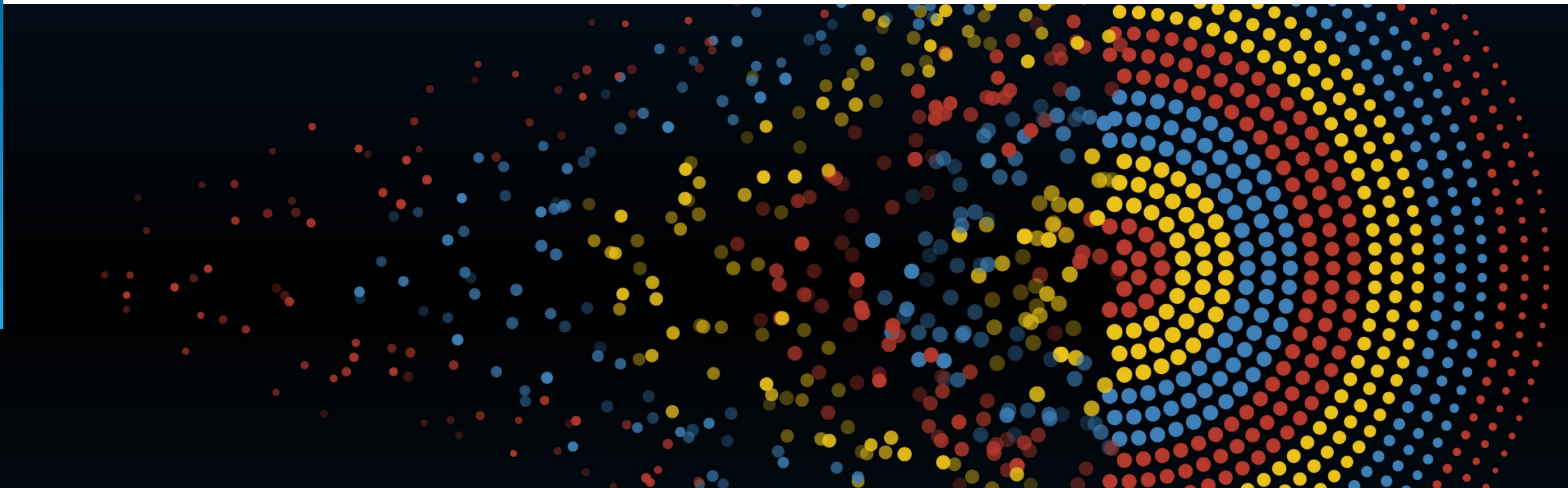# Harnessing the Power of Analytics and AI in Medicine: Life Sciences Enterprises Revamping Processes to Improve Patient Outcomes

May 2022: Complimentary Abstract / Table of Contents

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Background and scope of research

The rate of adoption of analytics and AI technologies has been on an upward trajectory in the life sciences industry, but the previous year saw a huge surge in adoption owing to the demand cumulating since the advent of COVID-19. The life sciences industry found itself at the epicenter of the COVID-19 crisis; therefore, pharma enterprises had to scale their business and upgrade their operational methodologies to navigate through the course of the pandemic. The primary objectives of enterprises leading to the adoption of analytics include improving productivity, raising cost efficiencies, and enhancing stakeholder experience.

As a prolonged effect of the pandemic, more enterprises have realized the necessity of modernizing operations to build a resilient supply chain and sustainable business, which has led to an increase in thematic investments in analytics in areas such as digital therapeutics, Internet of Medical Things (IoMT), pharmacovigilance, and Real-World Evidence (RWE).

In this report, we analyze the current state of analytics adoption in the life sciences industry, the impact analytics has on the emergence of new industry-specific themes, advanced analytics and AI use cases that support stakeholders across the value chain, and the characteristics of analytics-focused deals. Further, the report discusses how the pandemic has influenced the traditional workflow of pharma enterprises and how they can harness the value delivered by analytics in the future.

Scope of this report

Geography
Global

Industry
Life sciences

Services
Data and analytics

Use cases
Only publicly available information (~180 distinct use cases from 160+ case studies) has been used for the entire analysis in this report

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Overview and abbreviated summary of key messages

This report examines the current state of analytics adoption in the global life sciences industry and discusses advanced analytics and AI use cases that support stakeholders across the value chain. Further, the report discusses how the pandemic has influenced the traditional workflow of pharma enterprises and how they can harness the value delivered by analytics in the future.
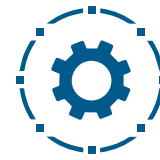
Some of the findings in this report, among others, are:

Current state of analytics in life sciences

- Rate of analytics adoption saw a surge in 2021 as the life sciences industry strived to meet the pent-up demand triggered by the pandemic – modernizing operations became necessary for enterprises to navigate through the prolonged global health crisis
- Adoption of analytics in life sciences is concentrated in North America and Europe as large buyers lead the adoption in developed countries. Majority of analytics-related deals in life sciences are large and mid-size, indicating a high average deal size among different industries

Emerging themes

- The major emerging themes that are central to analytics in life sciences are – digital therapeutics, precision medicine, internet of medical things, pharmacovigilance landscape transformation, and real-world evidence
- Technologies such as AI, Virtual Reality (VR), and computer vision are expected to accelerate the growth of the digital therapeutics market
- Analytics is being leveraged to derive significant value in the development of precision medicine for oncological treatments and preventative care

Analytics adoption across the life sciences value chain

- Although the rate of analytics adoption by life sciences enterprises varies across different value chain segments, it is fast-paced for most segments
- Apart from clinical trials, drug discovery, research, and pre-clinical trials experience significant market adoption, while analytics delivers the maximum value for clinical trials

COVID-19 impact

- The life sciences industry found itself at the epicenter as the COVID-19 outbreak continued to intensify over time; and pharmaceutical firms and medical devices companies took immediate actions to maintain business continuity
- As the world progresses to the next normal, analytics and AI technologies will further reshape the landscape of the global life sciences industry as enterprises intelligently reconfigure their business operations

This study offers four distinct chapters providing a deep dive into key aspects of the life sciences analytics market; below are four charts to illustrate the depth of the report

Growth drivers for analytics adoption in life sciences
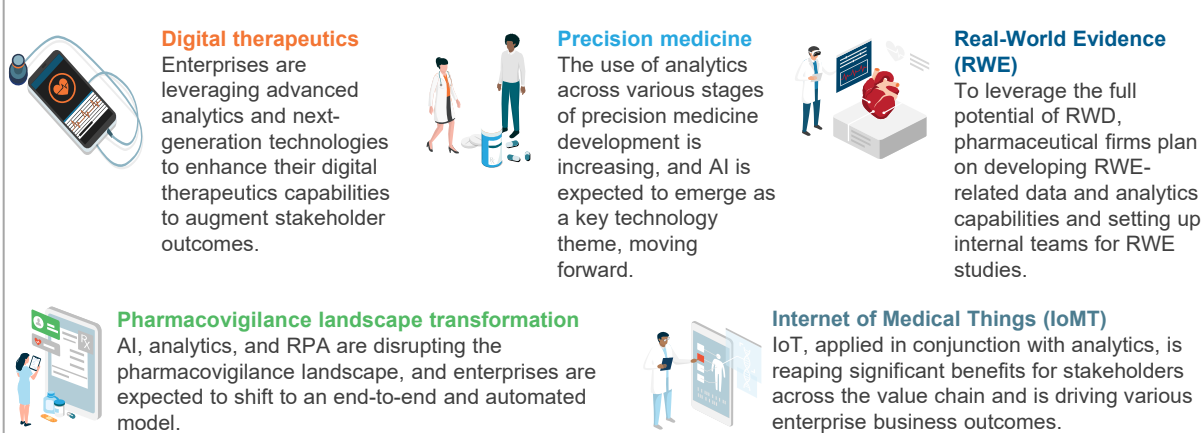
Prevalence of growth drivers[1]

62% — Process efficiency and productivity gains

26% — Cost efficiencies

18% — Improving stakeholder experience

Deal Analysis | Geography and buyer size trends

Percentage of deals, 2020
N=70[1,2]

Low (<10%)   Medium (10-25%)   High (>25%)

Emerging themes central to life sciences analytics

Digital therapeutics
Enterprises are leveraging advanced analytics and next-generation technologies to enhance their digital therapeutics capabilities to augment stakeholder outcomes.

Precision medicine
The use of analytics across various stages of precision medicine development is increasing, and AI is expected to emerge as a key technology theme, moving forward.

Real-World Evidence (RWE)
To leverage the full potential of RWD, pharmaceutical firms plan on developing RWE-related data and analytics capabilities and setting up internal teams for RWE studies.

Pharmacovigilance landscape transformation
AI, analytics, and RPA are disrupting the pharmacovigilance landscape, and enterprises are expected to shift to an end-to-end and automated model.

Internet of Medical Things (IoMT)
IoT, applied in conjunction with analytics, is reaping significant benefits for stakeholders across the value chain and is driving various enterprise business outcomes.

Analysis of life sciences analytics use cases across different value chain segments

Clinical trials

Manufacturing, supply chain, and distribution

Sales and marketing

Pharmacovigilance

Regulatory and medical affairs

Drug discovery, research, and pre-clinical trials

Medical device product development

Research calendar
Data & Analytics

Reports title	Release date
Data and Analytics (D&A) Services PEAK Matrix® Assessment 2021	July 2021
Data Modernization – The Backbone of a Future-ready Enterprise	July 2021
Data and Analytics (D&A) Service Provider Compendium 2021 – Update	September 2021
Augmented Data Management: Leveraging the Power of Artificial Intelligence to Handle the Data Deluge	October 2021
Analytics and AI Services Specialists PEAK Matrix® Assessment 2021	November 2021
Driving Enterprise Business Transformation with Next-generation Data Management	December 2021
Advanced Analytics & Insights (AA&I) Services PEAK Matrix® Assessment 2022	December 2021
Machine Learning Operations (MLOps): the Foundation of an Enterprise Built on Artificial Intelligence (AI)	January 2022
Data and Analytics (D&A) Services State of the Market Report 2022	January 2022
Analytics and AI Services Specialists – Service Provider Compendium 2022	February 2022
Artificial Intelligence (AI) Services PEAK Matrix® Assessment 2022	March 2022
Artificial Intelligence (AI) Service Provider Compendium 2022	March 2022
Accelerating the Value of Data in Life Sciences	March 2022
Harnessing the Power of Analytics and AI in Medicine: Life Sciences Enterprises Revamping Processes to Improve Patient Outcomes	**May 2022**
Data and Analytics (D&A) – PEAK Matrix Assessment 2022	Q2 2022
Third-party Data Provider Ecosystem: A Bedrock to Scale AI Initiatives	Q2 2022

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