



**DAT
CON**

DATA READINESS
CONDITION INDEX

Healthcare: DATCON Level 3

An Industry with a Weak Data Management Pulse

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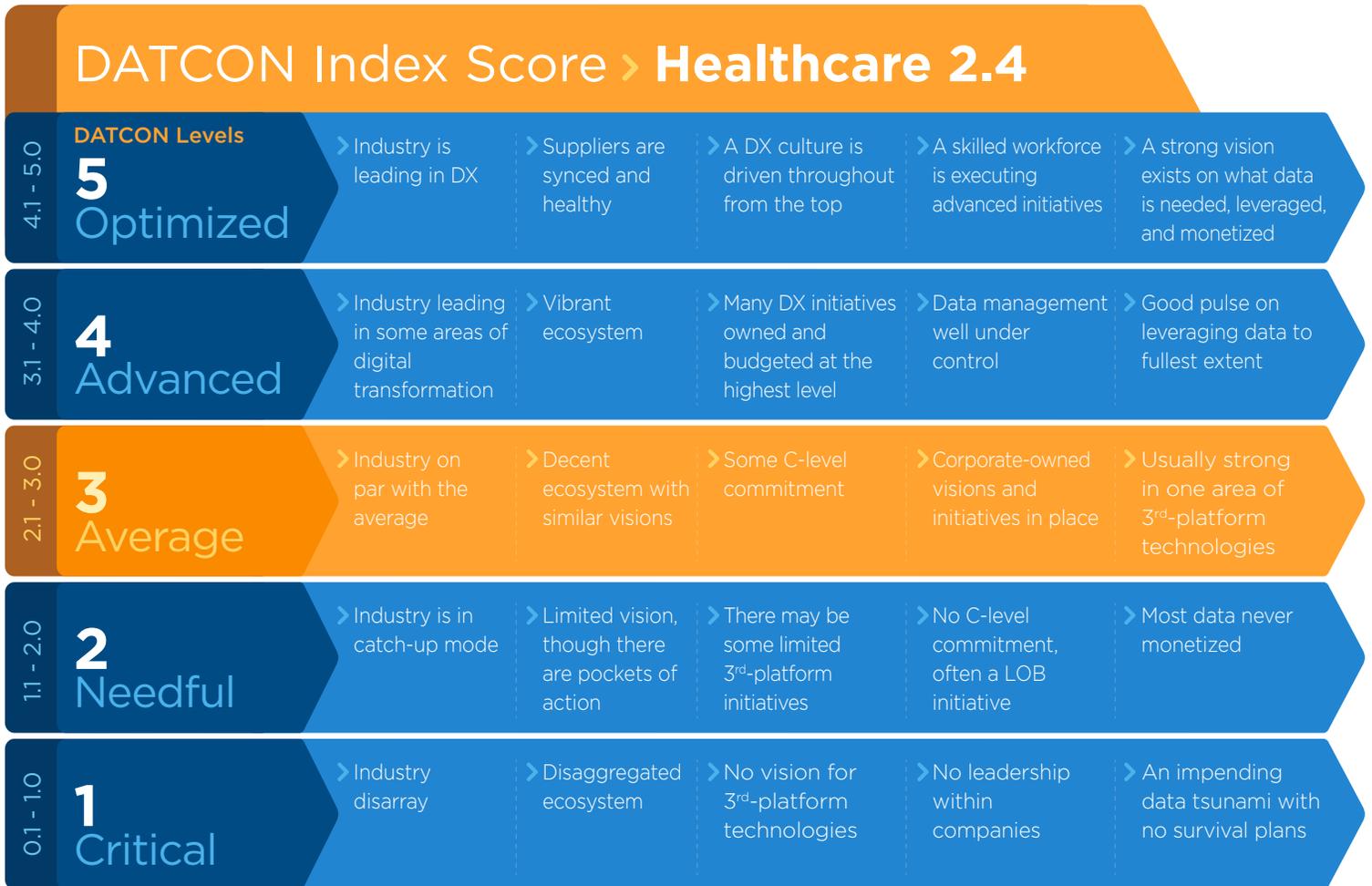
Executive Summary

> DATCON stands for **DATA** readiness **CON**dition (DATCON)

The goal of the DATCON index is to expose the strengths, opportunities, and data competency for a given industry, specifically as these competencies relate to managing, analyzing, leveraging, and capitalizing on data. This project is designed to analyze various industries regarding their own Dataspheres, data management, usage, leadership, and monetization capabilities (see “Methodology” for more details).

Healthcare is at DATCON 3, representing an industry that is below average (when patients expect excellence) and needing changes, sometimes significant, to improve its data competency across some but not all of the assessment vectors (Figure 1).

Figure 1



Source: IDC's Data Age 2025 study, sponsored by Seagate

The following are some of the key findings that earn healthcare a score of 2.4:

➤ The healthcare Datasphere is the fastest-growing industry Datasphere that IDC evaluated, including critical and hypercritical (life-dependent) data, as might be expected. It is expected to grow 13% faster than other industries, while hypercritical data is expected to grow more than 47% on average, more than doubling every other year. A number of deficiencies exacerbate the problems with managing this aggressive growth in data.

➤ Healthcare demonstrates a heterogeneous business landscape with little data management synergy or consistency across its respective entities. There is a disparate set of data management

➤ IT investment in healthcare is among the lowest of all industries. As a result, IT departments have difficulty catching up with data management challenges, let alone investing in advanced architectures, edge computing, robotics, and other necessary technologies. Varying from

“ Storage growth has been running at 50% or more year over year for as long as I can remember, so it’s certainly not going to be any less than that ”

– Senior Director of IT,
US Medical Center

competencies and strategies across the industry and medical facilities that makes learning from and collaborating with peers more difficult than usual.

country to country, the issues of data privacy and security can hinder advancements in genomic research and personalized medication that are informed by patients with similar ailments and treatment/recovery trends.

“ These advanced technologies generate a ton of data. If history is any indication, we’re going to continue to deal with a lot of onsite data, but also need to work with external companies and deal with large datasets that don’t live here. They live out on the cloud somewhere at someone else’s datacenter.

– Senior Director of IT, US Medical Center

➤ Blockchain, despite being in a relative state of nascency, could offer a unique next-generational opportunity for healthcare to transform digitally, yet nearly 60% of healthcare organizations surveyed lack a strategy or have yet to implement

any initiative. Blockchain can underpin a patient's medical record and treatment history, which will accelerate predictive care and prescription management while maintaining the privacy and integrity of personal patient data.

➤ Healthcare is one of the industries that can and should leverage analytics and artificial intelligence (AI), yet many organizations find themselves in siloed states. They have difficulty maintaining proper levels of security and privacy, let alone feeding AI algorithms that hold the promise of advanced disease discovery and cures of often terminal illnesses.



➤ More than 40% of the healthcare respondents surveyed have difficulty hiring employees with necessary data skill sets, and this dynamic is not improving quickly. Proper data management is necessary as a foundation for next-generation medical analysis and procedures that are enabled by

real-time monitoring of medicine and treatment effectiveness. The gap in skills is not just IT-related: Skills associated with ethical and moral decisions need to be embedded into any automated or intelligent prescription and prognosis algorithm.

➤ **40%**

of the healthcare respondents surveyed have difficulty hiring employees with the necessary data skill set.

Healthcare Survey Data

Healthcare has an investment problem.

Whether due to a lack of funding or a lack of vision, healthcare ranks among the lowest in investment of the next-generation technologies necessary to optimize its Datasphere competencies. Burdened by regulations, the costs of advanced care, and an aging population that requires more care, medical facilities often prioritize investment on non-IT-related strategies and technologies such as advanced medical diagnostic and treatment equipment (Figure 2).

One need only look at the future to see the need for additional investment in innovative care and advanced analytics. For example, today, 3D printing technology allows surgeons to operate on a replicate of a brain tumor, essentially practicing a surgery before the real thing. Augmented and virtual reality (AR/VR) technology soon will allow students to learn the same way, only using digital data through AR/VR lenses.

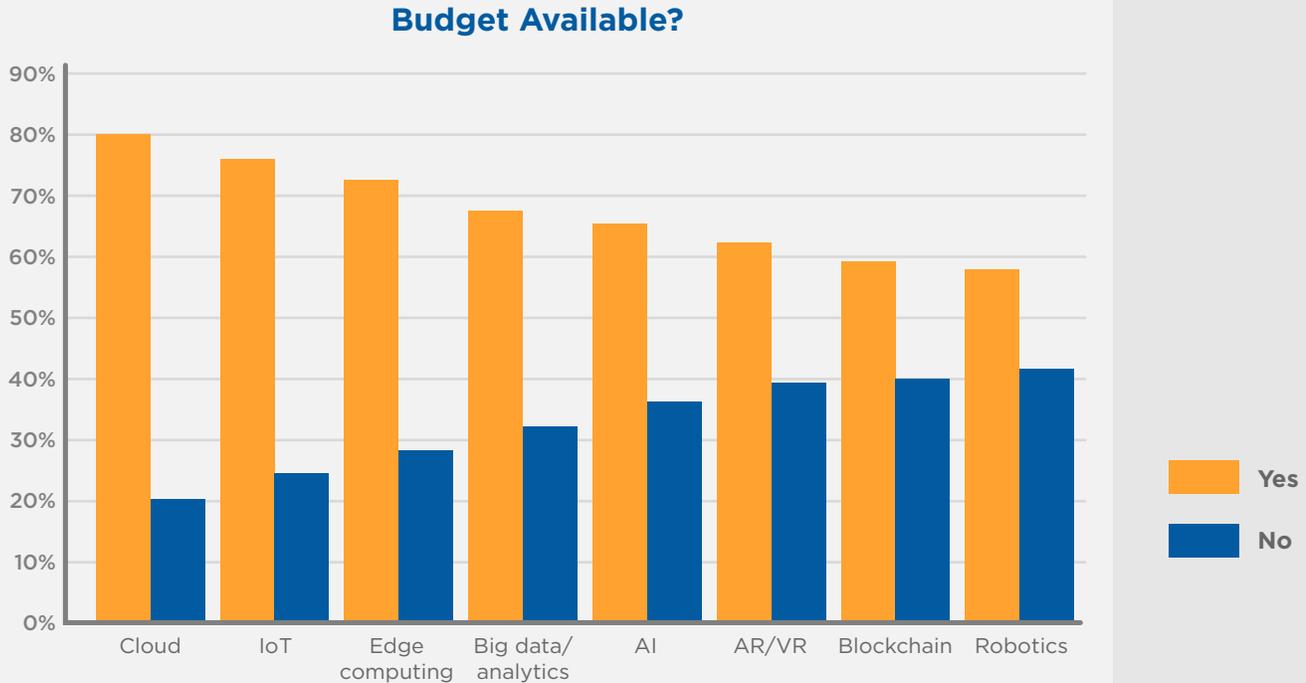
It is also a well-known principle in healthcare that the less disruptive the surgery, the better it tends to be. Increasingly, robots will aid or perform microsurgeries to reduce invasiveness and increase precision.

Our survey found that healthcare providers are struggling to fund all the necessary areas of investment at once.



The top three investment priorities for healthcare respondents surveyed were cloud, IoT, and edge computing. AR/VR, blockchain, and robotics were the bottom three priorities (Figure 3).

Figure 3 - Healthcare leading and lagging investment priorities



Source: IDC's Data Age 2025 study, sponsored by Seagate

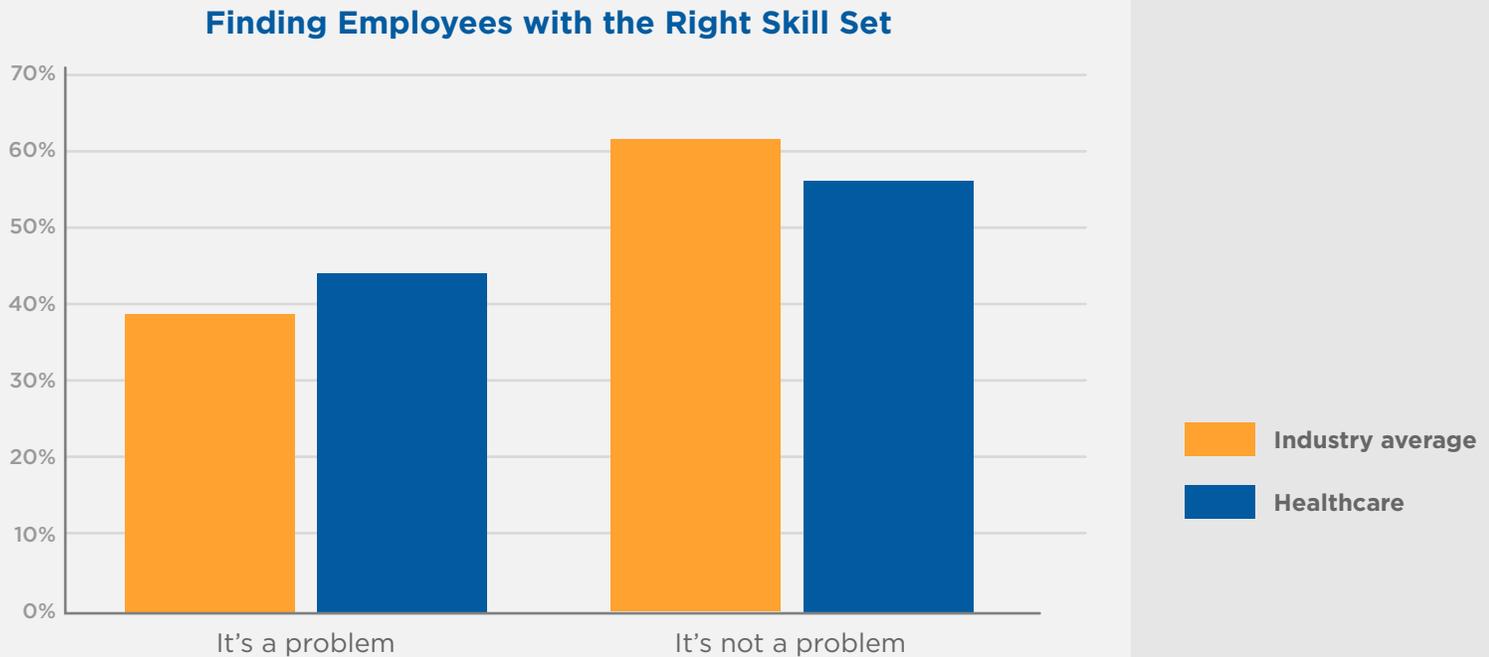
For healthcare, edge computing is really thought of as outfitting staff with connected tools to aid in the aggregation and orchestration of critical patient data, as well as ensuring the right patient is being treated based on real-time patient identity management systems. This type of edge computing is all contained within the walls of the healthcare facility and certainly is a proper investment, but edge computing will soon extend beyond the hospital and into the home environment or on the go, embedded within the patients themselves, or in other medical IoT devices. Therefore, healthcare IT managers must manage an increasing variety of data that will be used for tracking, monitoring, reacting,

and eventually predictive actions. All this data must be managed in an agile core infrastructure that is continuously accessible by the multiple services and tools requesting it.

While more than 75% of the companies surveyed said they had at least budgeted for IoT initiatives, only 50% are funded at the corporate level, 34% stated that the budgets were at the line of business, and the rest were scrambling to find funding.

Hiring employees with the necessary skills is another area where healthcare was more challenged than the average of the other industries analyzed in this study (Figure 4).

Figure 4 - Employee skills



Source: IDC's Data Age 2025 study, sponsored by Seagate

This creates an opportunity for consultants and services companies to provide strategic support and direction for healthcare organizations in executing their plans for advanced data technologies.

With regulations that touch various industries such as insurance, prescription drugs, and actual patient medical records, data security is an area where healthcare again finds itself below average. This is expected to worsen as more devices and sensors capture personal

biometric information continuously through embedded medical devices, remote video or audio, and medical wearables. In the future, personalized medication will add to the data that must be protected; this same type of information also needs to be fed into worldwide databases that can inform the best disease treatments based on personal DNA. Of the companies surveyed, 35% were challenged in understanding which data required protection and how to protect it (Figure 5).

Of the companies surveyed, **35% were challenged** in understanding which data required protection and how to protect it.

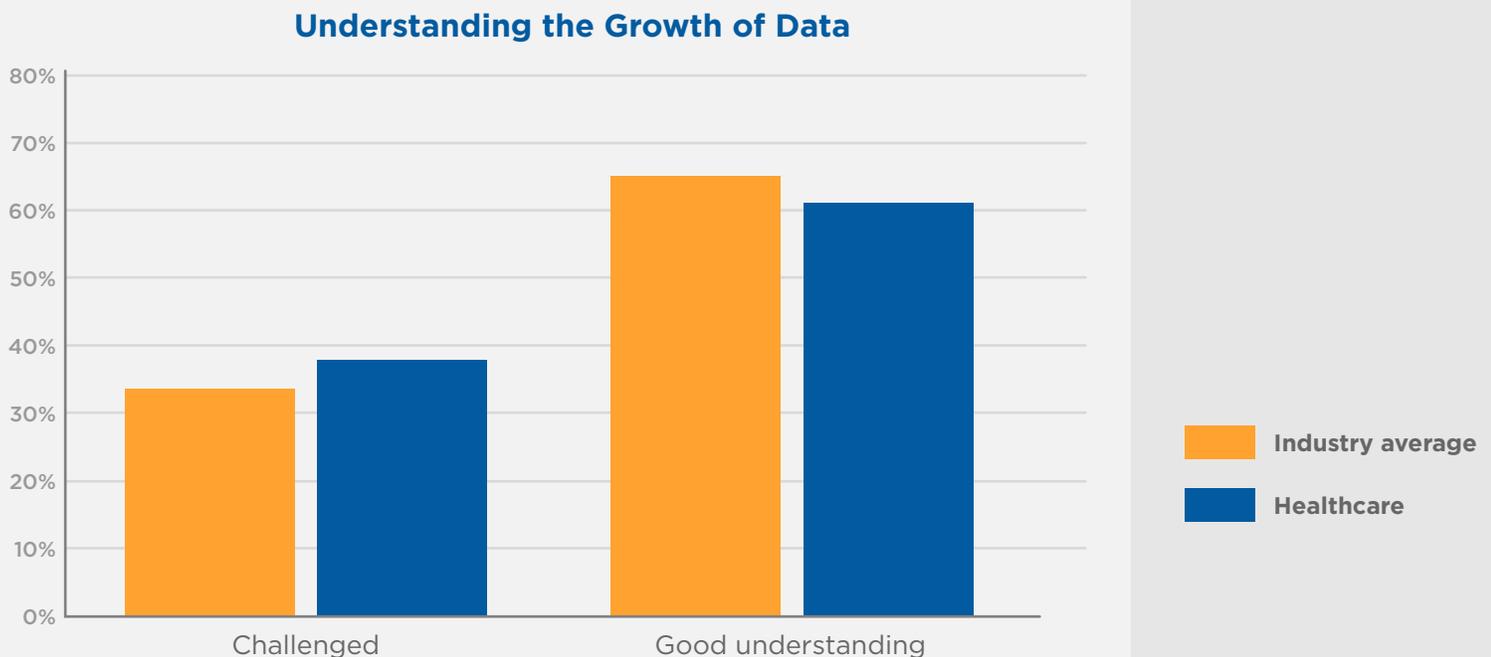
Figure 5 - Ability to secure all data that requires protection



Source: IDC's Data Age 2025 study, sponsored by Seagate

The final area where healthcare found itself below the industry average was in predicting and managing the growth of its own Datasphere. Roughly 38% at least lacked a solid understanding regarding the impending data growth expected for the healthcare industry (Figure 6).

Figure 6 - Managing data



Source: IDC's Data Age 2025 study, sponsored by Seagate

While the surveyed respondents revealed an average to slightly below average industry with respect to data readiness, the growth in data across various types exacerbates the concern that healthcare organizations will find themselves exhausting resources just to keep up with data storage requirements or being unable to invest in the technologies necessary to become leaders in their field.

Healthcare providers do not want to be in a position of playing catch-up. Access to healthcare has the potential to become much more competitive, given the changing healthcare insurance landscape and the

increasing exposure to social apps and digital communities in which ratings and personal experiences influence patient choice. Hospitals and other healthcare facilities want to be able to attract the finest doctors, surgeons, nurses, and other healthcare providers so that highly satisfied patients share their experiences in these social outlets.

Of course, breaches in such sensitive and private data are inexcusable in the eyes of patients. They can be devastating to patient flow as well as hospital finances due to penalties and potential litigation.



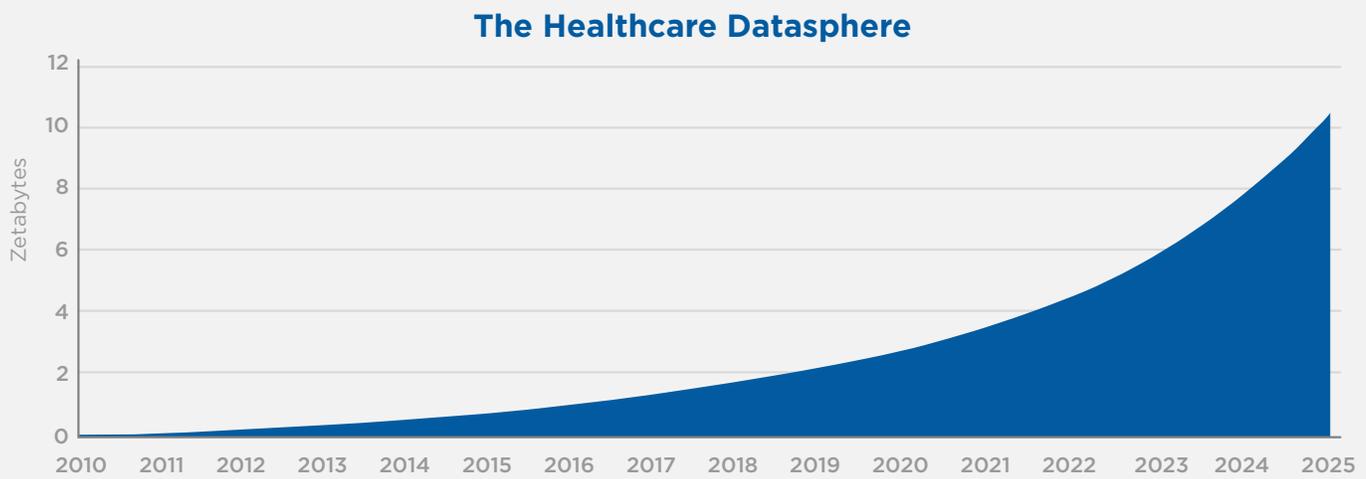
Chapter 2

Revelations in the Healthcare Datasphere

Healthcare is the fastest-growing industry Datasphere that IDC evaluated. Critical and hypercritical (life-dependent) data are also

growing the fastest within the healthcare industry, as one might expect (Figure 7).

Figure 7 - Data growth in the healthcare industry

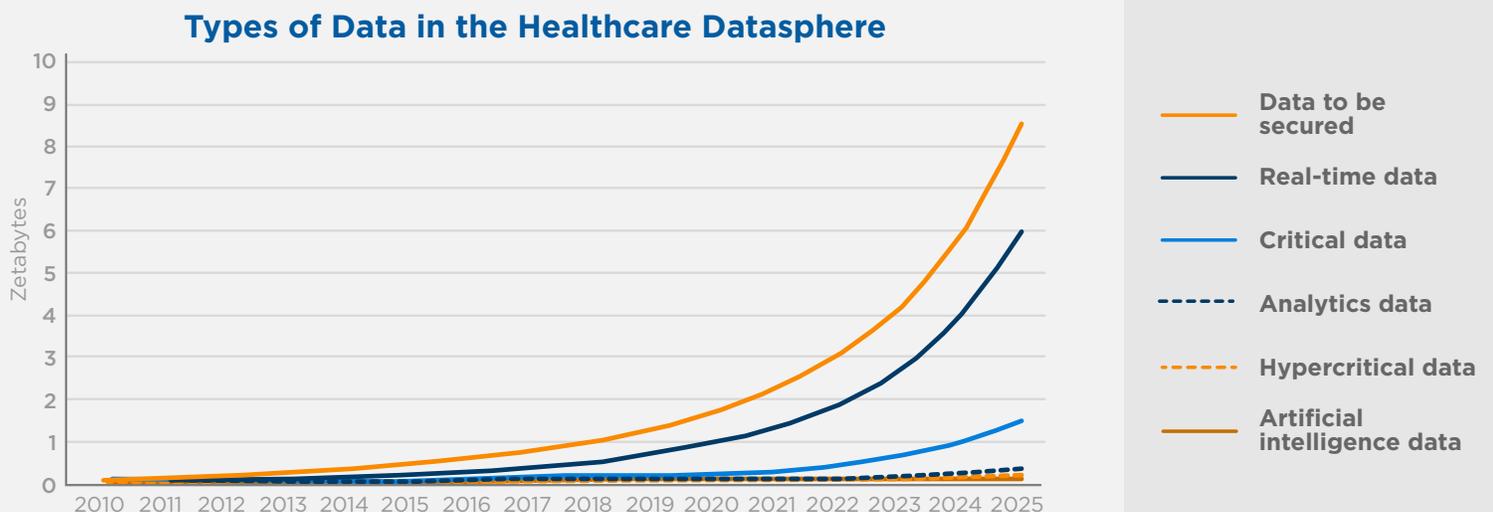


Source: IDC's Data Age 2025 study, sponsored by Seagate

The healthcare Datasphere is not only the fastest-growing industry in terms of data creation but also in the type of data being

created. Figure 8 illustrates the growth trajectories of various types of data that are part of the healthcare Datasphere.

Figure 8 - Critical data growth trends in healthcare



Source: IDC's Data Age 2025 study, sponsored by Seagate

Of course, not all data grows at the same rate. The table below provides further insight into the characteristics of the data in Figure 8.

	2018–2025 CAGR	% of 2018 Healthcare Datasphere	% of 2025 Healthcare Datasphere
Data to be secured	36%	83%	83%
Real-Time data	43%	40%	58%
Critical data	47%	8%	14%
Analytics data	54%	1%	3%
Hypercritical data	61%	0%	1%
Artificial intelligence data	66%	0%	1%

Source: IDC's Data Age 2025 study, sponsored by Seagate

The aggressive growth of critical and hypercritical data in healthcare is obvious, given that this type of data impacts human life directly. The real-time data that feeds embedded medical devices or influences personalized patient treatment must be correct; lives are at stake. Advanced insight and tools must come from analytics and artificial intelligence, two other fast-growing types of data within the healthcare Datasphere.

The shift to value-based care, the rise of consumerism, and the promise of personalized medicine are driving the healthcare industry. A lot of data will be required to succeed on these high-touch deliverables.

Rich content is increasing due to the recording of operational procedures for education and litigation reasons. The future recording of remote and in-home healthcare will place pressure on IT managers who must store and manage all this data in cost-effective yet easily searchable and discoverable ways.

Personalized medicine will drive massive computing and data growth in genomics as providers seek tailored prescriptions to optimize the effect of medications. This will not only drive up cost, but also expectations for quicker relief from ailments. This highlights the necessity of accuracy in critical and hypercritical data upon which lives depend.

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The use of electronic health records is at its highest adoption rates ever, especially in the U.S.; they lie at the heart of healthcare data processes and clinical workflows as a core technology. Increasing efficiencies in workflows and response times also contribute to the growth of real-time data, for which connectivity, bandwidth, and low latency will be vital.

Workflows are now transitioning from being driven by data entry on closed applications to more open outcome-focused platforms driven by the cloud. This is paving the way for silo disruption, value creation, new care models, and patient care journeys. As a result, new use cases are emerging and maturing, leading to a wave of next-generation technologies advancing in a number of segments such as

analytics, clinical documentation and workflow, patient/member engagement and experience, and imaging and archiving.

The industry is fast being disrupted by non-traditional entrants looking to reshape the status quo; provider frustration and rapidly shifting patient demands add challenges, too. The opportunities for personalized care, tailored healthcare insurance premiums (based on diet, exercise, and even DNA markers), and preventative care based on predictive analytics are fraught with ethical and moral issues.

Nonetheless, they are real – and they all require large doses of data that must be authentic and trusted.



Chapter 3

Prescriptions for the Healthcare Industry

The healthcare industry is at DATCON 3. It is just average and is ill-prepared to handle the digital-rich future. Yet, its customers expect nothing but the best because of the way healthcare touches their lives. Industry participants should consider the following actions to improve their DATCON score.

➤ Healthcare digital transformation (DX) can no longer be ignored.

Healthcare organizations must be ready for the digital age, yet the industry has traditionally, and admittedly, lagged behind others in the adoption of technology. Leaders must recognize the deep transformative and experiential qualities of the DX journey as well as the potential it holds for impact on healthcare.

The question is: How can healthcare think about DX safely and deliver on value, respond to consumerism, improve outcomes, and get digital done? It's a serious question with a multitude of answers, and it requires significant investment and deliberate focus by healthcare executives. If DX is done properly, then the outcome is coordinated, patient experiences are consistent and exceptional, quality of life is improved, and patient privacy is preserved. What follows is not just a healthy customer base, but an increased flow of customers based on positive recommendations from existing customers.

➤ Data security and privacy cannot be overlooked.

The right identity and security controls are critical for organizations to achieve effective data governance, prevent data misuse, accelerate process automation, and further drive DX. Leaders must ensure that identity security and privacy compliance are at the heart of all DX strategy and any efforts that leverage ever-expanding clinical, financial, and operational data assets.

A breach is not just costly to the financial performance of a healthcare organization; it also damages the reputation and future of its business.

➤ Investment in IT should not lag behind investment in healthcare innovation.

The IT skill set gap is more pronounced in healthcare and is not likely to close anytime soon. Healthcare companies must seek external assistance, if not professional services, in closing the DX gap and delivering on future demands, with data at the heart of the digitization of human care.

The healthcare Datasphere is the fastest-growing industry in terms of not just overall data growth, but also the amount of critical and hypercritical (life-dependent) data. If proper IT investment does not follow investment in DX technologies such as edge computing, robotics, and IoT, then the health of healthcare data will be at greater risk than it is today.

➤ Invest in blockchain now.

Many healthcare company IT departments increasingly will be trying to catch up with data management and falling short of investment in the necessary technologies, including blockchain, to prepare themselves for the impending wave of data heading their way. Companies must stay current with laws and regulations. All patient data must be tied securely to each patient; its veracity and authenticity cannot be questioned, and blockchain can help achieve this.

➤ The huge growth of data analytics in healthcare is undeniable.

Successful initiatives require centralized data infrastructures (a significant gap across the industry) with proper levels of security and privacy. Increasingly, the cloud is being leveraged to coalesce disparate sets of patient images across medical organizations to harness the power of analytics.

If healthcare is going to deliver on the promises of personalized, faster, more effective care, then it must be better than average when it comes to its data preparedness and competency. **Healthcare must take its medicine now to succeed** on a DX future and improve upon its DATCON score of 2.4.

Chapter 4

Methodology

The DATCON index is an indication of how well a particular industry is prepared to manage and capitalize on the data that is forecast to grow within that industry. Any given company within a particular industry may be above or below the calculated DATCON index for the industry.

The DATCON index is a calculated score that is synthesized across six vectors and numerous metrics that emerge from surveys, research, industry experts, and other sophisticated modeling techniques.

The six assessment vectors are:

1. Industry Datasphere

This vector score is derived by analyzing the growth trajectory of multiple types of data within IDC's Global Datasphere calculation for each industry. These types include critical and hypercritical data, data that requires various levels of security, data that is leveraged in big data

analytics, data that is leveraged in artificial intelligence applications, and real-time data.

The Datasphere is the amount of new data that is captured, created, replicated, and consumed in any given year.

2. Digital transformation and the third platform

This vector score is derived by assessing an industry's activity, initiatives, corporate sponsorships, investment, and other insights relative to a set of IDC's third-platform and innovation accelerators. These innovations include the IoT, blockchain, big data, artificial intelligence, and digital transformation progress.

Digital transformation is the application of third-platform and related technologies to fundamentally improve all aspects of society. For business, this means transforming decision-making with technology.

3. Structural score

This vector score combines various metrics related to an industry's structure (e.g., investment in edge IT,

IT spend as a percent of an industry's gross output, and leader/laggard condition).

4. C-level buy-in

This vector scores the involvement of a company's C-suite in sponsoring, leading, and budgeting for the various technologies across multiple metrics in the DATCON construct.

5. Data valuation competency

This vector assesses the skills necessary to understand the value of data, as well as to monetize it or treat it as an asset.

6. Leadership (self-scored)

This vector assesses a company's perspective on its own competency in data management, data security, data leadership and vision, and availability of skilled data workers. It also evaluates how a company sees itself compared to its peers.

All scores may be informed by IDC proprietary models, primary research, expert insight, and direct interviews with various Fortune 1000 companies. Each metric within each assessment vector is weighted relative to its importance in achieving a high level of competence. Each assessment vector is also weighted relative to its importance in achieving an optimized data-readiness state. The aggregate score becomes the DATCON level for the respective industry.

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