HOW DIGITAL DIVIDES HEALTH CARE PROVIDERS

By Matthias Becker, Michael Grebe, Zun-Gon Kim, Matthias Gehder, and Michael Leyh

Health care providers that have embraced digital are already reaping substantial improvements in strategic positioning, managing patient volume, efficiency, and patient satisfaction. The COVID-19 crisis has further emphasized the need for a rapid and comprehensive digital transformation of the health care system, putting digital at the top of every company's agenda. Recent Boston Consulting Group research shows that so-called digital champions have the opportunity to fast-track their digital transformations, strengthen their competitive advantage, and accelerate out of the crisis.

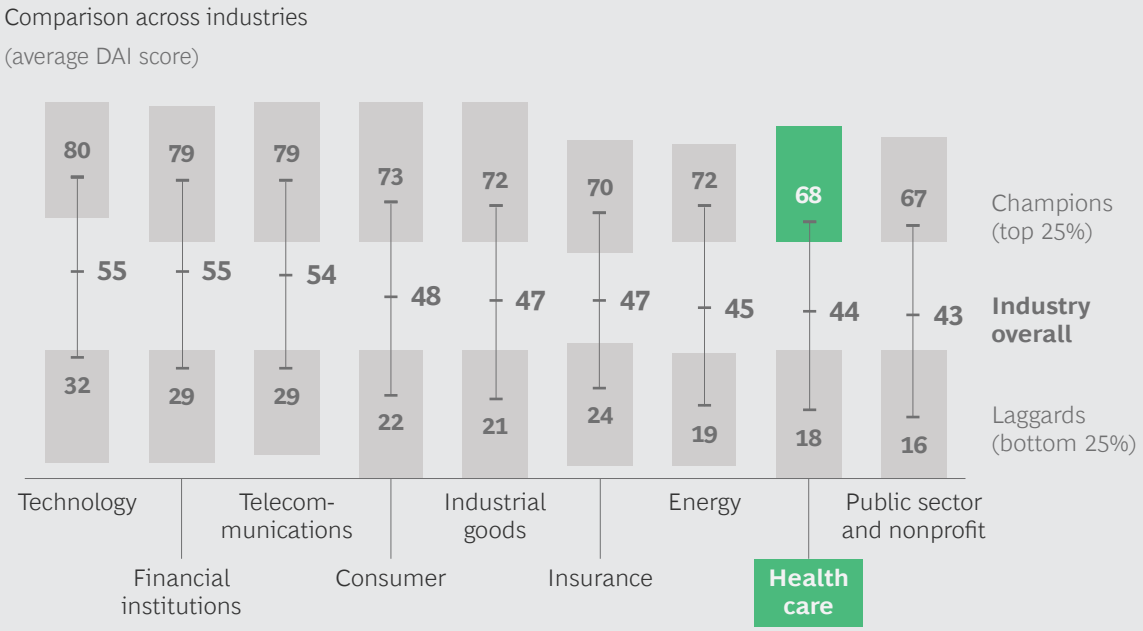
Digital Disruption in Health Care

BCG recently surveyed more than 2,300 companies around the world in nine industries for its annual Digital Acceleration Index (DAI), which measures companies' digital maturity. The findings showed that health care is one of the least digitally mature industries overall, scoring an average of 44 out of 100. That score was 20% below the two leading industries—technology and financial institutions, each with an average score of 55—and indicates that the health care industry is ripe for disruption.[1] (See Exhibit 1.)

BCG also took a deeper dive into the health care industry to better understand the dynamics at play with a DAI study focused on the different sectors inside the HC industry. We asked decision makers at more than 260 health care companies around the globe to assess the digital maturity of their companies along 35 dimensions, and we used that data to develop an overall digital maturity score for each company.[2]

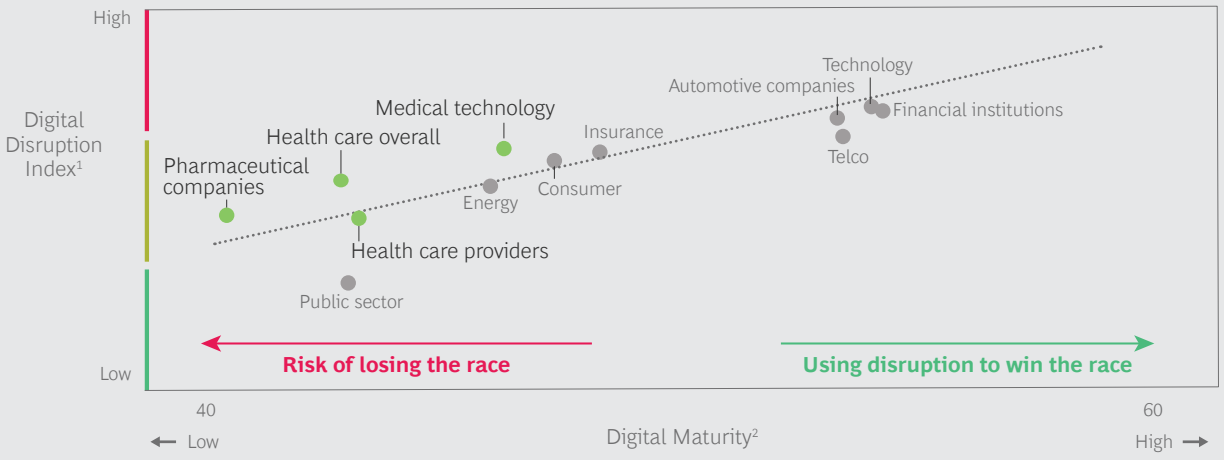
A clear digital divide appears among the subsectors of the health care industry. (See Exhibit 2.) Medical-technology companies are the most digitally mature, which is not surprising given the tech savviness necessary for the development of their products and the disruptive pressure they face from such tech giants as Apple and Google. Yet pharmaceutical companies, which have tra-

EXHIBIT 1 | Most Health Care Companies Lack Digital Maturity



Source: BCG analysis.
Note: DAI = BCG's Digital Acceleration Index; n=585 for technology; n=543 for financial institutions; n=365 for telecommunications; n=920 for consumer; n=1,523 for industrial goods; n=200 for insurance; n=258 for energy; n=264 for health care; n=423 for public sector and nonprofit.

EXHIBIT 2 | The Health Care Industry Shows Low Maturity in Digital Overall, but the Medtech Sector Is Leading



Source: BCG analysis.
[1]The digital disruption index makes assessments along four dimensions: how customer journeys can be disrupted through digital; how digital can be scaled across the value chain; how attractive the funding for investors and venture capitalists is; and how players from adjacent industries can make competitive moves.
[2]Digital maturity is assessed through BCG's Digital Acceleration Index.

ditionally relied heavily on long-lasting patents, have not experienced much disruption.

Most health care providers, although somewhat more mature within the health care industry, have also not yet felt the urge to aggressively pursue digital transformation. But pressure on them is likely to increase as companies from different fields enter the market and target parts of the value chain. Amazon, for example, has begun to provide tech-enabled, more cost-effective care for their employees and families with Amazon Care, an online app that provides access to health care services 24-7. The services include virtual consultations with clinicians for colds, infections, and minor injuries as well as in-person appointments for exams, testing, treatment, and medication delivery.

Google is also making forays on a number of fronts. For example, the company has adapted autonomous-vehicle technology for hospitals. It has also partnered with the UK's National Health Service to develop an app to better manage kidney disease, which racks up $1 billion in costs and results in 100,000 deaths in the UK per year. The app uses real-time data to identify patients at risk of developing acute kidney failure and then sends an instant alert to clinicians who can take prompt action.

The purpose behind such efforts is to increase provider efficiency through technology and to shorten hospital stays while maintaining, or even improving, medical care outcomes. These partnerships can benefit both parties, but providers must still keep up with technological advances to avoid losing parts of the value chain to their tech partners.

The Provider World Is Divided

There are also clear digital divides among providers themselves. In our study, we identified some players, which we call champions, that excel at digital and occupy the top quartile of the DAI. Others, which we call laggards, have significant gaps across the 35 digital dimensions and occupy the bottom quartile. The higher digital maturity among top performers is already translating into tangible business impact and benefits for patients and companies alike.

Champions have digitized the patient journey from end to end. They use patient data to predict the need for interventions, provide care outside of existing facilities (such as through telemedicine and remote monitoring with wearables), improve the efficiency of clinical visits through online scheduling and optimizing clinic time, and offer remote rehabilitation and aftercare services.

This patient-centric view translates into competitive advantage for champions in three key areas.

Extended Reach. The full-service paradigm—from diagnosis and intervention in the early stages to after care—allows champions to tap into revenues throughout the entire patient journey and attract more patients from outside their original catchment areas.

Medical Outcomes and Effectiveness. By leveraging data through tools such as artificial intelligence (AI) for image recognition and, increasingly, to support advanced clinical decisions (such as cancer diagnosis), champions boost medical effectiveness, thus enhancing outcomes and reducing costs—not only for themselves but throughout the entire system.

Operational Efficiency. Champions improve the efficiency of their staff and facilities when they leverage digital technology across their medical operations, optimizing just about everything—including diagnostics (by making information available at the moment of consultation), the sanitization of operating rooms, bed occupancy, and staff shift schedules.

Indeed, we've found that the medical staff of digital champions spend, on average, 19% of their time on administrative work, while the medical staff of laggards spend 34% of their time—almost twice as long—

on such work. (See Exhibit 3.) Champions have made these strides in part by adopting AI and machine-learning technologies, such as speech recognition, which allow providers to record information at the point of care and reduce documentation time by 45%.

The digital maturity of top performers also benefits patients. When medical staff can spend more time on caregiving, the well-being of patients is bound to improve—and costs can decline. What's more, our research reveals that champions can schedule appointments for elective care in just nine days—40% faster than laggards, which take fifteen days for such scheduling. In the US, for example, Cleveland Clinic drastically reduced the period between the booking and the appointment itself, along with waiting times after arrival at the office, by using a patient-tracking GPS system.

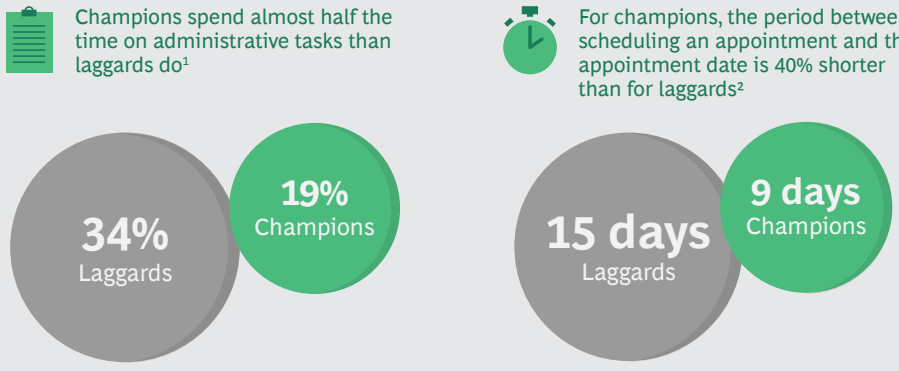
Other new apps, such as Uberdoc, are also popping up to help patients throughout the entire patient journey, including seeing their specialists more quickly and paying for their visits more easily. And advances in telemedicine have made possible new business models that promise greater convenience and lower costs. For example, US-based telemedicine provider First Stop Health offers a performance guarantee and will refund the difference between health care cost savings and its fees, should the latter be larger. Not surprisingly, the pandemic has accelerated the adoption of digital health solutions and telehealth.

Where Digital Champions Excel the Most

We have found that acting on four of the 35 digital dimensions covered by the DAI have a particularly strong impact on the performance of champions over laggards:

- **Establish digital ecosystems and partnerships,** such as the Mayo Clinic's ten-year partnership with Google Cloud to advance health care through digital technologies. Here, champions averaged 54 points versus just 8 for laggards.
- **Improve core processes and clinical operations,** including diagnostics through AI. Champions, 53; laggards, 2.
- **Digitize and automate central functions,** which help to explain champions' lower administrative burden, faster appointment times, and more time spent on patients. Champions, 60; laggards, 3.

EXHIBIT 3 | Digital Maturity Improves Operations and Satisfaction



Source: BCG analysis.
Note: Champions = companies that scored in the top quartile of the Digital Acceleration index (DAI). Laggards = companies that scored in the bottom quartile of the DAI.
[1]Defined as the average share of time that the medical staff spends on tasks other than provision of care.
[2]Defined as the average number of days between requesting an appointment for elective care and the date received for such care.

- **Work on agile at scale,** which is crucial for innovation, speed, and operational efficiency. Champions, 51; laggards, 5.

We've also found that applying AI is crucial to transforming existing core processes, improving such capabilities as marketing, providing services, and opening up new business opportunities. For example, AI-powered nurse support systems can provide services around the clock, which is particularly helpful in the many countries with nursing shortages. The US-based company Diligent Robotics developed Moxi, a robot assistant that helps hospital staff carry out nonpatient-facing tasks, such as collecting supplies or lab samples and delivering them to the required location. Moxi can complete approximately 30% of such tasks, allowing nurses to spend more time with each patient. What's more, Moxi's AI technology allows the robot to continuously learn from human staff—and even greet people when passing them in the hall. Diligent Robotics has raised $10 million in Series A funding during the pandemic, allowing the company to expand its services into more hospitals.

Taking a similar approach, Care Angel, Sensely, and several other companies have introduced virtual avatar nurses to residences, enabling patients to carry out routine checks on themselves. This significantly reduces the need for human nurses to visit homes and for patients to visit clinics. Sensely has reported a reduction of 66% in monitoring costs for patients with chronic heart disease as a result.

Steps to Move Forward

As we have seen, digital leaders excel through increased reach (and thus larger revenue pools), better medical outcomes and effectiveness, and improved operational efficiency through digitizing core processes. Champions that want to keep their advantage—and laggards that want to make up some ground—can take three no-regret moves:

- **Strive for digital patient and staff engagement**. Providers need to strive for superior, differentiated patient engagement at scale using AI and the Internet of Things (IoT). They must also cultivate powerful ecosystems. The goal is to create a seamless and personalized customer journey that becomes ever more automated, patient empowering, and interactive, and that can take place in the patient's home. In order to get there, providers should encourage patient-facing, product-building teams to rapidly experiment and aim for a new level of innovation. When digitizing internal processes, the focus should be on freeing up time to perform the most value-creating task of all: taking care of patients.

- **Infuse digital talent to build a digital organization.** Companies need to have a talent and organization strategy that reflects the demand for new skills and roles, such as data scientists and agile coaches. Companies should develop a focused digital recruiting strategy and a blueprint for upskilling their current workforce in order to ensure they have the right talent—both in terms of technical skills and the ability to build and manage digital businesses. Among champions, 40% assign more than 10% of full-time equivalents to digital roles, while only 15% of laggards assign that number to digital roles. As the war for digital talent becomes fiercer, laggards need to up their game or risk losing more ground.

- **Nurture technology and data foundations.** Providers should steer sizable digital investment toward building the technology stack and data excellence. Across industries, we see champions typically invest a total of 15% or more of their operating expenses in digital, primarily into building technology and data. That will position them to leverage new technologies—such as AI, IoT, and blockchain to support new digital business models—and create major efficiencies in the core business. These savings can help fund the digital journey. Most champions consider AI to

be at the heart of their digital transformations. They put a strategic emphasis on accessing unique data from internal operations and external patient experiences to bring advanced analytics and AI to life.

Being successful in the 2020s and becoming digital in the 2020s are intertwined and inseparable—especially given how much COVID-19 has accelerated the digital transformation of health care providers. Providers will need a clear and focused digital investment strategy to create value for patients, shareholders, and society as a whole. Champions that continue along this path will be able to maintain their edge over competitors; today's laggards still have an opportunity to choose this path and emerge as champions in their own right.

NOTES

1. BCG's 2020 DAI was based on a study of more than 2,300 companies in Asia, Europe, and the US. BCG asked managers and executives to assess their companies' digital maturity against defined criteria on a scale from 1 to 4 in 35 categories. BCG then aggregated those raw scores and assigned values to their responses from 0 to 100.
2. For the 2020 DAI health care study, BCG surveyed 264 companies from 22 countries around the globe in 2019 and 2020. Respondents were primarily senior leaders: C-level and other executives (23%), function and division leaders (13%), and general managers (64%).

About the Authors

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