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Executive Summary

Innovative Healthcare and Life Sciences Organizations Rely on Big Data Analytics to Transform the Patient Experience

The healthcare and life sciences industries are at the precipice of major breakthroughs including eradicating diseases, improving the accuracy of diagnoses and treatments, and shifting to patient-centered services. To better understand healthcare and life sciences organizations and what it takes to drive innovation, IDC performed an in-depth study on their unique challenges and technology investments. Leveraging large amounts of data, these providers are able to implement precision medicine and genomic profiles to improve the effectiveness of their treatments. The same data that is being leveraged to improve health and wellbeing is also highly confidential and sensitive, putting much pressure on a distributed ecosystem to protect data and confidentiality.

A key finding from this study was that healthcare providers that were more innovative (“Thrivers”) have embraced AI, big data analytics, and machine learning via modernized datacenter resources. Their investments in emerging technologies and modernized datacenter resources enabled them to harness data to improve health and wellbeing and the overall patient experience. At the same time, Thrivers improved their operational efficiency and reduced fraud.



Executive Summary (continued)

Innovative Healthcare and Life Sciences Organizations Rely on Big Data Analytics to Transform the Patient Experience

Thrivers Recognize the Interconnectedness of Technologies

Thriving Healthcare & Life Sciences Providers Accelerate Time to Market and Acquire New Customers

By investing in modernized datacenter resources and emerging technologies, thriving healthcare and life sciences providers stand out from the rest with their productivity, shorter time to market, and ability to reach new customers. Thriving healthcare & life sciences providers are:

**5X**

better able to
improve the patient
experience

**14X**

more prepared to enable
orchestrated provider
engagement

**15X**

more capable of
reducing fraud,
waste, and abuse

**16X**

better able to support next-
generation electronic health
record (EHR) platforms

Global Research Methodology and Definitions

In 2018, IDC conducted a global research study to better understand the linkage between digital use-case deployments, investment in emerging technologies, and business outcomes.

Survey attributes

- » 1,221 mid- to large-sized organizations
- » IT & LOB respondents
- » 4 regions and 14 countries
- » North America, Latin America, EMEA, and Asia Pacific/Japan
- » Leading industry verticals with the greatest digital use-case deployments, including banking, discrete manufacturing, retail, healthcare, and life sciences.

Based on the outcomes achieved, IDC grouped study participants into four categories. Those with the most positive business results are called “Thrivers” and those that lagged in positive results are called “Survivors.”

Additionally, IDC conducted 16 in-depth interviews with organizations to dig deeper into the business value and real-world deployments thriving organizations have made.

Full research results were published in a Dell EMC and Intel-sponsored IDC White Paper: [“Emerging Technology and Modern IT: The Key to Unlocking Your Data Capital.”](#)

Defining Characteristics of Healthcare and Life Sciences Leaders

Leading healthcare and life sciences providers are able to bring more of their innovations to market quickly by fully leveraging their investments in modernized datacenters and emerging technologies. While the ultimate goal is improving health and the patient experience, these providers have also improved their business bottom lines by improving operational efficiency and reducing capital expenses.



Attributes of Leading Healthcare and Life Sciences Providers Include...

Enhanced data security

- » Ability to protect and control data with replication, snapshot, backup, archive, and continuous availability and recovery technology. Thrivers had this ability at a rate 7x that of Survivors
- » Thrivers are 13x more likely to have deployed enhanced data security provisioning

Enablement of accelerated compute to power big data analytics and AI

- » Thrivers are 15x as likely to have invested in servers powered by GPUs and FPGA processors
- » Half of Thrivers have embedded big data, analytics, ML, and AI within their IT and datacenter management processes, versus just 5% of Survivors

Greater deployment of technologies that reduce management complexity and provisioning times

- » Thrivers are 55x more likely than Survivors to have automated configuration and provisioning, and 35x more likely to have deployed software-defined infrastructure
- » Thrivers are 27x more likely to rely on hyperconverged infrastructure

Investments in new and upgraded datacenters

- » Thrivers have prepared their datacenters for additional power and cooling demands of accelerated compute; they upgraded their critical infrastructure 30x more than Survivors
- » 57% of Thrivers reported upgrading existing datacenters, versus only 6% of Survivors. Survivors had made no investments to add new datacenters, whereas half of Thrivers had added new datacenters

In contrast, Survivor organizations lack a unified strategy around innovation, operational efficiency, and customer retention. They show limited investments in advanced datacenter technologies and are less mature in their digital use-case deployments.

Thrivers Improve Lives with Data

To bring new innovations to market quickly, healthcare and life sciences organizations need technologies that enable them to leverage (as well as protect) massive amounts of data.

Knowledge-based medicine depends on improving the patient experience to encourage participation. Datamining and improving the ability to reach patients and gather, secure, and leverage data requires database and analytics tools that support a “consumer-like” engagement model.

Learning from data is the basis for innovation for life sciences. Technology is required to develop tools that enable deep learning and insights from clinical trials for drug efficacy and safety. Closing gaps in care and reducing readmission in healthcare requires technology that supports patient monitoring, integration of data and ability to assess risk. Secure clouds, predictive analytics, and automated workflows are required to analyze data in real time to reduce patient risk and identify areas to improve patient safety.

For Survivors, these priorities are viewed as discrete and opposing challenges, each requiring their own separate investments in IT services and infrastructure. Thrivers handle it differently. They recognize the interconnectedness — or “network effect” — of their investments in IT.

Modernizing IT in the datacenter serves as a springboard for investing in emerging technologies such as AI, ML, and big data analytics. These technologies are helping healthcare and life sciences providers tackle data privacy and security challenges while gaining insights to improve health and wellbeing.



Healthcare and Life Sciences Thrivers Excel Through...

A Mindset for Innovation

- » 1.9x more new products delivered to market
- » 16x more capable of supporting next-generation EHR platforms
- » 43x more capable of enabling open access scheduling and payment

Patient-Centered Focus

- » 5x better patient experience
- » 12x readmission avoidance
- » 20x better data and IDMP compliance
- » 16x improvement in real-time patient/drug safety

Operational Excellence to Drive Efficiency

- » 1.6x more profitable
- » 2x better employee productivity
- » 1.9x better employee retention
- » 1.9x shorter time to market for new products
- » 2.6x reduction in capital expenditures

Thrivers Deploy More Advanced Technologies in Their Datacenters

In their own datacenters, healthcare and life sciences thrivers report technology deployment rates that improve operational efficiency, ensure security and compliance, reduce management complexity, and reduce provisioning times.



HEALTHCARE AND LIFE SCIENCES THRIVERS ARE:

27X

as likely to have deployed hyperconverged systems

22X

as likely to have deployed storage for unstructured data (all flash/hybrid)

15X

as likely to have deployed accelerated computing using GPU- or FPGA-optimized servers

55X

as likely to use automated configuration and provisioning tools

The Interconnectedness (or “Network Effect”) of Investments in IT

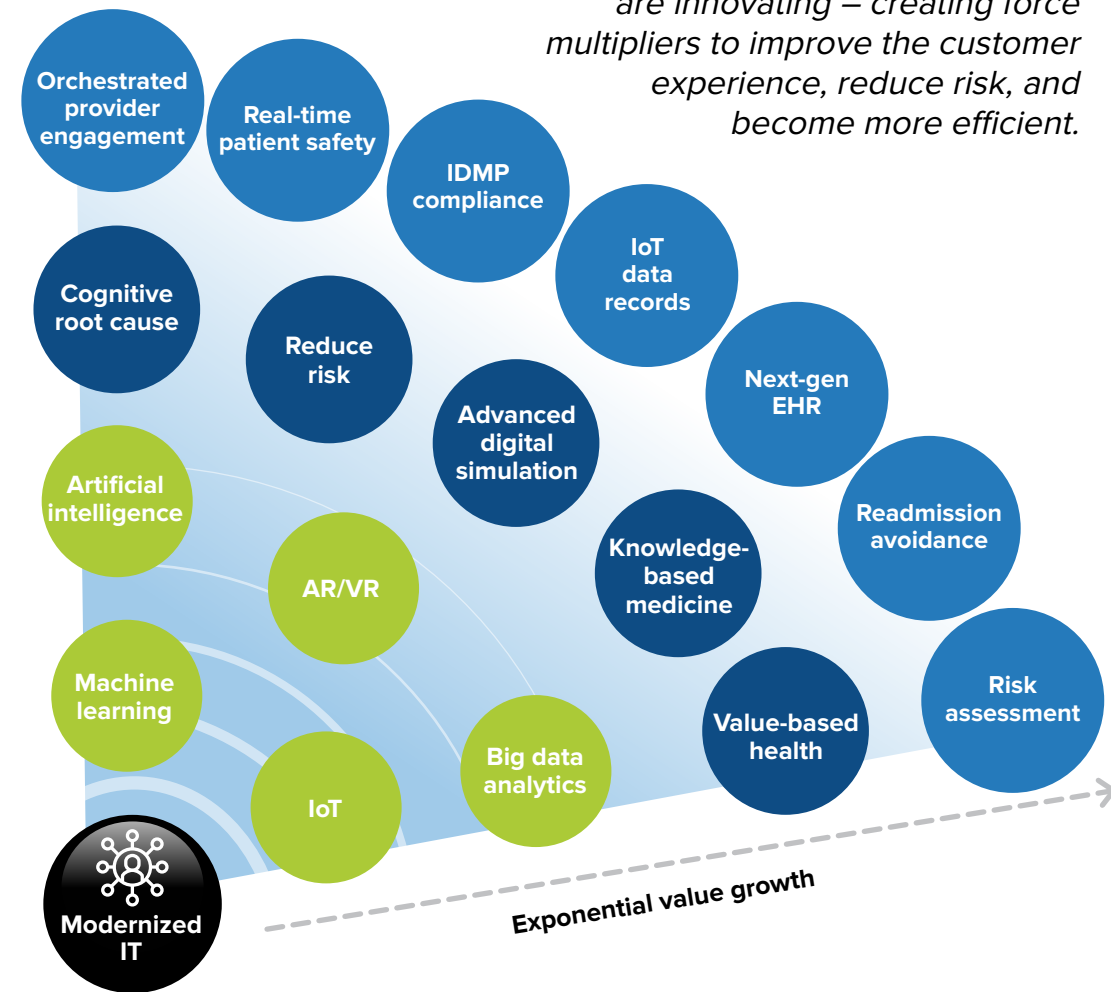
IDC research shows that thriving healthcare and life sciences providers share similar approaches regarding investing in and adopting emerging technologies.

Notably, they plan with the foundational assumption that emerging technology adoption is a longer-term process to ensure that the IT and datacenter resources can operate effectively and securely while also enabling innovations in patient care and medicine.

Thrivers Think Ahead, Experiment, and Are Willing to Adapt and Change Course

By threading together modernized datacenters and emerging technologies, healthcare and life sciences providers are creating force-multipliers that allow them to leverage data to innovate to improve health and the patient experience. At the same time, thrivers are improving productivity and reducing capital expenditures. As important as their ability to innovate is their ability to protect data and patient privacy. Thrivers’ use of advanced security provisioning and technology to integrate data sources is central to their success.

*Starting with investments in **modern IT** and **emerging technologies**, Thriving Healthcare and Life Sciences companies are innovating – creating force multipliers to improve the customer experience, reduce risk, and become more efficient.*



Real-World Experiences of Thriving Healthcare and Life Sciences Providers



The importance of organizing data the right way

"[Data] is such an important asset and it's serious enough that if you don't invest in it and don't have the right access to it and can't structure it correctly and discover from your own data and match it up to external data, you can lose competitive advantage."



Having a data warehouse for ML and AI

*"It's all clean, all the data is discoverable and available and in Google."
"In the six months we've been working on one of the projects to get one of our data sources out there, we've seen that they've made really big strides just in that time - so we're pretty excited about it."*



Improving the use of existing resources

"Using the technology we found that we were able to hire a couple more cardiologists because we had more cardiology rooms that were not being used. It also led us to realize that some of those rooms were not being used because equipment was broken. It led to an internal project where we looked at all the rooms that were not being used to determine why."



Speed to market with new services

"In some areas we're probably going from months to days - or even hours"

"We are increasing the number of patients getting treated for cancer."



Enabling process improvements for employees

"We had one technology we rolled out the adoption rate went from zero to 5,000 employees in 4 months. With the older technology, we couldn't even have done it. It was a whole brand new capability."

Becoming a Thriver

To become a Thriver, healthcare and life sciences providers must be able to unlock the value of data.

Thrivers recognize modernized datacenter resources are the foundation for supporting emerging tech. Thrivers are able to gather, analyze, secure, and leverage data to drive innovations in both life sciences and healthcare systems. Their goal is to improve health, wellbeing and the patient experience, and they accomplish these goals by leveraging the interconnectedness of their IT investments.



Want to become a Thriver? Here are the key questions to ask:

Are my datacenters up to the task?

- » Can my datacenter resources support the demands of emerging technologies?
- » Do my datacenters support greater agility through on-premises and cloud infrastructure?
- » Can my systems gather, cleanse, protect, and organize data for advanced analytics?
- » Do I have a plan to control the growth of data and securely decommission older equipment?

Am I prepared for the people & processes part of change?

- » Are my current employees able to scale the learning curve and navigate disruption to existing processes?
- » Can I close the skills gap with trusted services?
- » What training will I need to implement to help staff transition?
- » Am I generating enthusiasm within business units for the benefits of emerging tech?

Am I prepared to overcome internal barriers to change?

- » How can I demonstrate the value of and establish deeper trust in third-party data and tools?
- » Do I understand the hurdles and roles that will gain cross-organization buy-in and garner the full benefits of emerging technology?
- » Can I identify areas where insights from one part of the business would be beneficial to another, and encourage collaboration?

Am I ready for AI?

- » Do I have the capability to integrate and coordinate data from disparate sources, both internal and external, to increase the value to our organization?
- » Are my existing systems capable of protecting sensitive data?
- » What tools should I implement to sift through and organize the mountains of data I already have?
- » How can I encourage and enforce accuracy across numerous touchpoints for data collection?

Key Takeaways and Next Steps

- » Thrivers are more innovative and able to deliver almost 2x the number of new products at twice the speed of Survivors
- » Thrivers are able to coordinate their use of data to achieve a 14.8x improvement in fraud, waste, and abuse
- » Thriving healthcare and life sciences providers focus on driving innovation and improving outcomes by:
 - Using data and analytics to streamline processes and coordinate care, and achieve 5x improvements in the patient experience
 - Enabling IoT and real-time monitoring to reduce readmission rates
- » Thriving healthcare and life sciences providers consistently report higher revenue (1.8x), employee productivity (2x), and reduced capex (2.6x) than Survivors

Thriving healthcare and life sciences providers have invested in modernized IT and rely on technology such as all-flash storage, hyperconverged infrastructure, and advanced datacenter security provisioning to drive operational excellence. IDC recommends **developing a new datacenter vision** that enables the organization to create “Network Effects” based on their modernized datacenter resources and ability to leverage investments in emerging technologies.

[Click here to learn more](#)