



Dr. Robot Will See You Now: Unpacking the State of Artificial Intelligence in Healthcare – 2019

Healthcare & Life Sciences IT Services (HLS ITS)

Market Report – October 2018: Complimentary Abstract / Table of Contents

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Background and scope of research

There is a growing interest about Artificial Intelligence (AI) technologies among healthcare enterprises. AI presents unique opportunities for healthcare enterprises – allowing them to improve customer experience, achieve operational efficiency, enhance employee productivity, cut costs, accelerate speed-to-market, and develop more personalized products.

While AI is a relatively new area in the healthcare space and its adoption is in the nascent stage, digitalization of healthcare is accelerating enterprises' interest in AI. With CEOs and CIOs acknowledging the transformative power of AI, enterprises are rapidly building appropriate AI strategies. To help healthcare gain better visibility into the impact of AI, Everest Group has analyzed the market from the vantage point of healthcare enterprises.



In this market report, we analyze the AI investments for 27 leading U.S.-based healthcare enterprises by mapping them on Everest Group's AI effectiveness assessment model, which is a composite index of a range of distinct metrics related to each enterprise's capability maturity and the outcomes

Scope of this report:



Geography
United States



Industry
Healthcare (payers, providers, and Pharmacy Benefit Manager (PBMs))



Companies
Market activity and investments of 17 leading healthcare providers, 10 payers, and 5 PBMs in AI



Use cases
Only publicly-available information (~80 distinct use cases) has been used for the entire analysis in this report

Note: The source of all content is Everest Group unless otherwise specified

Overview and abbreviated summary of key messages (page 1 of 2)

This reports aims to demystify AI adoption across the healthcare ecosystem, assess leading enterprises on AI investments, cull out best practices from leaders, illustrate the impact generated, and help enterprises understand the AI innovation ecosystem. We also propose a roadmap for market stakeholders and delve into the future of AI adoption in healthcare

Some of the findings in this report, among others, are:

Key enabler of AI in healthcare

- Global healthcare AI market is expected to exceed US\$6 billion by 2022, driven by high acceptance of technology, increase in healthcare data, shift to value-based care, and rise of consumerism. On supply side, large volumes of data and changing technology landscape are driving market growth
- Majority of AI decisions have significant impact on business processes (patient care, data management etc.), member/patient experience (distinctive health solutions, care experience etc.), and cost (cost of handling customer enquiries, automation reducing need for manual labor) – which are key concerns for chief executives

Current state of adoption

- Machine Learning (ML) and Natural Language Processing (NLP) have become mainstream in healthcare; ML handles structured data (images, electrophysiology data, genetic data, etc.) while NLP processes unstructured textual information (clinical and policy guidelines, clinical notes, etc.)
- Cognitive technologies are expected to play an important part in health plans' technology strategies. With healthcare data increasing in volume and complexity, providers are looking to leverage deep learning to explore complex, non-linear patterns in data

Overview and abbreviated summary of key messages (page 2 of 2)

Service provider landscape

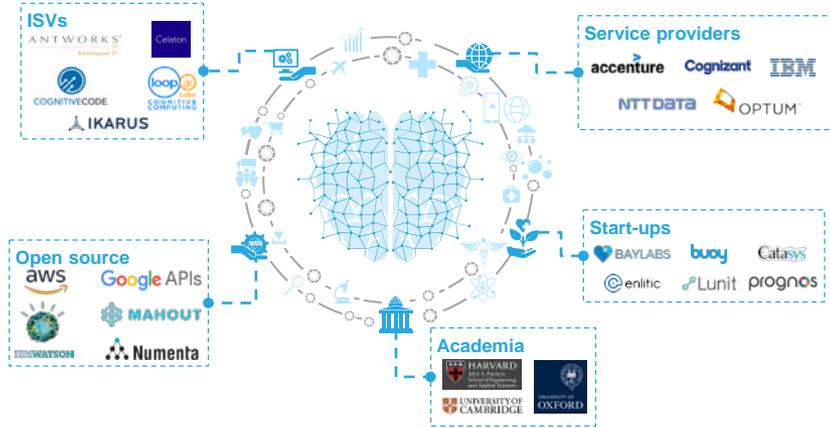
- The entire healthcare AI ecosystem comprises of various players and groups – IT service providers, ISVs, start-ups, open source platform providers, and academia – with distinct strengths and capabilities
- Healthcare enterprises majorly choose start-ups over other players in ecosystem as AI is considered a technically complex domain that can be handled better by specialists rather than generalists

Outlook

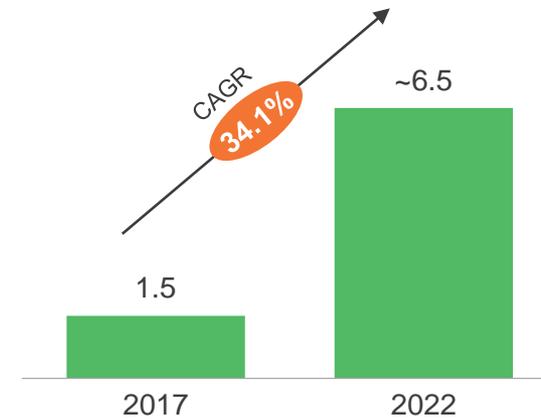
- Major challenges to AI adoption include absence of data interoperability, lack of sufficient data to train AI system, scarce talent, moral/ethical implications, and threat to data privacy
- The healthcare industry is expected to witness increased investment in AI talent (opening up of new roles such as machine trainers/engineer, healthcare data scientist, and script writers for bot interactions) and technology space (establishing more CoEs around AI solutions and partnering with technology vendors to handle complex processes)

This study offers multiple distinct chapters providing a deep dive into adopting AI at healthcare firms; below are four charts to illustrate the depth of the report

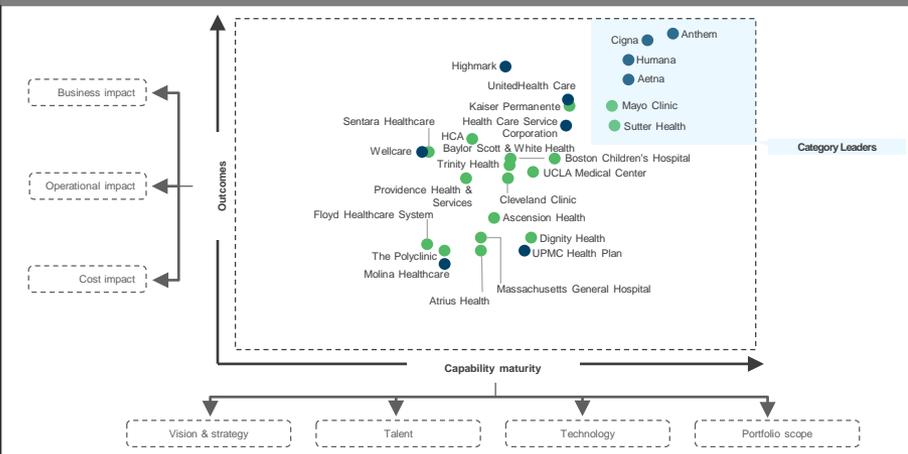
Healthcare AI ecosystem



Healthcare AI market size (US\$ billion, 2017-2022)



Assessing 27 healthcare enterprises on their AI investments



Comparison of AI Leaders with the rest of the industry

Capability maturity	AI Leaders	Rest	Outcomes	AI Leaders	Rest
Vision	4.2	2.5	Business impact	4.8	3.1
Execution	4.7	2.5	Operational impact	3.7	2.1
Internal resources	3.5	2.7	Cost impact	3.3	2.0
Partnerships /M&As	3.3	1.6			
Next-generation technologies	4.5	2.2			
Value chain	3.5	1.8			

Research calendar – Healthcare & Life Sciences IT services

■ Published ■ Planned □ Current release

Flagship HLS ITS reports

Release date

Healthcare Provider IT Services – Service Provider Landscape with Services PEAK Matrix™ Assessment 2017.....	November 2017
Life Sciences Annual Report 2018: Pharma’s “DevOps” Factor for Digital Transformation	March 2018
Healthcare Payer Annual Report 2018: Payers Look at Digital to Reinvent in a Turbulent Healthcare Market	March 2018
Life Sciences Digital in North America – Service Provider Landscape with Services PEAK Matrix™ Assessment 2018.....	June 2018
Life Sciences Digital in Europe – Service Provider Landscape with Services PEAK Matrix™ Assessment 2018	August 2018
Dr. Robot Will See You Now: Unpacking the State of Artificial Intelligence in Healthcare – 2019.....	October 2018
Healthcare Payer Digital IT Services – Service Provider Landscape with Services PEAK Matrix™ Assessment	Q4 2018
Healthcare Provider Digital IT Services – Service Provider Landscape with Services PEAK Matrix™ Assessment 2018.....	Q4 2018

Thematic HLS ITS reports

Healthcare IT Security Services – Market Trends	September 2017
The Rise of Medicare Advantage	October 2017
Life Sciences Report Card 2017 – Enterprise Initiatives and Service Provider Performance	March 2018
Healthcare Report Card 2017 – Enterprise Initiatives and Service Provider Performance	March 2018
Regulatory Stress: Life Sciences Market Under the GDPR Regime.....	March 2018

Note: For a list of all of our published HLS ITS reports, please refer to our [website page](#)

Additional HLS IT services research references

The following documents are recommended for additional insight on the topic covered in this report. The recommended documents either provide additional details on the topic or complementary content that may be of interest

- 1. Healthcare Payer Annual Report 2018: Payers Look at Digital to Reinvent in a Turbulent Healthcare Market** ([EGR-2018-20-R-2584](#)); March 2018. The healthcare payer market is changing because of certain secular themes, which include increasing consumerism, rise of digital, declining margins, growing distrust, and continuing regulatory uncertainty. At the same time, broader healthcare & life sciences market is undergoing tectonic shifts with varied implications for the payers' future. Some of these themes include, rapid pace of health system convergence, redefined payer-PBM relationship, extensive use of digital, and entry of technology companies in healthcare space. In this report, we have defined some of the key payer characteristics that will experience significant change in the future. Four key tenets that we focus on include members, providers, internal systems, and government.
- 2. Healthcare Report Card 2017 – Enterprise Initiatives and Service Provider Performance** ([EGR-2018-20-R-2557](#)); March 2018. In this report, we talk about key themes that dominated the healthcare market in 2017. It report lists top 15 healthcare service providers based on five healthcare PEAK Matrix™ BP and IT services evaluations done in 2017 and gives a brief description of 2018 market outlook.
- 3. Healthcare Provider Annual Report 2017: Will the Real Value-Based Care (VBC) Please Stand Up?** ([EGR-2017-12-R-2361](#)) October 2017. In this report, we have analyzed the current state of adoption of value-based care and evaluate the 40 largest health systems based on their value-based care performance and financial health. The report also provides actionable frameworks for the health systems to accelerate their value-based care initiatives and for the service providers to develop the requisite expertise to support these health systems.

For more information on this and other research published by Everest Group, please contact us:

Jimit Arora , Partner:	jimit.arora@everestgrp.com
Abhishek Singh , Vice President:	abhishek.singh@everestgrp.com
Nitish Mittal , Practice Director:	nitish.mittal@everestgrp.com
Mayank Thakur , Senior Analyst:	mayank.thakur@everestgrp.com
Pranav Kumar , Analyst:	pranav.kumar@everestgrp.com
Kanika Gupta , Analyst:	kanika.gupta@everestgrp.com

Website: www.everestgrp.com | Phone: +1-214-451-3000 | Email: info@everestgrp.com



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Dallas (Headquarters)

info@everestgrp.com
+1-214-451-3000

Bangalore

india@everestgrp.com
+91 806-781-9999

Delhi

india@everestgrp.com
+91-124-496-1000

London

unitedkingdom@everestgrp.com
+44-207-129-1318

New York

info@everestgrp.com
+1-646-805-4000

Toronto

canada@everestgrp.com
+1-416-388-6765

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