

Digital Health

Healthcare On Demand: New Provider Business Models for the Digital Economy

Health consumers empowered by digital technology now expect on-demand, anytime, anywhere service, forcing providers to develop new models of care to compete successfully in the emerging consumer-to-business health marketplace.

Executive Summary

Consumers now may access almost any product or service they want, when they want it, wherever they want it. This instant gratification has gone far beyond downloading books, music and movies. Equipped with smartphones, consumers shop for everything from groceries to cars, book vacations, pay bills, make investments, sell real estate, control smart homes, and even see who's ringing their doorbell – virtually anytime and anywhere, from an airplane or during an Uber ride.

Technologies and trends like mobility, the Internet of Things (IoT), virtualization, analytics and artificial intelligence (AI) enable the on-demand consumer-centric economy. While many industries have already been disrupted by these forces, healthcare's disruption has been slowed by its size, complexity and regulatory burden. Although healthcare payers have begun to plan for and embrace the digital disruption at the castle gates (see our paper "[Rethinking Health Plan Business Models for the Emerging On-Demand Digital Economy](#)"), healthcare providers especially appear to have natural moats. After all, how does a person download care?

The answer, as we have been predicting, is "by smartphone, tablet, PC or wearable." In acute cases, it may be the clinicians "downloading" care, with a central hub monitoring exams, radiological procedures and lab tests. Technological advances make consumer self-care and delivery of "anywhere care" increasingly practical. All are disrupting traditional health system value propositions.

Other industries have migrated to or been disrupted by "on-demand" platforms, with Netflix, iTunes, Uber and Airbnb as leading examples. A key aspect of each platform is how they re-imagine the "supply and demand" equation in their industries. Healthcare delivery is next, with the industry already rapidly changing in response to these trends. New care delivery business models are emerging, from "virtual first" approaches to retail-based health hubs.

These models are forerunners of truly consumer-centric healthcare delivery models – turning the industry's traditional B2B and B2C business models on their heads and replacing them with consumer-to-business (C2B) on-demand healthcare platforms (see Figure 1). These platforms will one day offer consumers a wide range of healthcare services from a variety of service providers.

The consumer at the center of care

On-demand healthcare, insurance coverage and management and wellness services are on the rise as the consumer rapidly becomes the center of the healthcare continuum.



Figure 1

Instead of relying on a healthcare system or health plan to broker, negotiate and coordinate their care, consumers will use these C2B platforms to create their own “customized to me” systems of care, threatening the value proposition of today’s proprietary networks. Consumers will select services based on quality, cost and convenience, guided by AI and machine-learning (ML) agents. This reality will create more market-driven pricing for medical services. Opaque pricing and quality data have slowed industry disruption; the platforms and C2B models will introduce more transparency and accelerate change.

Healthcare providers cannot assume that their physical plant or reputations will shield them from the impact of the C2B on-demand healthcare economy: digital disruption in other industries has put brand loyalty to the test – and early indications in healthcare are that patients will compromise their physician loyalty for convenience, cost and ease of access via digital channels.

In this paper, we draw on our work with leading healthcare systems to explain:

- The rise of the C2B healthcare-on-demand, platform-based delivery of care model.
- How consumer-built “customized to me” systems of care are disrupting provider business, operating and technology models.
- “In-flight” adaptations and their evolution path to potential business models that providers could adopt to thrive in the on-demand healthcare economy.
- “No-regrets” investments that health systems should make now to position themselves for success as the industry shifts to consumer-centric models.

The world of healthcare on demand

Rapidly evolving technology, disruptive innovation and virtualized ways of working are revolutionizing the healthcare marketplace—just as we have been forecasting.¹ Payers are adopting new business models, while startup ventures and some incumbents offer new digital tools to empower healthcare consumers. Providers tap technological advances to improve care and efficiency. Examples abound: The University of Chicago shortened operating room turnover time by 20% using predictive analytics.² ReWalk Robotics is developing wearable exoskeletons that enable people with spinal cord injuries to walk. AI is poised to revolutionize diagnostic practices, from detecting skin cancers to searching out social determinants of health in medical records to parsing voices in real time to predict the likelihood of a cardiac event.³

IoT, wearable technology, analytics, data, cloud and mobile are all underpinning this emerging digital-first healthcare environment. The disruption attracts venture capitalists and new competitors. Venture capitalists funded approximately \$2 billion in deals in the first quarter of 2019 alone, with more than \$1 billion of that going to consumer-focused companies. About \$37 billion in funding has flowed to digital health companies since 2010.⁴

In the publishing, music, banking and energy industries, disruption is forcing out intermediaries, compressing the value chain and reducing costs. Some digital cost disruption already is under way in healthcare. The average cost of a telemedicine “visit” is around \$38.⁵ That compares to the average \$160 cost of an office visit.⁶

More than 75% of U.S. hospital systems already use some form of telemedicine.⁷ By 2025, this type of virtual, personal and untethered care will be the norm (see Figure 2). Healthcare consumers will receive care from telepresence and mobility tools, plus in-home diagnostic and treatment tools, either in their homes or at their favorite physical retail outlets.

Financial accountability and risk shift to consumers, government agencies and accountable care organizations (ACOs) as consumers create “customized to me” systems of care. Consumers, with Amazon-shaped expectations for speed, quality and price, will put pressure on the industry to adopt outcomes-based reimbursements more quickly, make costs transparent and offer clear quality data.⁸ Regulations driving accessible, portable health records remove barriers to consumers easily switching health plans and providers.⁹

As these shifts gain momentum, the healthcare industry transforms from fragmented, location-driven care to virtual, personal and convenient delivery of care models (see Figure 3). Costs go down, the quality of care increases, and the industry at last develops a sustainable operating model.

What healthcare will look like in five years

The resulting transformation in the care delivery model will lower costs by approximately 25% to 60%

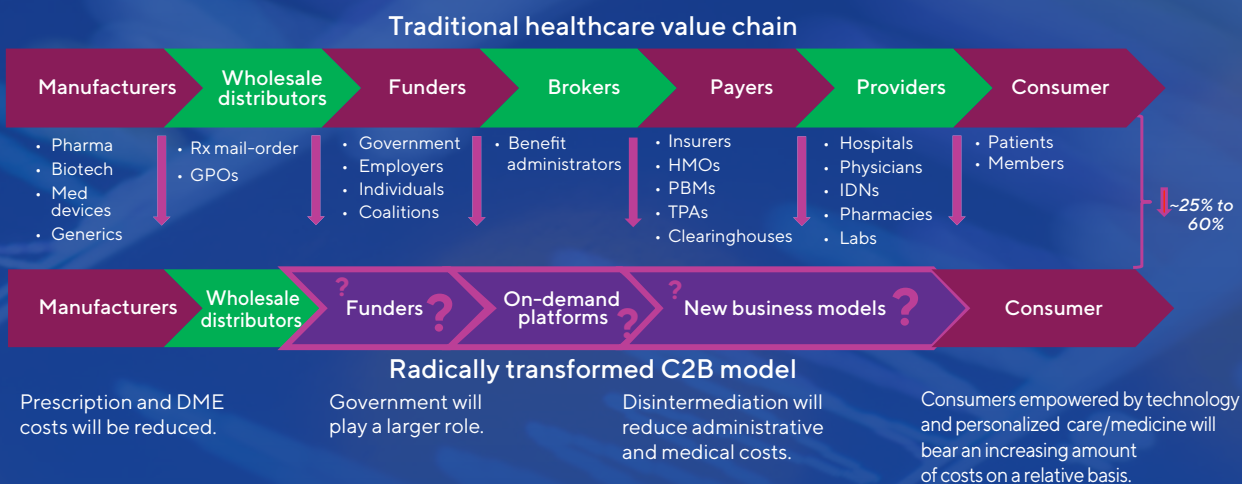


Figure 2

Shifting to virtual, personal and convenient delivery care models



Figure 3

Evolving to new business models

As the industry shifts to digitally delivered care, healthcare systems are already developing more consumer-centric practices and offerings. Providers must continue that evolution to create business models centered on consumers. These models will fit into a digitized healthcare continuum that will simplify and enhance the consumer experience (see Figure 4).

Genius phones, smart homes, intelligent devices, new digital diagnostic tools, AI and machine learning and the exponential advances of 5G wireless networks will enable a powerful new healthcare ecosystem. Data, insights and actions will flow among providers, consumers and devices virtually instantaneously.

The digitized healthcare continuum

Building a digitized healthcare continuum will simplify an enhanced customer experience

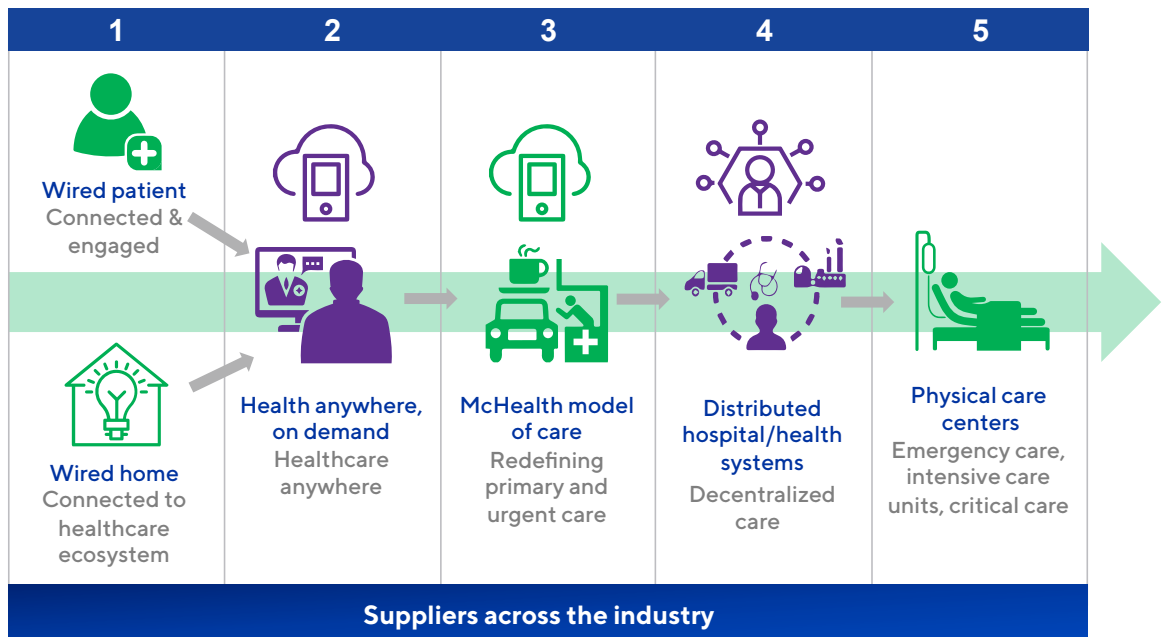


Figure 4

Platform play



Figure 5

Many healthcare systems are making investments in software, tech and solutions companies, either acquiring these or acting as venture capital partners.¹⁰ Incorporating these technologies into a C2B healthcare on-demand platform would enable health systems to lead this trend. The healthcare system becomes the aggregator of health services that consumers select and access on demand. A healthcare system could then even offer white-labeled “platforms as a service” to other health systems or risk-bearing entities.

Providers bring their deep expertise in delivering clinical care, while startups bring transformative ideas. New industry entrants with well-established technology backgrounds, such as Apple, Google, Amazon and Microsoft, bring speed and agility, cultures of innovation, competitiveness and price transparency. The platform model can incorporate each of these qualities under a single umbrella.



Healthcare anywhere



Figure 6

Telehealth, telepresence, and virtual care is one of the hottest areas of healthcare investment, pulling in more than \$700 million in venture capital in the first quarter of 2019 alone.¹¹ Many offerings focus on patient services, such as the Kaiser Permanente model, which integrates telehealth offerings into a patient's existing primary care relationship and ancillary services.¹² Other institutions are offering a wide range of telemedicine services to other physicians, such as UMPC.¹³ Competitors Teladoc Health and InTouch Health are touting their global virtual connections to healthcare.¹⁴

The natural expansion of telemedicine, combined with globalization of healthcare resources and the advent of AI agents, is anytime, anywhere care. Healthcare consumers and patients can always reach a caregiver. Also, caregivers can easily and proactively reach out to health consumers. Wearable and in-home devices provide continuous streams of real-time patient health data to feed algorithms that alert consumers and providers to act. A diabetic patient could be prompted to have a snack to avoid a low blood sugar episode. A runner might get a congratulatory text and a coupon after a great workout.

This model could also tap lateral partnership opportunities in whole person care. With appropriate permissions, data analyzed by a health system could feed into a menu planning app and generate meal plans, recipes and a grocery shopping list optimized to a consumer's weekly health and fitness goals.

In this virtual care model, healthcare is untethered to any address. The health system that adopts this model will drive consumers to its more convenient and cheaper care options with on-demand access, tailored services and concierge models. One critical issue will be ensuring that quality of care is high. Another will be meeting the consumer's level of comfort with data sharing and offers.

McHealth model of care delivery



Figure 7

Healthcare delivery is one of the few remaining sectors in the U.S. economy that is still relatively fragmented and comprised mostly of community or regional players. Many other industries, including airlines, banking and retail, have experienced industry consolidations and achieved economies of scale, resulting in dominance by four or five major national brands.

Care delivery is not immune from these economics. Digital technology and ubiquitous data are removing the “moats” that have protected smaller local players in the past. That’s why national care-delivery brands are emerging.

Consumers may now select from a wide variety of walk-in clinics offering primary and urgent care. The U.S. now has more than 8,000 urgent care centers and more than 1,100 primary care clinics.¹⁵ Most locations have extended hours, with no appointments needed. Visits to these are 30% to 40% cheaper than a doctor’s office visit and 80% cheaper than an ED visit.¹⁶

The natural progression for these outlets is what we might refer to as the “McHealth” model. Just as consumers may visit any McDonald’s or Starbucks location in the U.S. and have essentially the same value-driven quality experience at each, so too with McHealth centers. Many McHealth models will build on the backs of existing national retail brands, such as CVS, Walmart and Walgreens. These will be nationally branded, geographically ubiquitous and offer a one-stop, high quality, and predictable primary care experience at excellent value.

For the McHealth model, scale matters. McHealth centers must adopt highly standardized, efficient care delivery models to achieve economies of scale to drive down costs and ensure high quality care across locations. This requires process and technology innovation at a corporate or parent level that can be disseminated throughout the system. Interoperable data ensures that the McHealth centers can easily access a consumer’s record, eliminating paperwork and administrative costs. Service menus with clear, up-front pricing will eliminate billing surprises. Standardized procedures with virtual components will enable the clinics to deliver services efficiently. AI agents and ML algorithms can scan a consumer’s health data to identify patterns and issues of possible concern, ensuring personalized care.

Health systems pursuing the McHealth strategy likely will work with new partners, such as large retailers or commercial real estate developers. Incorporating human-centered design thinking is critical to ensure that the McHealth outlets deliver the experiences consumers expect.

Hospital as a service



Figure 8

Many healthcare systems have built extensive care capabilities, aiming to be the one-stop service provider for healthcare consumers. However, with retail clinics and telemedicine already redirecting patients to lower-cost care options, some health systems are responding by offering their expertise to smaller or less well-equipped provider systems. Mercy Virtual delivers a variety of remote monitoring and in-home services to 43 hospitals and hundreds of patients across five states.¹⁷ UPMC offers a wide array of clinical telehealth services to other providers, from ICU service to stroke patient assessments to in-home remote monitoring.¹⁸

This tactic can become a “hospital as a service” business model, especially as 5G wireless and other broadband networks expand connectivity and network speed and capacity. A central hub could provide services to facilities and individuals on a subscription or consumption-based model. That would cost-effectively expand the reach and accessibility of care to underserved locations. It would also enable healthcare systems to get more return on their current investments in applications, facilities and expertise.

Health systems could expand the “as a service” concept beyond clinical offerings. A health system that’s expert in remotely monitoring its own system resources from a central control room could then offer this capability as a hosted service to other systems.



Clinical powerhouse



Figure 9

Many academic medical centers and very large health systems are finding that their prestigious reputations don't cover their expenses. These are often high because these institutions act as de facto community health systems, attracting very sick and low-income patients, as well as research centers and teaching hospitals.¹⁹ Site-neutral value-based payment models could put further financial pressure on these systems, while retail clinics commoditize some care.²⁰

These institutions can double down on their strengths and become clinical powerhouses. A healthcare system that is renowned for trauma, cardiac, cancer, chronic disease and other specialized care can create a national or international brand. Then it may virtually export care to other parts of the country or world based on its expertise and resources, creating patient care regimens based on outcomes research. The evidence-based care will help these systems streamline their care models and reduce costs.



Taking a no-regrets path to healthcare reinvention

It's unlikely that providers will adopt any of these business models in their pure form (see Figure 10). Organizations will develop hybrid models that help them diversify revenue streams, capture synergies from their existing expertise, gain scale and reach a variety of healthcare consumers.

Industry transformation at this scale threatens stakeholders that are deeply invested in the status quo. Barriers to reinvention included the fragmented care-delivery system; legacy systems and processes; lack of price and quality transparency; cultural change and organizational restructuring challenges; and the need to maintain continuity of care while accelerating adoption and expansion of new models.

As these forces create headwinds, healthcare systems must ensure that they avoid the "stall zone." Every technological or industry shift follows an S-curve, starting slowly, then accelerating. At a certain point, forward progress slows as another shift begins to emerge. It's easy to miss the entry point for C2B on demand care and stall out on an old curve. Time in the stall zone can be prolonged when organizations invest in new technology in the service of the old model, while losing ground to competitors that have made the jump to the new curve (see Figure 11).

Future scenarios—one size doesn't fit all

Organizations will settle for hybrid future state business models to ensure portfolio diversification, synergies of scale and capture of varied market segments.

Platform play	+	Clinical powerhouse	=	Companies like Healthtap that develop platforms as well offer various healthcare services to customers.
Hospital as a service	+	Healthcare anywhere	=	A comprehensive solution that addresses all aspects of care delivery; creates synergies, costs, operations and business expansion opportunities.
McHealth model of care delivery	+	Hospital as a service	=	Use a la carte method to "buy" the required care when needed. Specialized teams will deliver care as requested by the consumer.
Healthcare anywhere	+	McHealth model of care delivery	=	Use remote patient technologies and innovative care delivery techniques to provide care as needed by the consumer.
...	+	...	=	Your own

Figure 10

Managing healthcare reinvention



Figure 11

Investment is necessary to get from an old curve to a new one. Yet patient care must not be disrupted as healthcare providers transition to on-demand care. Fortunately, there is a wide range of “no regrets” investments that providers can make. These strategies, tools and tactics will help providers meet immediate clinical and business priorities while readying their organizations for the C2B healthcare industry.

Rationalizing the technology foundation

Legacy systems and infrastructure typically are expensive to maintain and manage. They are inflexible and rarely support modern technology that drives new operating and business models. Healthcare providers should optimize infrastructure to achieve these objectives:

- I Take out costs.** Healthcare systems must understand their true costs of service and minimize these wherever possible. New industry players such as Amazon and Walmart excel in cost measurement and management. Providers can invest in or subscribe to next-generation platforms and applications to rationalize and drive administrative and supply chain efficiencies. Applicable technologies include robotic process automation, machine learning and cognitive computing. Savings gained may either be passed on to consumers and/or directed to next-generation investments.
- I Minimize, simplify and modernize IT assets.** Cloud computing and the imminent deployment of superfast, high-capacity 5G wireless networks enable providers to consume IT infrastructure, development, applications, operations and management as services. Providers don’t need massive capital investment resources to quickly gain up-to-date IT capabilities.
- I Simplify complex business rules.** The industry must shelve negotiated contracts. These contribute to high and obscure pricing, administrative complexity and unsatisfactory patient experiences. Providers should explore new and disruptive payment models, such as creating their own bundled episodes of care pricing. Another approach to investigate is the “freemium” model, in which consumers would get free-to-them care underwritten by a third party, such as a pharmaceutical company.
- I Accelerate interoperability and the application programming interface (API) economy.** Proposed rules for data interoperability pose short-term challenges and significant long-term benefits. Truly interoperable claims, clinical, administrative and social data will reduce administrative bottlenecks and costs, enable consumers to easily move among providers and payers, and improve quality of care, with larger data sets for AI agents to use in pattern recognition. Providers can start planning now for how they could standardize processes across their networks with interoperable data sets.

Rethinking operations

Concurrent with modernizing technology infrastructure, healthcare providers must streamline and rationalize administrative and clinical processes. Identifying or creating synergies between IT and business processes can help reduce costs and improve workflows. The key actions here include:

- Redesign the patient experience.** Take a patient-centered approach to all investments and bring human-centered design thinking to all initiatives. The goal is to create a differentiated end-to-end experience that fulfills, and even exceeds, patient expectations. Don't just build capabilities; create the experiences and unique personalized customer journeys that stakeholders want. Strategies here will include investments in digitally powered omnichannel patient engagement and activation tools and platforms.
- Embrace value-based care.** Focus on risk-sharing, new payment models and distribution of accountability. These will all be central to the C2B on-demand health economy. Adopt whole person care strategies to improve outcomes. Emphasize investment and training in collaborative care and patient engagement.
- Use industry incumbent status to your advantage.** Take advantage of the healthcare industry's remaining barriers to entry. New entrants will need the patient-care strength and credibility of providers. Providers also have expertise in working with healthcare's very complex supply chain, which will not be compressed overnight. These qualities make providers attractive partners and collaborators for tech giants and startups eyeing the industry. Healthcare systems could consider reaching out to these companies.
- Work toward transparent real-time price and quality data.** Providers with any business model must give clear and firm prices and quality ratings information to healthcare consumers. The on-demand economy trains consumers to know exactly how much they will pay and the quality of service to expect, based on the experiences of fellow consumers.

No-regrets investments

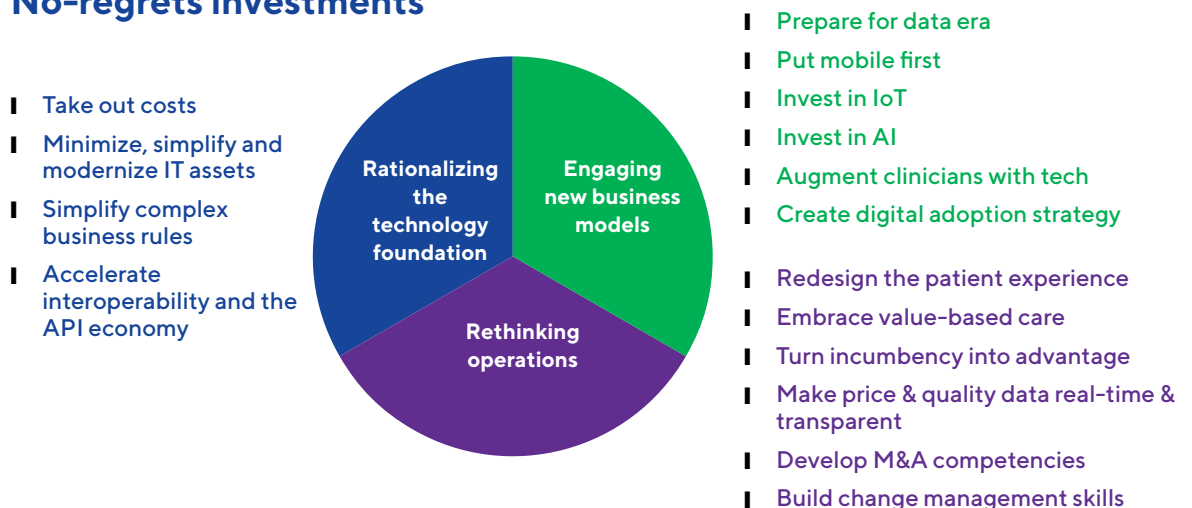


Figure 12

- Develop M&A competencies.** Consider vertical and horizontal partnerships that will help create true economies of scale, greater efficiencies and higher margins. Some partnerships may blur the lines among providers, payers and pharmacy benefit managers. Others may be with businesses outside of healthcare. It's important for health systems to invest in and partner with a clear vision and future business model in sight. Poorly conceived transactions can result in bloated organizations and increased costs.
- Develop deep change management skills.** Providers must practice change management as a discipline. The rate of technological and diagnostic innovation and cultural change shows no signs of slowing. Digitally savvy patients and clinicians will flock to providers that internalize and build on these changes rather than being the last on the block to adopt new practices and technology.

Engaging new business models

Finally, healthcare organizations must invest in new, potentially revolutionary technology and capabilities that enable them to deliver care and interact with healthcare consumers in new and industry-disrupting ways. Key actions here include:

- Preparing for the “data era.”** Ensure mastery of the social, mobile, analytics and cloud (SMAC) stack and start investing in the second stack – AI, IoT, ML, etc. (see “Quick Take” section on page 16.) Social, mobile, analytics and cloud remain key ingredients in all business models now and in the future. These are the launchpads for accelerating digital transformation and new business model creation. However, the “second stack” is here and speed matters in mastering new technology innovations.
- Put mobile first but don't neglect other channels like IoT.** Mobile remains the technology of choice, and 5G will give consumers—and providers—exponentially higher speeds, capacity and lower latency. What providers may not appreciate is how 5G also will supercharge IoT—including medical devices. 5G enables in-home and remote devices to communicate virtually instantaneously with each other and the cloud. Healthcare systems ought to be incorporating 5G into IT roadmaps and clinical planning now.
- Invest in AI.** AI tools are also rapidly becoming available as a service. These can help providers engage patients, manage care more effectively, identify patients at risk for developing chronic conditions and find adverse social determinants of health in a population. AI and its ML applications will help providers improve the quality and personalization of care while also making its delivery more efficient.
- Augment clinicians with technology.** Use technology as a lever to increase the efficiency of care delivery. New technology can create continuous, real-time data streams and provide new applicable insights into patient health. Start now to incorporate IoT data and AI assistants into the care process and workflows to create cost-reducing efficiencies.
- Create a digital adoption strategy.** Make sure that stakeholders know digital tools exist and build campaigns around encouraging their adoption. If providers design the tools to meet real patient and clinician needs, adoption should follow.

Of these, the most immediate needs are for health systems to reduce costs to consumers and cut their own expenses; promote price and quality transparency; and embrace free market, open competition and consumer choice.

Quick Take

Beyond SMAC: Building the Second Stack

Social, mobile, analytics and cloud (SMAC) have been driving disruption in healthcare and many other industries. These four essential technology layers help fuel key components of the consumer-to-business, on-demand healthcare economy, such as wearables, remote monitoring and telehealth. These help consumers quantify their own health data, receive care in nontraditional settings and tap platform-based services to create customized systems of care.

Building a SMAC stack was once considered disruptive; now it's baseline technology for competing digitally. New technologies that complement SMAC capabilities are emerging that will help power new healthcare operations and business models. These are the key technologies to invest in and experiment with now:

AI. AI-driven tools like machine learning and natural language processing algorithms will enable healthcare organizations to make more use of unstructured data in physicians' notes as well as find patterns in more structured data. AI is being tested as a diagnostic tool and as a care companion.²¹

5G. This latest wireless cellular communications infrastructure is to 4G as a fire hose is to a kitchen faucet. It carries 20 to 30 times more data than 4G networks, at speeds up to 100 times faster. That capability should power a whole new range of innovation for healthcare. 5G has very low latency, so data from an IoT sensor can almost instantly be processed in a cloud and relayed to another device in a virtual eyeblink, changing the standards for remote monitoring and telehealth applications.

IoT. With 5G set to turbocharge data transfer rates, the IoT is poised to become a utility. Healthcare consumers have told us they are ready to submit data digitally;²² IoT and 5G could make remote and self-monitoring options ubiquitous. Streams of data could feed analytics systems that predict emerging issues so physicians can intervene proactively. IoT sensors may also monitor the health of therapeutic equipment and track supply use to help improve supply chain efficiencies.

VR and AR. The power of 5G could increase the practicality of virtual reality (VR) and augmented reality (AR). 5G capacity and speed makes it possible for graphics processing to take place in the cloud instead of on headsets or nearby PCs.²³ That could enable people in remote locations, such as physician and patient, to interact in the same virtual setting. VR and AR could also be used as therapeutic and training tools.

Blockchain. Being prepared to accept micropayments and execution of smart contracts via blockchain will be advantageous as “whole person care” takes root and providers must partner with third parties to incorporate non-medical services, such as transportation and food delivery, into patient care plans and reimbursement cycles. It’s practical now to explore use cases and collaboration with other organizations in healthcare’s value chain.²⁴

Next-generation computing techniques. Quantum computers and qubits, neuromorphic computing that mimics the human brain and intelligence, and directed matter assembling structures at the atomic level—all may sound like science fiction but are worth watching. Applying these technologies to solve challenges like chronic conditions and social determinants of health are likely to further transform patient care and the ways in which it can be delivered.

Data is the current that runs through each of these technologies. Healthcare organizations must invest in solutions, such as interoperable systems, APIs and platforms, that eliminate information silos. Healthcare organizations will see increases in productivity and innovation when data is freely available to the new “second stack” of technologies as well as to SMAC stalwarts.

Looking ahead

These are radical shifts for most providers. Yet they are non-negotiable. The platform economy has trained consumers to expect low costs, high quality and the ability to do business with the entity of their choice. As Amazon, Apple, Airbnb, Netflix and many other platforms reshaped entire industries with digital consumer-centric practices, many healthcare organizations behaved as if those models did not apply to clinical care. Yet digital technology, from always-on connectivity to intelligent tools, is already making care on demand a reality. Healthcare systems that recognize this shift and its erosion of their traditional value propositions can accelerate their response. They can create new models of care built on their existing expertise, amplified with digital capabilities, which can ensure their health and vitality in the new C2B on-demand healthcare economy.



Endnotes

- ¹ William Shea and Patricia Birch, "Rethinking Health Plan Business Models for the Emerging On-Demand Digital Economy," Cognizant Digital Business, August 2017, <https://www.cognizant.com/whitepapers/rethinking-health-plan-business-models-or-the-emerging-on-demand-digital-economy-codex2846.pdf>.
- ² Blake Morgan, "Healthcare Innovation - 10 Recent Examples Of Powerful Innovation In Healthcare," Forbes, March 12, 2019, <https://www.forbes.com/sites/blakemorgan/2019/03/12/healthcare-innovation-10-recent-examples-of-powerful-innovation-in-healthcare/#64c0945557dc>.
- ³ Bernard Marr, "How Is AI Used In Healthcare - 5 Powerful Real-World Examples That Show The Latest Advances," Forbes, July 27, 2018, <https://www.forbes.com/sites/bernardmarr/2018/07/27/how-is-ai-used-in-healthcare-5-powerful-real-world-examples-that-show-the-latest-advances/#1bffe415dfb>.
- ⁴ Tom Sullivan, "Where digital health venture capitalists invested in 2019," Healthcare IT News, April 15, 2019, <https://www.healthcareitnews.com/news/where-digital-health-venture-capitalists-invested-2019>.
- ⁵ Rebecca Pifer, "Humana study touts telehealth cost cuts, with comparable follow-ups," Healthcare Dive, July 18, 2018, <https://www.healthcaredive.com/news/humana-study-touts-telehealth-cost-cuts-with-comparable-follow-ups/527854/>.
- ⁶ Trent Gillies, "Telehealth could replace doctor visits in major cities, amid a primary care physician shortage," CNBC, May 13, 2018, <https://www.cnbc.com/2018/05/12/telehealth-could-replace-doctor-visits-in-major-cities.html>.
- ⁷ "Fact Sheet: Telehealth," American Hospital Association, February 2019, <https://www.aha.org/system/files/2019-02/fact-sheet-telehealth-2-4-19.pdf>.
- ⁸ Trent Riter, "The Amazon effect on consumer expectations and buying decisions," SPS Commerce, February 23, 2017, <https://www.spscommerce.com/blog/amazon-effect-consumer-expectations-spsa/>.
- ⁹ The Centers for Medicare & Medicaid (CMS) and the Office of the National Health Coordinator (ONC) new interoperability rules will drive this shift.
- ¹⁰ "Why more health systems are eyeing venture capital," Advisory Board, April 23, 2019, <https://www.advisory.com/daily-briefing/2019/04/23/venture-capital>.
- ¹¹ Tom Sullivan, "Where digital health venture capitalists invested in 2019," Healthcare IT News, April 15, 2019, <https://www.healthcareitnews.com/news/where-digital-health-venture-capitalists-invested-2019>.
- ¹² Eric Wicklund, "Kaiser Permanente Sees Good Results With Video-Based Telehealth," mHealthIntelligence, October 16, 2018, <https://mhealthintelligence.com/news/kaiser-permanente-sees-good-results-with-video-based-telehealth>.
- ¹³ "Telehealth Services at UPMC," UPMC, <https://www.upmc.com/healthcare-professionals/physicians/telemedicine/services>.
- ¹⁴ Eric Wicklund, "Telehealth Providers Look to Expand Their International Presence," mHealthIntelligence, September 24, 2018, <https://mhealthintelligence.com/news/telehealth-providers-look-to-expand-their-international-presence>.
- ¹⁵ Steven Findlay, "When You Should Go to an Urgent Care or Walk-in Health Clinic," Consumer Reports, May 4, 2018, <https://www.consumerreports.org/health-clinics/urgent-care-or-walk-in-health-clinic/>.
- ¹⁶ Heidi Godman, "Retail health clinics: The pros and cons," Harvard Health Blog, January 15, 2016, <https://www.health.harvard.edu/blog/retail-health-clinics-the-pros-and-cons-201601158979>.

Endnotes

- ¹⁷ “Delivering Care Wherever It’s Needed,” About Mercy Virtual, <http://www.mercyvirtual.net/about/>.
- ¹⁸ “Telehealth Services at UPMC,” UPMC, <https://www.upmc.com/healthcare-professionals/physicians/telemedicine/services>.
- ¹⁹ Alex Kacic, “Academic medical centers face identity overhaul,” Modern Healthcare, April 29, 2019, <https://www.modernhealthcare.com/operations/academic-medical-centers-face-identity-overhaul>.
- ²⁰ Teryl Nuckols, Scott Weingarten, and Thomas M. Priselac, “What Value-Based Payment Means for Academic Medical Centers,” NEJM Catalyst, May 30, 2019, <https://catalyst.nejm.org/value-based-payment-academic-medical-centers/>.
- ²¹ “Human-Centered Digital Therapeutics Tackle Chronic Health Conditions,” Cognizant, February 26, 2019, <https://www.cognizant.com/perspectives/human-centered-digital-therapeutics-tackle-chronic-health-conditions>.
- ²² William Shea, Shashi Shrimali, and Carolyne Kama, “Extending the Case for Digital: Health Plan Members Speak,” Cognizant, September 2018, <https://www.cognizant.com/whitepapers/extending-the-case-for-digital-health-plan-members-speak-codex3814.pdf>.
- ²³ David Petersson, “5G enables AR and VR for the enterprise: CIO primer,” TechTarget, May 15, 2019, <https://searchcio.techtarget.com/tip/5G-enables-AR-and-VR-for-the-enterprise-CIO-primer>.
- ²⁴ “Digital Revenue Cycle Management: Critical Care for Providers,” Cognizant, April 10, 2019, <https://www.cognizant.com/perspectives/digital-revenue-cycle-management-critical-care-for-providers>.

About the authors



Patricia (Trish) Birch

Senior Vice-President, Cognizant Consulting's Healthcare Practice

Patricia (Trish) Birch is a Senior Vice-President with Cognizant Consulting's Healthcare Practice, where she leads the company's healthcare consulting group. Trish has over 25 years of experience in operations and management consulting and is a published author and speaker on issues facing the industry. She has years of hands-on experience managing and executing complex business and technology programs, and has served many of the largest organizations across the industry. She can be reached at Patricia.Birch@cognizant.com | www.linkedin.com/in/trish-birch-1b752a3/.

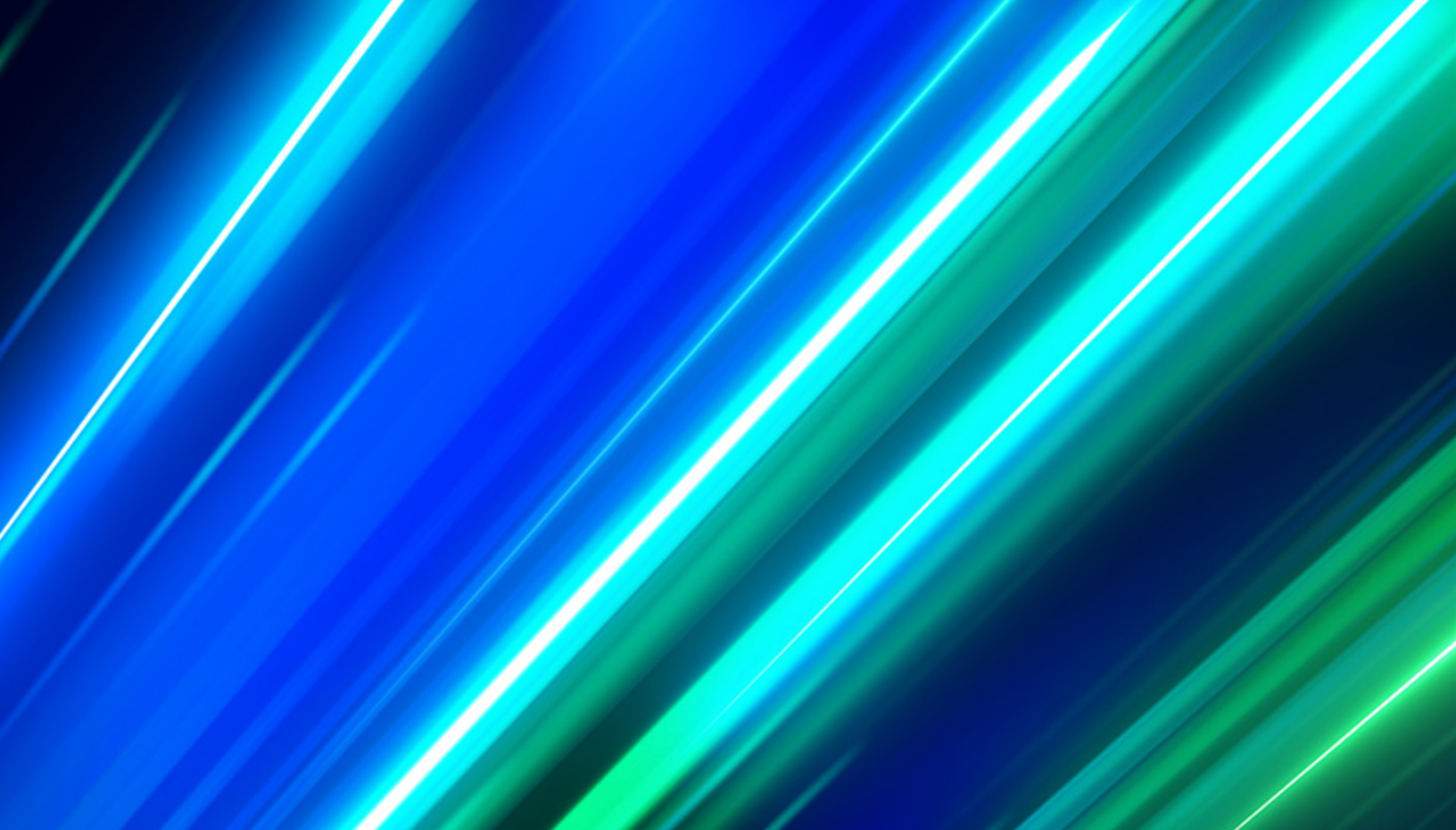


William (Bill) Shea

Vice President, Cognizant Consulting's Healthcare Practice

William (Bill) Shea is a Vice President within Cognizant Consulting's Healthcare Practice. He has over 25 years of experience in management consulting, practice development and project management in the health industry across the payer, purchaser and provider markets. Bill has significant experience in health plan strategy and operations in the areas of digital transformation, medical management, core modernization, provider and network strategy and product development. He can be reached at William.Shea@cognizant.com | www.linkedin.com/in/bill-shea-78b191/.





About Cognizant Consulting

With over 5,500 consultants worldwide, Cognizant Consulting offers high-value digital business and IT consulting services that improve business performance and operational productivity while lowering operational costs. Clients leverage our deep industry experience, strategy and transformation capabilities, and analytical insights to help improve productivity, drive business transformation and increase shareholder value across the enterprise. To learn more, please visit www.cognizant.com/consulting or e-mail us at inquiry@cognizant.com.

About Cognizant Healthcare

Cognizant's Healthcare Business Unit works with healthcare organizations to provide collaborative, innovative solutions that address the industry's most pressing IT and business challenges – from rethinking new business models to optimizing operations and enabling technology innovation. A global leader in healthcare, our industry-specific services and solutions support leading payers, providers and pharmacy benefit managers worldwide. For more information, visit www.cognizant.com/healthcare.

About Cognizant

Cognizant (Nasdaq-100: CTSH) is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 195 on the Fortune 500 and is consistently listed among the most admired companies in the world. Learn how Cognizant helps clients lead with digital at www.cognizant.com or follow us @Cognizant.

Cognizant

World Headquarters

500 Frank W. Burr Blvd.
Teaneck, NJ 07666 USA
Phone: +1 201 801 0233
Fax: +1 201 801 0243
Toll Free: +1 888 937 3277

European Headquarters

1 Kingdom Street
Paddington Central
London W2 6BD England
Phone: +44 (0) 20 7297 7600
Fax: +44 (0) 20 7121 0102

India Operations Headquarters

#5/535 Old Mahabalipuram Road
Okkiyam Pettai, Thoraipakkam
Chennai, 600 096 India
Phone: +91 (0) 44 4209 6000
Fax: +91 (0) 44 4209 6060

© Copyright 2019, Cognizant. All rights reserved. No part of this document may be reproduced, stored in a retrieval system, transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the express written permission from Cognizant. The information contained herein is subject to change without notice. All other trademarks mentioned herein are the property of their respective owners.