital transformation?
- How is the role of the CIO changing as a result of digital transformation?
- What are the barriers to digital adoption?
- What are the key elements of successful digital transformation?

By understanding the current market forces shaping digital adoption within healthcare, organizations can better develop digital strategies and tactics. For example, the entire healthcare industry must effectively respond to the rise of digitally-savvy, empowered consumers, who increasingly have more say over where they spend their healthcare dollars. As one CIO respondent said, “Our healthcare customers … expect from us the same experience that they currently receive from the other sectors, such as retail, banking or hospitality.”

Equally important is the emergence of value-based care (VBC). Under VBC models, healthcare organizations are rewarded based on quality of care measures vs. volume of services delivered. Underlying both these trends is the need to rein in costs. Our experience across industries has shown that digital technologies can enable new strategies and processes that reduce costs, improve consumer engagement and fuel innovation. (For more on this topic, see our white paper “Digital Process Acupuncture: How Small Changes Can Heal Business, and Spark Big Results.”) Healthcare remains a relatively green field in this regard. “The healthcare industry has yet to propel digitally,” said one respondent. “Healthcare is significantly behind other industries like retail. There’s a long way for us to travel.”
As industry CIOs set out on the digital journey, they will encounter new traveling partners. Among the key findings revealed in our research:

- Improving the member-patient healthcare experience is the driving factor for adoption of digital capabilities in healthcare, according to more than half (52%) of respondents. Another 25% named a better overall patient experience and reducing the cost of care as key drivers.

- The vast majority of CIOs (97%) say they must partner with the chief marketing officer (CMO) and chief operating officer (COO) to flesh out the organization’s digital strategy.

- The CMO relationship is particularly important, as most respondents (86%) said that marketing owns the digital customer experience.

- Top barriers to digital transformation include limited budget (77%) and complex legacy and core IT systems (58%). In addition, nearly half of respondents (49%) identified organizational culture and lack of commitment from the board or CEO as a top barriers.

- The CIO’s ability to take a leadership role in the organization’s digital transformation is critical to the success of these efforts (91%).

- Digital business demands new capabilities of CIOs, with 98% saying they must move from “improver,” to “influencer and transformer.”

These findings strengthen our conviction that healthcare CIOs need to take on the role of “chief integration officer” by drawing on their unique understanding of healthcare data, technology infrastructure and operating processes. Currently, the healthcare CIO alone fully understands where critical member-patient data resides across the myriad legacy systems, as well as its breadth, depth, sensitivity and resulting interdependencies. The CIO is best positioned to combine that expertise with the skills of the IT organization to successfully guide systems and data integration across clinical, operations, financial and administration processes.

Healthcare organizations will also look outside the IT organization – and even outside the healthcare industry – for digital transformation expertise. CIOs said they must build stronger relationships throughout the organization to become change agents. Doing this effectively will require CIOs to create new personal skill sets and retool how their organizations deliver services. As one survey respondent explained, “Digital transformation has taken over everywhere, and it is effective. So why not embrace the change?”
CIOs are prioritizing the relationship with the CMO, which is now seen as just as important as the relationship with the CEO.

**Member-Patient Healthcare Experience Drives Digital Adoption**

Delivering a satisfying experience across all patient and member touchpoints is now an important competitive differentiator for healthcare organizations. It is also unfamiliar territory, requiring virtually every department in the healthcare organization to adopt consumer-centric processes, most of which will require or generate data, involve a digital component and potentially interoperate with a legacy IT system. While the organization refocuses its processes by becoming patient- and member-centric, the CIO is in the best position to detail the possibilities and limits of existing systems and processes to deliver an integrated and enhanced customer experience.

As patient, member and consumer touchpoints increasingly become digital, CIOs are prioritizing the relationship with the CMO (see Figure 1), which is now seen as just as important as the relationship with the CEO. Further, respondents reported that a major portion of digital funding is coming from the marketing department’s budget.

**The CIO-CMO Partnership Is Crucial to Digital Transformation**

Base: 50 healthcare sector CIOs
Source: Cognizant Research Center
Figure 1
Healthcare CIOs reported that CMO organizations have a strong understanding of technology’s complexities, such as integration and security challenges (see Figure 2). Yet our study also hints at tensions health organizations are experiencing with ownership of customer-facing initiatives. In our experience, many business units have adopted technology solutions on an ad hoc basis, with a wide variety of disparate apps and point solutions, none of which are properly aligned with the corporate strategy. Because they’re typically not integrated, these systems are unable to deliver a consistent consumer experience.

The CIO organization must become a broker of these point solutions, ensuring lines of business have the capabilities they require while enabling smooth, rational IT operations and data integration to achieve an enhanced and consistent consumer experience.

We also see more healthcare organizations hiring chief customer experience officers, sometimes from retail or other consumer-oriented, non-healthcare industries. Yet it is the CIO and team who have deep knowledge of data contained in systems of record that the customer experience officer and/or CMO organizations must tap into to craft and enrich the customer engagement layer and deliver a compelling, personalized experience. While many CIOs (87%) say CEOs must promote collaboration between the CIO and CMO, a stronger tactic may be for the CIO to “package” this data expertise as a service, securing an integral role in digital transformation that transcends traditional delivery.

**Digital Transformation Challenges**

Respondents listed numerous challenges to digital transformation, including budgets, legacy systems complexity, cultural change and a lack of commitment from the top levels of the organization. CIOs can take the following measures to play a leadership role in overcoming these barriers:

- Pursue venture-capital style funding for digital initiatives (see Quick Take, page 6).
- Use a managed services model to pivot to digital more quickly while reducing capital costs.
- Deploy analytics tools and intelligence layers to drive more meaning and insight from the rich data sets inside legacy systems.
- Deliver cybersecurity solutions and ensure new digital solutions are compliant.

By proactively addressing these issues, the CIO and IT organization can model new behaviors and deliver innovative services that stimulate culture change, inspire C-level leadership and meet budget constraints.
Leadership Is Critical to CIO Success

Respondents widely believe that CIO leadership is crucial to digital transformation success, as CIOs can draw on their extensive knowledge of the business challenges and opportunities of the organization, as well as their technical expertise (see Figure 3). Most CIOs say they already fully participate on the organizational executive team, are important to business strategies that involve digital components and spend “much time” aligning digital strategy with business needs.

For these approaches to succeed, it will be critical for health organizations to also adopt the Silicon Valley mantra of “think big, start small, fail fast” and recognize the value of lessons learned from failures. These can be used to fine-tune efforts. Net savings from enhanced processes and revenues from growing market share gained via new services can be funneled into additional innovation.

Critical Skills and Competencies of the Digital CIO

Percent of respondents who agree or strongly agree with the following CIO attributes.

- Leads from the front: 89%
- Politically savvy: 86%
- Innovator/co-creator: 87%
- Game changer: 81%
- Transformational leadership: 80%
- Networking and relationship building: 80%
- Socially savvy: 79%
- Big risk taker: 77%

Base: 50 healthcare sector CIOs
Source: Cognizant Research Center
Figure 3
These numbers may help explain why IT is often seen as a supporting player within the healthcare organization, delivering important functions but neither leading nor sparking transformation. In our observations, CMOs, chief customer experience officers and chief digital officers are often perceived as key change agents.

**Making the Transition to Chief Influencer and Transformer**

However, we believe CIOs and IT organizations can bring an invaluable set of skills, capabilities and experience to their organizations’ transformation and digital adoption needs. CIOs are also best equipped to emerge as the chief integration officer. This “new” CIO is uniquely positioned to understand which of the many systems and applications, databases and processes in the organization will have a direct impact on customer-facing initiatives. That knowledge then becomes a springboard for the IT organization to develop a variety of critical capabilities that are core to digital success.

To operate effectively as the chief integration officer, CIOs should focus on building new capabilities into the IT organization, such as integration services, analytics and information management, and cybersecurity and privacy.

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Integration Services

Healthcare's systems of record are often proprietary legacy systems that are rich in data but difficult to integrate. The CIO organization has a unique understanding of these systems, including what role they play in the organization's operations, their interdependencies with other systems and the breadth and depth of data they contain. This knowledge positions the chief information/integration officer and the IT organization to develop a portfolio of critical services for digital initiatives. These services include:

- **Deploying systems of intelligence.** New systems of customer engagement typically must draw on clinical, claims and/or financial data stored in legacy systems of record. Care managers rely on clinical data to decide whether an intervention is needed; payers need to retain business from members aging into Medicare plans. To ensure engagement systems offer these insights and choices, organizations need to develop a "systems of intelligence" layer. Systems of intelligence will power engagement interfaces with data and analysis drawn from systems of record, as well as ensure new data gathered from each customer interaction is properly stored and accessible.

  CIOs must position the IT organization to own the process of deploying systems of intelligence. They also need to help the organization appreciate the possibilities for using existing data to create powerful consumer engagement experiences by bringing innovative ideas to the table and delivering them more quickly than before.

- **Developing platform strategies.** It has become almost impossible for healthcare organizations to innovate with the same speed the market does. To keep up, some healthcare leaders are deploying digital platforms that support a library of vetted third-party apps embedded in a common engagement layer so users experience a consistent look and feel across all services (see Quick Take, next page). IT organizations must take a lead in evaluating and deploying these platforms and apps, and ensuring integration with other systems as necessary.

- **Creating application programming interfaces (API).** Related to the platform strategy, some healthcare organizations are opening application program interfaces (API) to third-party developers, enabling them to access carefully selected data sets and IT system services so they can brainstorm and build next-generation health apps. The CIO has the expertise to lead these "sandbox" initiatives and evaluate their outcomes.

- **Ensuring post M&A data/systems integration.** The industry's rampant M&A activity will only prove successful if merging organizations streamline integration of their systems, processes and data to realize economies of scale. CIOs are uniquely positioned to lead these efforts, with their understanding of IT infrastructures, data architectures, systems, supported processes, etc. This "insider's intelligence" is critical to smooth integration of critical systems.

- **Brokering technology contracts and services.** IT should be the organization's "technology broker," helping non-technical areas source technology, align digital initiatives with the overall business strategy, and integrate systems and services. IT very likely has existing vendor relationships that can help manage these services and ensure they meet security and compliance requirements.
How Open APIs Help Healthcare CIOs Lead Digital Transformation

While healthcare organizations need to foster internally driven innovation, our experience indicates that not all organizations can equal the market’s venture capital-backed speed and agility in developing new services and processes. Leading a platform strategy enables healthcare CIOs to capitalize on market-driven innovations while still ensuring members and patients receive a high-quality, seamless experience.

Healthcare platforms encompass four layers:
• A foundational layer that supports the systems of record.
• A data integration layer.
• A powerful new intelligence layer that is supported by the data integration layer.
• An experience and engagement layer.

An app store-like function enables clinicians and business users to choose from vetted, pre-integrated apps, so they can quickly access the functionality they need. The CIO can help maintain digital governance, ensuring these apps fit into the overall digital vision, as well as the routine yet vital operations and maintenance strategies.

The platform also provides developers outside the organization with access to APIs, which can introduce out-of-the-box ideas about how to use the wealth of data in the systems of record. These APIs enable developers to easily incorporate healthcare services into their applications that can be delivered through the engagement layer to end users through a variety of devices, from smartphones to clinical monitors.

Platform strategies enable more business agility, yet they also require technology, integration and data expertise to deploy successfully. Similarly, deciding which data and services to expose in an API is an especially delicate process in healthcare, with its myriad privacy regulations and stores of extremely sensitive data. With their expertise and experience in all these areas, the CIO and IT team are naturals for championing and executing on platform-based innovation.

Analytics and Information Management

“Retailers would kill to get their hands on data sets as large as ours,” one CIO said of healthcare’s vast information stores — just before pointing out that privacy regulations restrict how organizations may use that data.

CIOs have a unique appreciation for the volume and granularity of healthcare data and must use this knowledge to develop strong data analysis capabilities within their organization. These analytics skills can become a core service that IT provides to other areas of the business and even monetizes as a commercial service for other healthcare organizations.

Cybersecurity and Privacy

Data security and privacy are key aspects of delivering a better member experience. IT is well versed in complying with healthcare’s privacy regulations. Further, IT is best suited to understand the technological complexities of securing and protecting the health organization’s specific systems. Predictive analytics, increasingly used in security to identify behavior patterns and potential vulnerabilities, requires big data sets, which lands in the CIO’s sweet spot.
That said, the IT organization may need to acquire its own analytics expertise to better understand security loopholes and patterns of malfeasance. Given that half of CIOs (55%) say privacy and compliance issues are concerns for healthcare digital initiatives, the IT organization can carve out an important role in this space, with the CIO ensuring that security and compliance are primary considerations when new digital projects are launched, as well as providing cyber-protection solutions and services (see Figure 5).

Navigating the Way Forward

Respondents proclaimed themselves ready to take on an array of new responsibilities and skills to meet the demands of digital transformation (see Figure 6). Just as this step involves a self-assessment to identify needed skills, CIOs can also lead an assessment of their healthcare institution’s digital capabilities and areas that need fortification. This exercise equips the CIO with intelligence that must be passed along to the entire organization to succeed at digital transformation. It also will identify where the IT organization may lead.

Patient/Member Touchpoints

- **Required digital capabilities: Customer centricity.**

  While the healthcare industry has always focused on serving patients and members, organizations rarely took a consumer-centric approach in their processes; now, however, they must give members and patients greater autonomy and choice, and strive to meet their expectations. The CIO has the most universal view of the healthcare systems, data and tools that affect the patient/member experience.

Strategy and Innovation

- **Required digital capabilities: Agility, continuous iterative planning cycles, openness to risk and failure, institutional innovation.**

  To execute true digital transformation, healthcare organizations need to radically reshape existing institutional and industry business models, which requires moving away from heavy processes, short-term perspectives and innovations that focus only on products or services. Because the consumer healthcare experience is not controlled by one institution or system, innovations need to redefine what the industry considers “standard practice,” which will almost certainly involve collaboration and partnerships — yet another opportunity for CIOs to develop negotiating skills.

Use of Insights

- **Required digital capabilities: Data-driven culture.**

  The data-driven organization makes decisions based on metrics vs. opinions. Healthcare is already moving in this direction with evidence-based care; now it must extend that rigor to other processes, including generating and testing ideas. The CIO can lead in recommending analytics tools and methods.

Leadership and Culture

- **Required digital capabilities: Employee empowerment, new metrics for success, transparency and trust.**

  CIOs must lead by example, taking an entrepreneurial approach to recommending and developing solutions and services for the healthcare organization. The majority of CIOs (83%) said their teams are already working with the CMO’s organization on enterprise-wide digital transformation projects. This cross-functional
activity can provide opportunities for IT to shape new products and services that require integration and analytics expertise, such as including test results and interpretations in member notifications. CIOs should incent and reward team creativity and innovation, as well as for reaching operating metrics targets.

**Products and Services**

- **Required digital capabilities:** Smart, connected design; interoperability with ecosystems and platforms; focus on marketing and monetization.

Healthcare is already connected to the “Internet of Things,” from wearable fitness devices to bedside monitors. The CIO must own efforts to weave these capabilities into an integrated, seamless experience for members and patients. This can include integrating data from wearables into analytics programs that health coaches can use to provide nutrition and fitness advice, or helping clinicians analyze data to improve workflows.

**Systems and Processes**

- **Required digital capabilities:** Scalability and automation.

Using their IT expertise, CIOs can help scope the resources and methodologies required to successfully replicate the success of small projects on a broad scale. CIOs should also lead the organization’s adoption of robotic process automation (RPA) for the many repetitive, rote tasks involved in healthcare delivery. (For more on this topic, please see our white paper “The Robot & I: How New Digital Technologies are Making Smart People and Business Smarter.”)
Individual digital projects are not the same as digital transformation, and the CIO can drive home this point by leading both the IT organization and cross-enterprise stakeholders through this assessment. Just as the healthcare CIOs in our survey detailed the evolution of their roles, healthcare organizations must also undergo a similar process, reimagining business models, organizational structures, talent requirements and more. The CIO can model this process for the rest of the organization and, by doing so, create a multifaceted and rewarding role for themselves. Healthcare CIOs can lead their organizations to a point at which “being digital” is synonymous with delivering high-quality, high-value care that anticipates and exceeds member and patient expectations.

Methodology

Our study was fielded in November 2015 to 200 North American CIOs and those with similar IT leadership job titles across the banking, P&C insurance, healthcare and life sciences industries. This white paper focuses exclusively on the responses provided by 50 CIOs from the healthcare industry.

The questionnaire was instrumented by the Cognizant Research Center (CRC) and conducted via phone by our partner E2E Research. The interviews allowed time for open discussion, and verbatim comments were recorded with respondent approval. The findings (split equally across the previously mentioned industries) were jointly analyzed by CRC and Cognizant Business Consulting.

Footnotes


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