TECHNOLOGY HOLDINGS

Investment Banking in Tech Services,
Consulting, Software & Healthcare

Unlocking the Digital Transformation Opportunity in Life Sciences

Rapidly changing engagement models driving the shift toward digital solutions

April 2023

Introduction

This report from Technology Holdings aims to capture the latest market trends and examine how the marketing, commercial, sales, and medical affairs strategy of life sciences organizations are being impacted by accelerating changes caused by digital transformation. Additionally, the report analyzes recent M&A activity in commercialization, IT services, and cloud transformation within the life sciences industry to identify specific trends.

1. **Market Trends – Adoption of Emerging Technologies in the Life Sciences Industry**
2. **Market Segmentation and Value Chain**
3. **Digital Transformation Market Opportunity in Life Sciences and Challenges for Adoption**
4. **M&A Activity in Commercialization, Market Access and Life Sciences IT**

This report was created through a combination of in-depth interviews with industry experts, comprehensive secondary research, and the wealth of industry experience and knowledge of our partners at Technology Holdings.


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About Technology Holdings

Technology Holdings (TH) is a **global boutique investment bank** dedicated to delivering M&A and capital raising to **technology services, software, consulting, and business process management companies** globally, with enterprise values ranging from **US $25 million to US $250 million.**

TH has a global team of 50+ people with a strong track record of closing digital transformation transactions including tech-enabled services vendors for life sciences organizations across Europe, North America, and the Asia Pacific region.

Select life sciences vendor transactions closed by Technology Holdings are as follows:

Company	Transaction	Acquirer	Date
SUAZIO	Strategic Sale to	NAMSA® — ARCHIMED PORTFOLIO COMPANY	MARCH 2023
C·CLEAR PARTNERS	Strategic Sale to	valantic	JUNE 2022
WORRELL	Strategic Sale to	Veranex — SUMMIT PARTNERS PORTFOLIO COMPANY	DECEMBER 2021
ACROSS HEALTH	Strategic Sale to	PRECISION MEDICINE GROUP — Blackstone PORTFOLIO COMPANY	FEBRUARY 2021
blue latitude health	Strategic Sale to	FISHAWACK HEALTH	DECEMBER 2018

- Digital Transformation & Innovation
- IT Services, Cloud & Cybersecurity
- Analytics, Data Sciences & AI
- Fintech, Insurtech and SaaS
- Consultancies
- Healthcare & Life Sciences
- Business Process Management
- Engineering Services

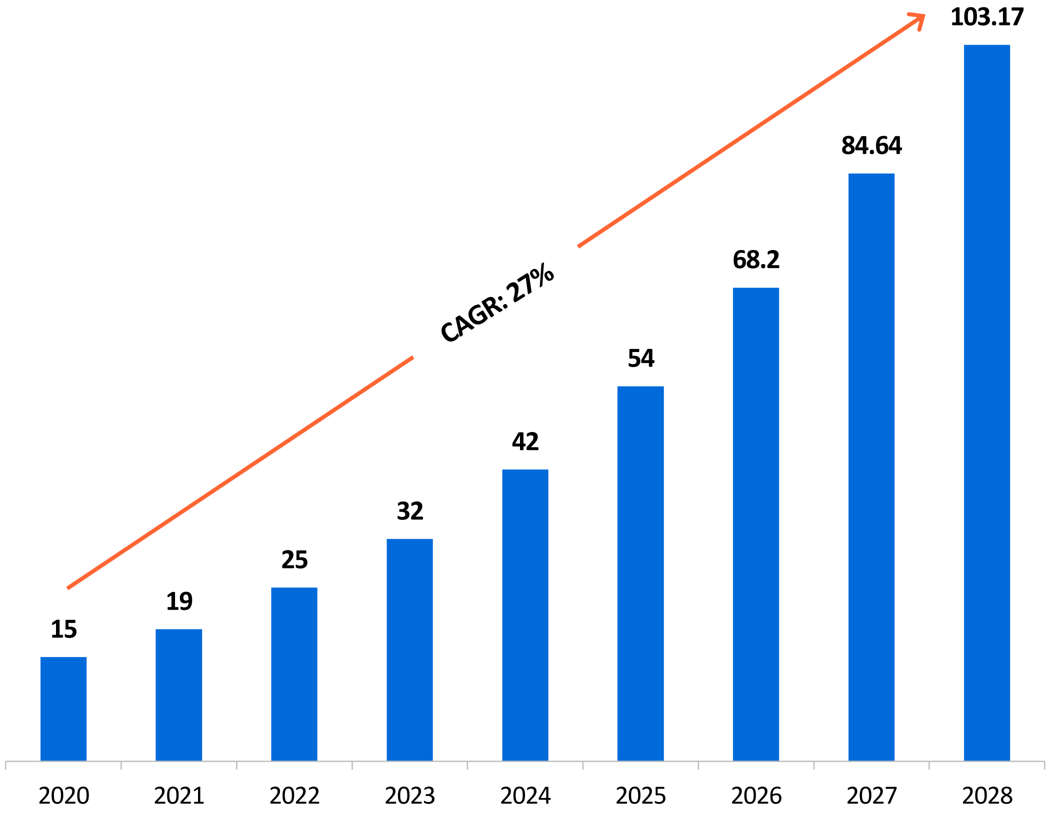
Market Overview

Market Drivers

- Pharma firms, historically dependent on a massive field force for product promotions, continue to face challenges as the industry shifts towards a **digital-first engagement model**. The life sciences sector as a whole has been slow in adopting digital technologies across various functions
- While marketers now continue to invest in **digital solutions**, the therapies of the future – **cell and gene therapy**, precision-based medicine, and the increasing focus on providing "**beyond-the-pill" services**– will need a very different **go-to-market model** with a more digital approach
- The industry shift to a mix of **digita**l and **in-person engagement** with healthcare professionals and patients is driving growth in **tech-based marketing solutions** as marketers target specific audiences with **targeted messages**
- Traditionally, spending on sales representatives and free product samples handed over to doctors took up a big chunk of commercial expenses for pharma companies

FIGURE 1:

Pharma Marketing Spend on Digital, 2020 to 2028 (US$ billion)[1]



Market Size

- The **marketing spend** by life sciences companies **on digital** has seen enormous growth since 2020 and is expected to grow from **US $25 billion in 2022** to **US $103.2 billion** at a CAGR of 27%, reflecting a new landscape for marketing budgets
- Research conducted by McKinsey further illustrates this shift: **52% of the companies** surveyed reported their **go-to-market approach** is changing from a traditional in-person model to a digital approach

Advancement in life sciences research and increasing demand for personalized medicine are driving revenue growth, presenting significant opportunities for tech enabling vendors

[1] Source: Biotechnology & Pharmaceutical Services Outsourcing Market, Precedence Research

Market Segmentation and Value Chain

Technology Holdings identifies the ecosystem of outsourced pharma services in **three broad categories** (see Figure 2) :

01 Commercialization | **02 Clinical** | **03 Digital Services**

- This report focuses on how the accelerating changes and fast emerging trends in **commercialization and digital services** will continue to affect the budgets and resource allocation of life sciences and biopharma organizations in the near future. Strong underlying interest in these categories will continue to capture untapped value creation for all stakeholders in the industry
- In the value chain, we refer to **digital services (IT services, and data and analytics)** as essential horizontal processes that are essential for the efficient running of business operations as well as leveraging innovations across industry-specific activities
- In recent years pharmaceutical companies have increasingly seen digitization as a strategic initiative that can transform various components within the value chain to **increase productivity and profitability**

FIGURE 2: **Life Science Outsourcing Services Market Segmentation and Value Chain[1]**

COMMERCIALIZATION

Commercial

- HCP Channel Engagement
- Branding & Public Relations
- Omnichannel Sales Solution
- Market Research & Commercial Insights
- Content Management
- Consulting & Advisory Services
- HCP & Patient Analytics
- Learning & Development
- Commercial Operations Analytics
- HCP Contracting
- Medical Affairs

Across Health, CitusTech, Envison Pharma, Eversana, Fishawack Health, Trinity Life Sciences, Indegene, IQVIA, League, Uniphar

Market Access

- Pricing and Reimbursement
- Stakeholder Engagement
- Health Economy and Outcomes Research
- Regulatory Affairs
- Market Access Strategy Development

MedTech Global, APCER, Indegene, IQVIA, Syneos Health, Tech Mahindra, Uniphar

CLINICAL

Medical Communications

- Safety and Compliance Management
- Regulatory Content
- Risk & Quality Audit
- Medical Writing
- Track and Trace
- Pharma Covigilence
- Medical Affairs

APCER, Eversana, Fishawack Health, Indegene, Kinapse, Tech Mahindra

Clinical Trial Management

- Clinical Trial Monitoring
- Patient Engagement
- Clinical Data Management
- Real World Evidence
- Consulting

Fishawack Health, Indegene, Syneos, Uniphar

Contract Research & Manufacturing

- Drug Discovery
- Contract Manufacturing
- Pre-Clinical Testing
- Data Analytics based Research

IQVIA, MedPace, Parexel, Syneos Health

DIGITAL SERVICES

IT Services

- Cloud transformation platforms
- Automation & BPO
- Cybersecurity
- Digital Transformation

Infosys, Tech Mahindra, Microsoft, Wipro, Salesforce, Cognizant

Data and Analytics

- Data Management
- Artificial Intelligence
- Analytics

IQVIA, Salesforce, Clarivate, Veeva, Ipsos, Adobe

Greater adoption of analytics in every business function in life sciences will spur further innovation in services

[1]Disclaimer: The list of vendors mentioned in each of the segments is for representative purpose only and is in no way an exhaustive list

Opportunities

- Digital budgets today stand at **28% of total marketing budget**, much lower than the average **B2B spend of 50% on digital initiatives** in other industries
- According to research from Reuters Pharma and Elsevier, **spending on digital promotion is expected to increase** as a share of the total promotional budget to over **60%** by 2025
- Figure 4 shows the satisfaction levels of pharma companies with their digital initiatives. The **largest opportunity for digital investment** over the next few years will come from the companies that have marked **neutral**
- Budgets for educational spending in **marketing and medical affairs will rise in the next three years** led by conference webcasts, educational platforms, continuous medical education (CME), and patient education materials

FIGURE 3 :

Digital Spending % of Marketing Budget by Life Science Organizations[1]

Which percentage of your marketing budget is allocated to digital initiatives this year?

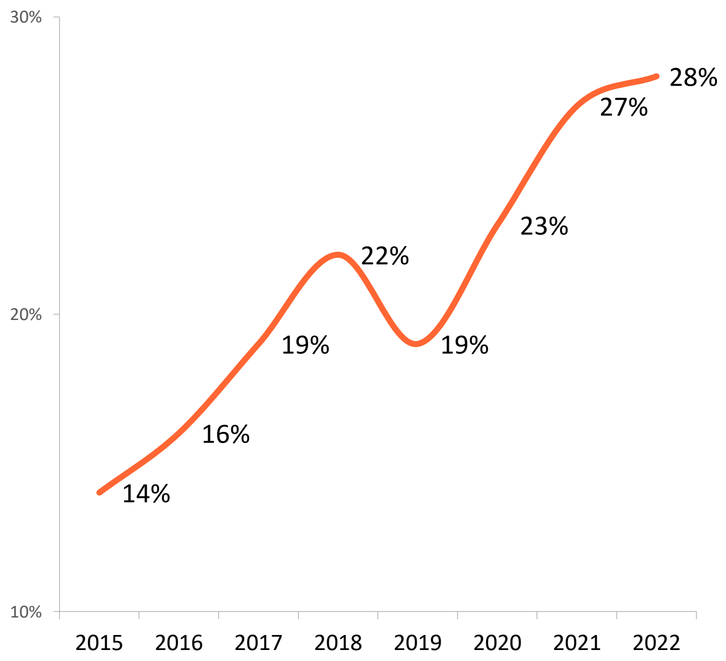
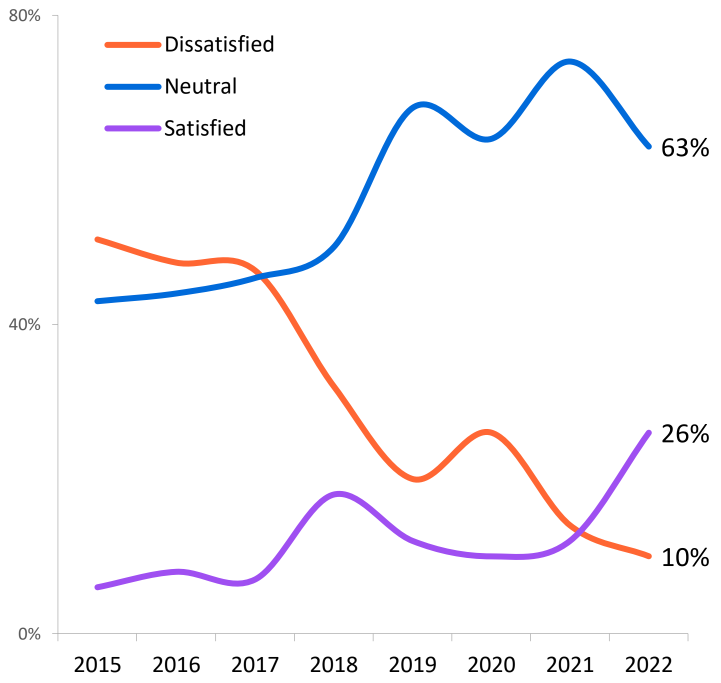


FIGURE 4:

Biopharma Satisfaction Levels of their Digital/Omnichannel Capabilities[1]

How satisfied are you with your current Digital / Omnichannel activities?



Digital marketing budgets of life sciences companies are higher than ever, but still only half as much as that of other industries

[1] Source: Maturometer 2022 report by Across Health

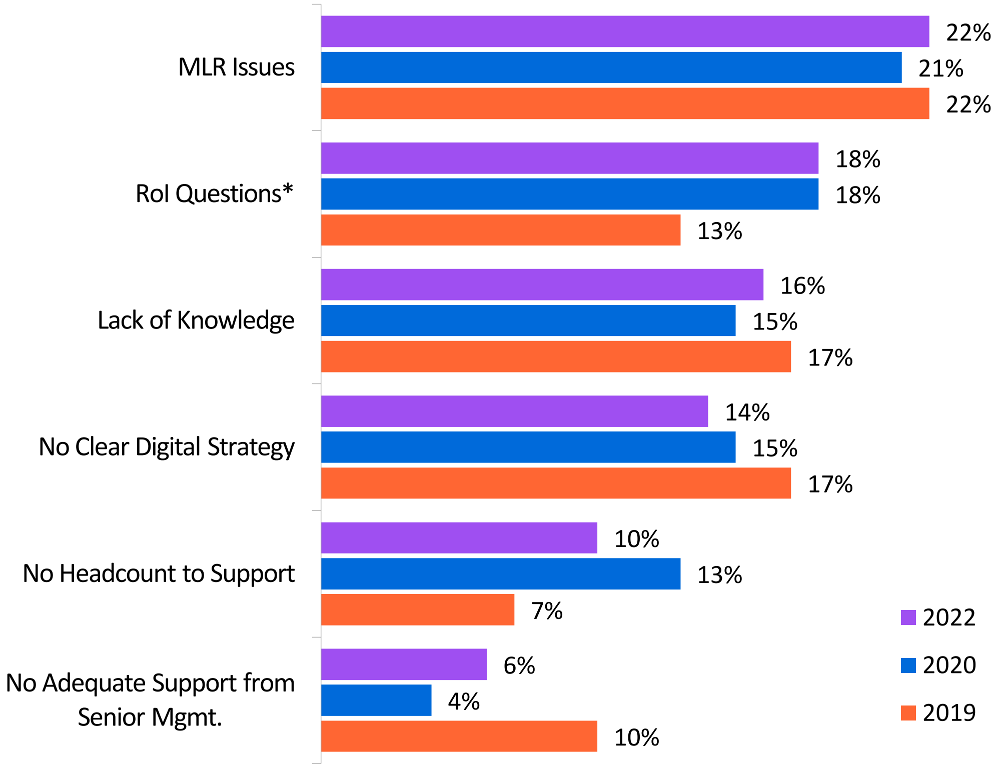
Challenges (1/2)

- Reduced **access to healthcare professionals** and **regulatory uncertainty in marketing** among other related problems, are causing companies to seek innovative solutions enabled by digital technologies
- Pharmaceutical marketers are relying on **digital channels** to resolve problems posed by traditional methods. But they also encounter several challenges in the digital space, including **privacy issues, regulatory limitations**, and difficulties in measuring and evaluating the impact of digital campaigns

FIGURE 5 :

Potential Bottlenecks for Digital Adoption[1]

Please allocate 100 points over potential bottlenecks for digital in your organization



The three major potential bottlenecks are discussed briefly in this report:

1 Medical, Legal, and Regulatory Affairs (MLR):

- Healthcare and pharmaceuticals are highly regulated industries and among those that are prone to large legal settlements rising out of False Claims Act violations and off-label promotions
- In life sciences marketing, it is necessary to communicate both the benefits and risks of a product. Marketers who use traditional channels have always been able to control how they present the **risk-benefit assessment** to end consumers
- Stricter regulations around digital marketing put limitations on possible messaging combinations, along with concerns about **data privacy and security**. However, as digital solutions become more advanced, efficient, and capable of handling MLR reviews, it is now **crucial for life science marketing teams to adopt optimized MLR workflows**

MLR continues to be the leading bottleneck and can significantly delay omnichannel efforts throughout the product life cycle. There is also a highlighted need to improve ROI[2] since the pandemic

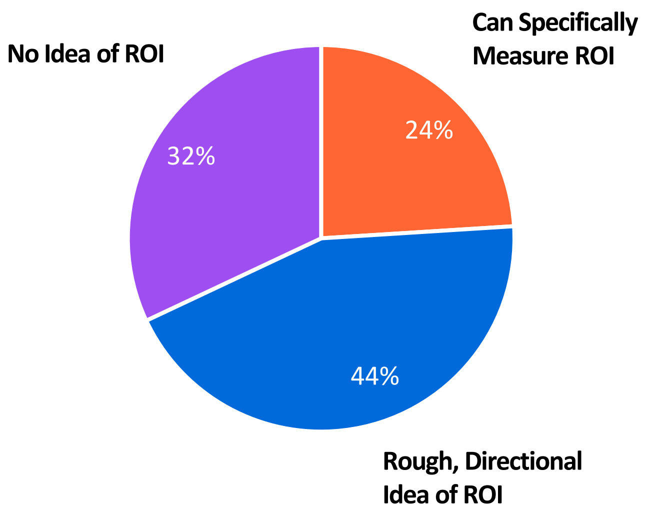
* RoI : Return on Investment

[1] Source: Maturometer 2022 report by Across Health

Challenges (2/2)

FIGURE 6 :

Maturity of ROI Measurement



2 Return on Investment

- Pharma companies have become relatively comfortable with some of the leading indicators of digital engagements such as **click-through rates**, and **time spent on websites** that can be easily tracked and regularly reported
- Capabilities like **artificial intelligence (AI)**, **machine learning (ML)**, and **data analytics** can enhance the effectiveness of traditional functions, **reducing risk** and enhancing **cost efficiency** and **process optimization** across the value chain
- While most life sciences companies have invested in several digital areas, only a small number of them have started realizing the full benefits. Figure 6 indicates only about **24% of the companies surveyed can measure their return on digital investment**
- Effective understanding of the preferences of health care professionals (HCP) is critical in ensuring **maximum ROI for pharma companies**

3 Lack of Knowledge

- When data resides in silos across the organization and partners, gathering all the required data is tedious, time-consuming, and error-prone. While life sciences companies, by nature, have a host of **data on HCP interaction**, **clinical trials**, and other metrics, there are some common hurdles to leveraging this data to establish a **holistic view of the patient or HCPs**
- **Lack of clear digital strategy and lack of focus on improving data** capabilities can slow the long-term growth of a life sciences company
- There are several ways for life sciences companies to develop their digital capabilities, depending on what they want to **retain in-house versus** what they can **outsource outside the company** within regulatory norms

77% of life sciences companies are yet to figure out a definitive mechanism to measure ROI

[1]Source: Digital Headwinds by Blue Ridge Partners Management Consulting

Market Trends in Commercialization

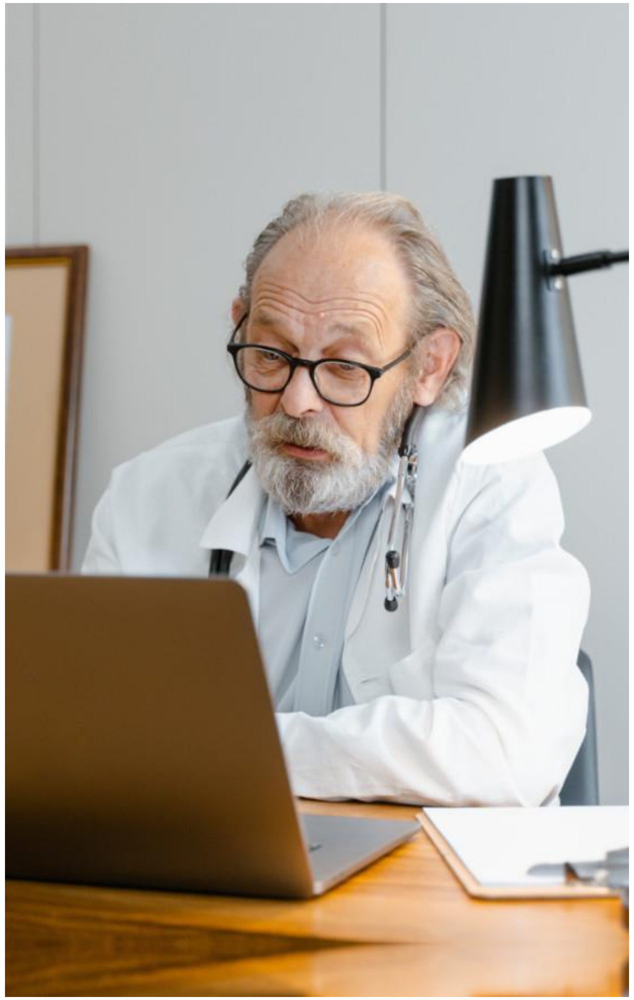
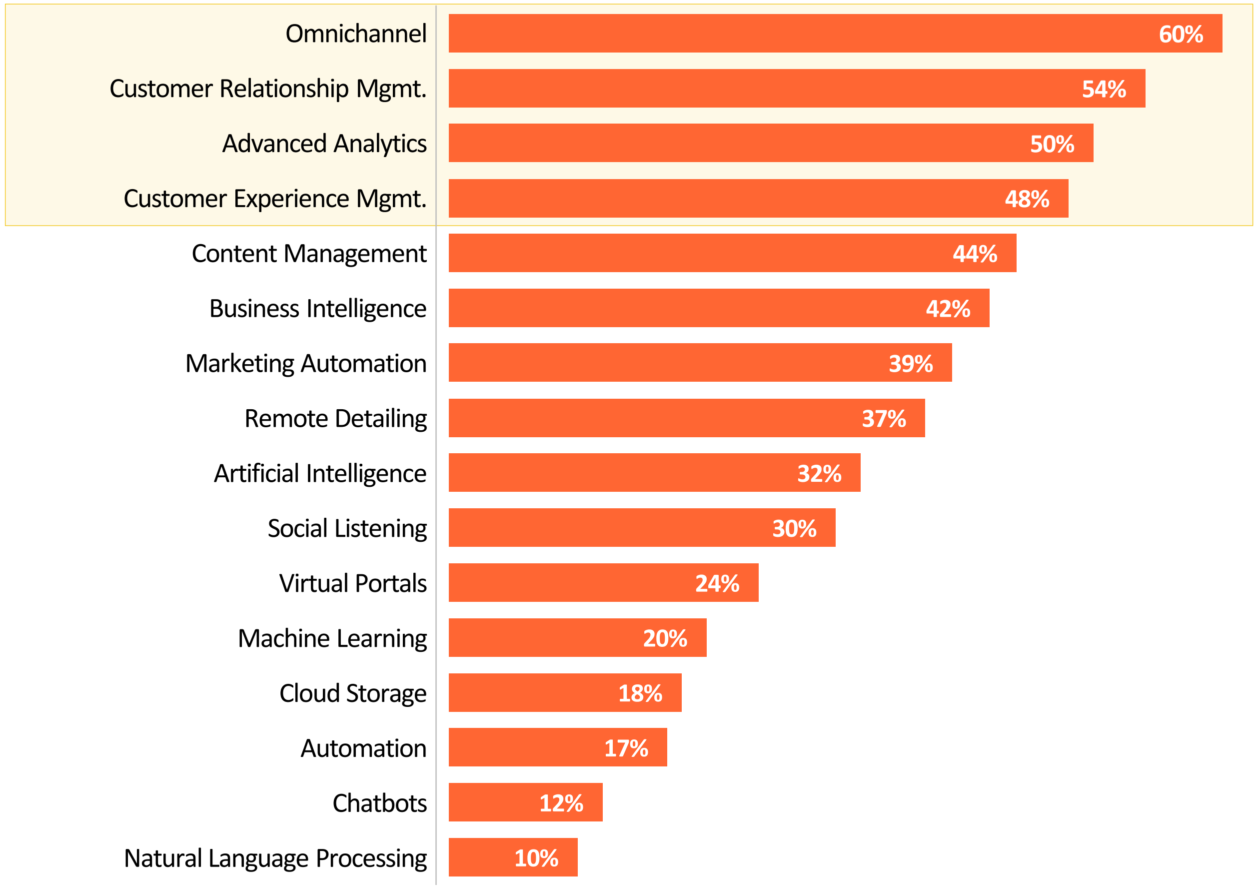


FIGURE 7:

Digital Spending by Priority Functions of Life Science Organizations[1]



- While digital engagement has opened new doors for interacting with HCPs, it has also created questions about how and when to use each channel with clients. There is no one-size-fits-all approach for engaging with doctors - **personalization of communications is a top factor in HCP satisfaction** with pharma
- A survey conducted by Reuters Pharma to identify the focus area for life sciences and biopharma organizations for investment in digital technology identifies **omnichannel engagement** as the highest priority followed by **CRM implementation**, **advanced analytics, and customer experience management**

Life sciences companies are looking beyond traditional methods to address evolving customer needs

[1]Source: Reuters Events Pharma, 2022

Transitioning from Multichannel to Omnichannel (1/3)

Drivers

- Pharmaceutical representatives remain important in the evolving industry, but their dominance has declined with the advent of precision medicine
- The demographic makeup of HCPs is an essential consideration when it comes to communication preferences. Today, **70%[1] of HCPs** are **digital natives**
- **Digital engagement** has created new opportunities for **interacting with HCPs**, but it has raised uncertainty about the appropriate use of each channel with clients
- One way of achieving personalization is by transitioning from a **multichannel** to a more seamless, integrated **omnichannel** marketing model
- The shift to omnichannel is compounded by the fact **that HCP expectations are changing**. For example: **87%**[1] of HCPs say they want either all **virtual or a mix of virtual and in-person meetings** with pharma representatives

FIGURE 8 :

Drivers for Transitioning to Omnichannel Engagement

- **Improved Customer Experience**
- **Better Alignment with Customer Expectations**
- **Increased Reach and Engagement**
- **Better Data Integration**
- **Enhanced Compliance**

FIGURE 9 :

Challenges HCPs report while engaging with pharma [1]

<20%
of HCPs find messages personalized to their needs

16%
Prefer medical education, but only 9% receive this content

18%
of HCPs want access to meeting online

HCPs today are highly tech-savvy, making digital engagement with them increasingly critical rather than optional

[1] Source: The New Rules of HCP Engagement Report by Veeva

Transitioning from Multichannel to Omnichannel (2/3)

Plan of Action

- Moving to an omnichannel approach usually involves significant **reorganization of the go-to-market strategy** and **consolidation of functional platforms** to derive a measurable impact on marketing efforts that can be **monitored** across channels
- Figure 10 shows how, by using digital tools, life science companies can achieve two-way communication with patients and HCPs by transitioning from multichannel to omnichannel engagement
- Life science companies have **the potential to reap benefits** by creating a **seamless customer experience** through the use of technology. It is now up to these companies to take advantage of this opportunity by connecting with their clients in a way that suits them and at their convenience

FIGURE 10 :

Transition from Multichannel to Omnichannel Engagement[1]

YESTERDAY		TOMORROW
HCP or Consumer	Customer Type	Integrated
Multichannel	Customer Journey	Omnichannel
Limited Use	Market Access	Extensive Use
Wide Audiences	Targeting	Specific Audiences
Brand View	Investment	Enterprise View
Predictive	Analysis	Prescriptive
Single Channel	Measurement	Cross Channel

"I have often been asked: who's ahead in digital/omnichannel? After all these years, the answer continues to be: your customers are ahead, as they have always been looking for a seamless omnichannel offering from the industry. In addition, since Covid, leading companies have been accelerating their OCE offerings and flexing their go-to-market model. Hence, consistent benchmarking enriched with actionable customer insights form the key to sustained customer excellence and business success."

Ruud Kooi,
MD, Across Health,
EVP, Precision Medicine Group

Delivering the right content to the right customer, at the right time, using the right medium, will be a key factor for success

[1] Source: The New Rules of HCP Engagement by Veeva

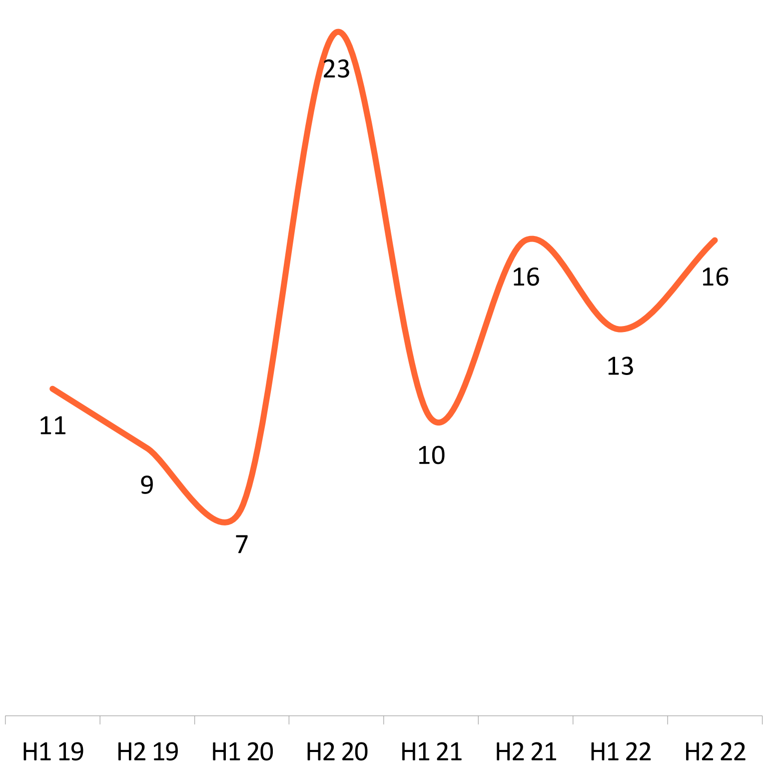
Transitioning from Multichannel to Omnichannel (3/3)

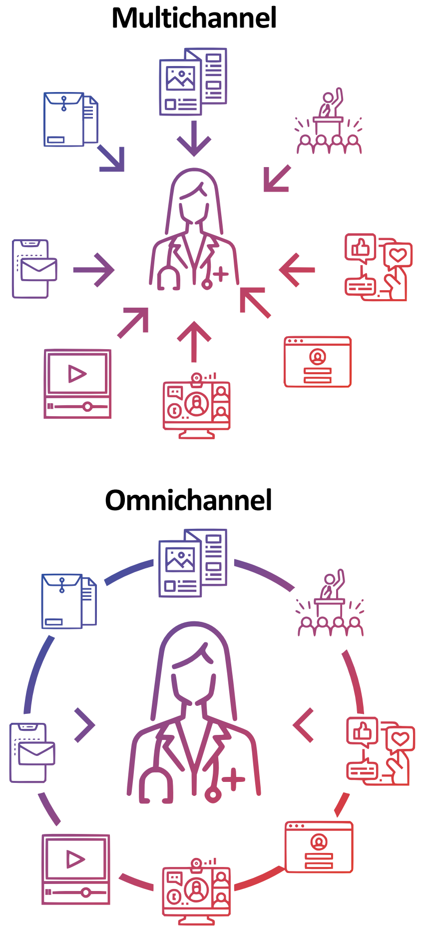
Supply Side Preparedness :

- The **pharmaceutical industry's shift** towards **omnichannel engagement** is also evident in the growing demand from digital solutions providers. These providers are making acquisitions to drive growth by incorporating **advanced technological expertise**, **extensive healthcare domain knowledge**, and a strong emphasis on **digital transformation**
- Figure 11 highlights the **spike in M&A transactions** specifically in the commercialization category in the last two years
- In 2022 alone, **29 transactions** were closed with a primary motive to **strengthen the commercialization** offerings of buyers
- Uniphar's acquisition of Inspired Health and Pharmalex's acquisition of Ascent Development Services are some of the representative transactions in the market access space

FIGURE 11 :

M&A Trend in Commercialization[1]





"COVID provided a unique opportunity for the industry to appreciate that a market can also function without the traditional HCP engagement models "

Liam Logue
President,
Uniphar USA

Cloud-based solution providers that enable pharma companies to access omnichannel capabilities from anywhere, at any time are likely to attract increased M&A activity

[1] Source: Technology Holdings, M&A Tracker 2023

Market Trend 2

Continued Investment in Robust CRM to Enhance the Customer Journey

- Life sciences marketing companies often lack the necessary tools to create personalized and targeted campaigns due to **a lack of visibility among their potential clients or influencers**
- CRM enables pharmaceutical companies to combine functions across **sales, medical, and marketing** with product development, compliance and risk management and collaboration
- CRM systems provide a centralized platform for a connected ecosystem where **companies can seamlessly share information across teams** while maintaining control and compliance
- Companies that have deployed these systems already have demonstrated **considerable improvement in terms of KPIs** as shown in Figure 12
- Recent use cases for this application include **improved patient and sponsorship mapping** during clinical trials, by enabling **real-time access** to clinical research sites for sponsors (e.g., Veeva ePRO by Veeva systems)
- CRM systems will be a crucial factor in enabling life sciences companies to generate **8%**[2] of their revenue from **digital channels by 2023**, double the **4%**[2] generated **in 2021**

FIGURE 12 :

KPIs after Deploying a Commercial Cloud to Unify Stakeholder Data, Commercial, Medical Content, and Customer Engagement [1]

57%

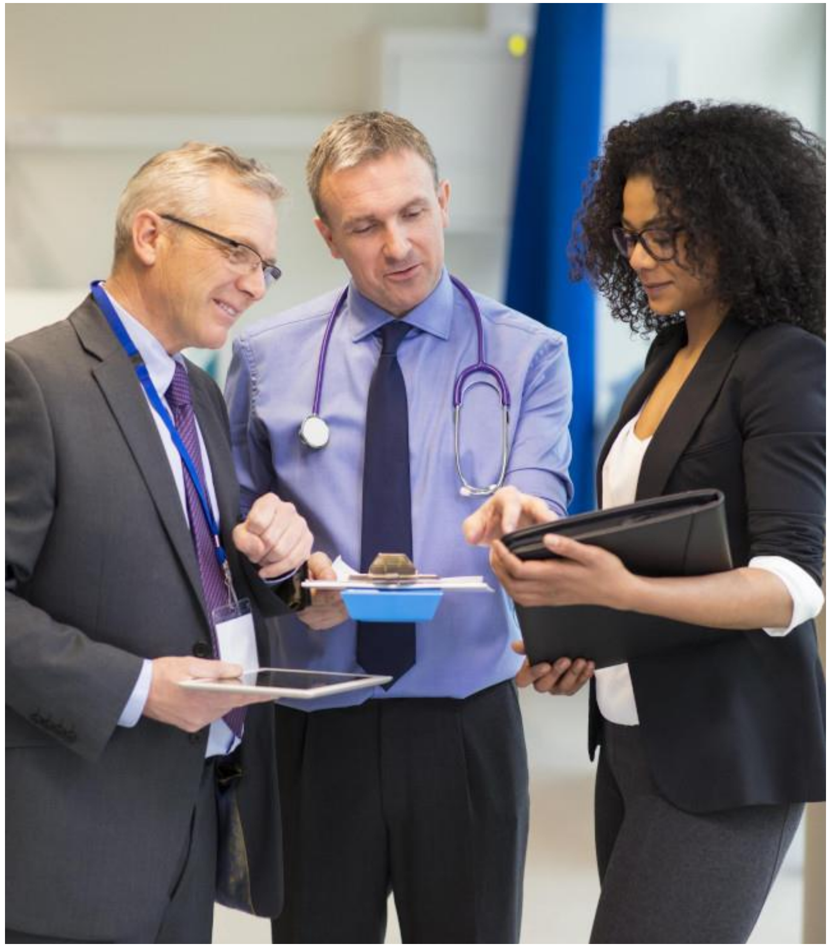
Reduction in review cycles

25%

Reduction in time on compliance

88%

Reduction in time spend with agencies



CRMs will play a pivotal role in enabling real-time collaboration and proactive engagement with stakeholders of life science companies

[1] Source: Veeva.com/CRM

[2] Cognizant Life Sciences Research 2021

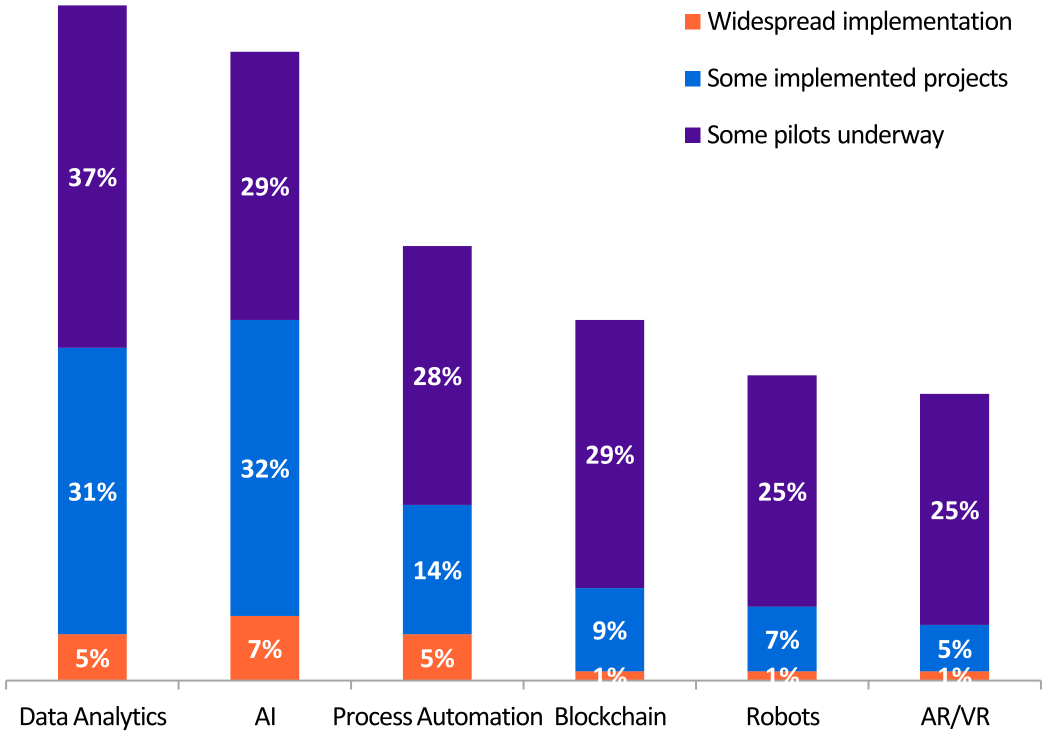
Market Trend 3

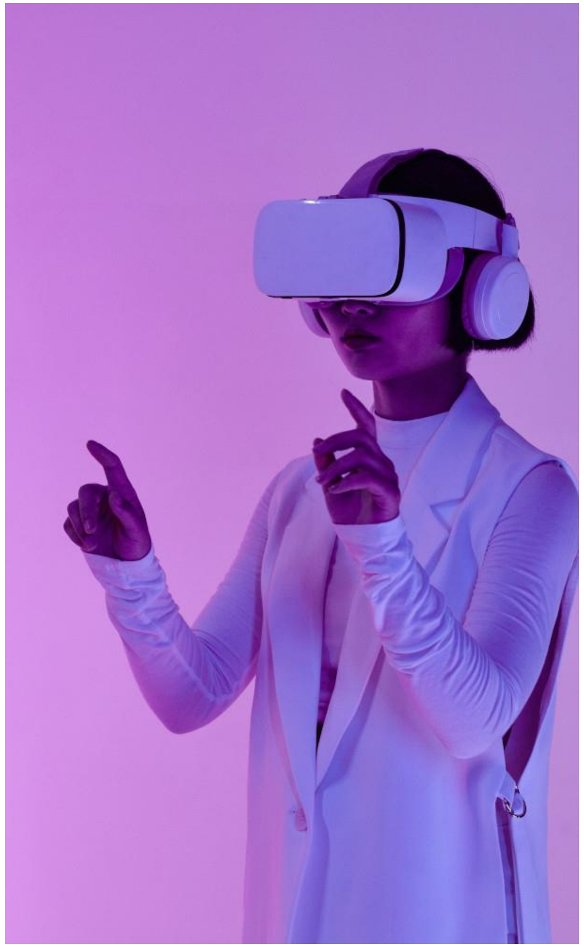
Adoption of AI and Advanced Analytics (1/2)

- As per Cognizant research, **artificial intelligence (AI), automation**, and **advanced data analytics** will be at the core of the life sciences industry's transformation, enabling intelligent decisions
- The research also represents that around **73%**[1] of respondents (life sciences executives) are at some stage of **pilot or implementation with data analytics**
- Collecting **comprehensive, detailed customer data** is becoming common practice
- Companies are adopting tech-driven methods and tools such as **natural language processing (NLP)** to uncover valuable insights from unstructured social media data
- **Process automation and data-driven predictive insights** have the ability to dramatically change how executives make strategic decisions across all commercial areas

FIGURE 13 :

Status of Investments Made by Life Science Companies to Augment Business Processes[1]





Advanced data analytics leveraging AI/ML will have a strong impact on every aspect of the life sciences value chain

[1] Source: Cognizant Center for the Future of Work

Market Trend 3

Adoption of AI and Advanced Analytics (2/2)

Broadly within the life sciences industry, use cases for advanced analytics and AI are prevalent in the areas of **new product and service enablement**, **marketing support**, **regulatory compliance reporting**, **research and development,** and **drug discovery.** The key use cases that are fundamental to life sciences organizations in unlocking commercialization are shown below -

FIGURE 14 :

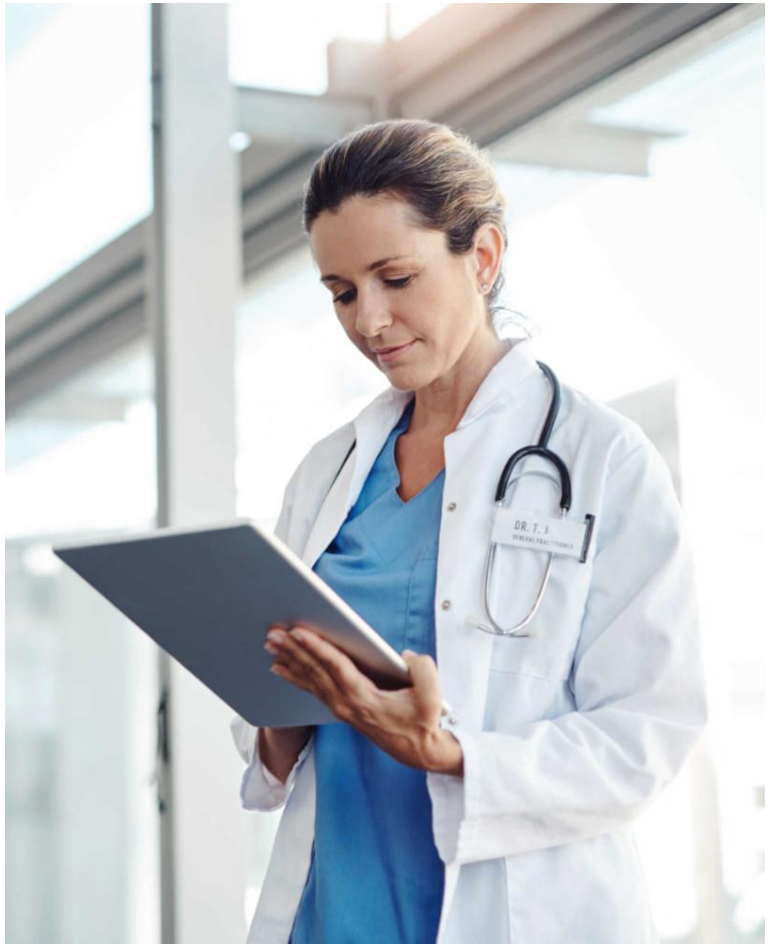
Use Cases Employing AI and Advanced Analytics in Commercialization and Market Access

- **Data-driven omnichannel campaigns**
- **Automated content generation**
- **Commercial spend optimization**
- **Analysing and optimizing real-world outcomes**
- **Tailored customer engagements**
- **Optimized field-force**

While organizations have begun to advance their analytics capabilities, the level of sophistication varies due to challenges in moving the company's culture to one that embraces advanced analytics

Market Trend 4:

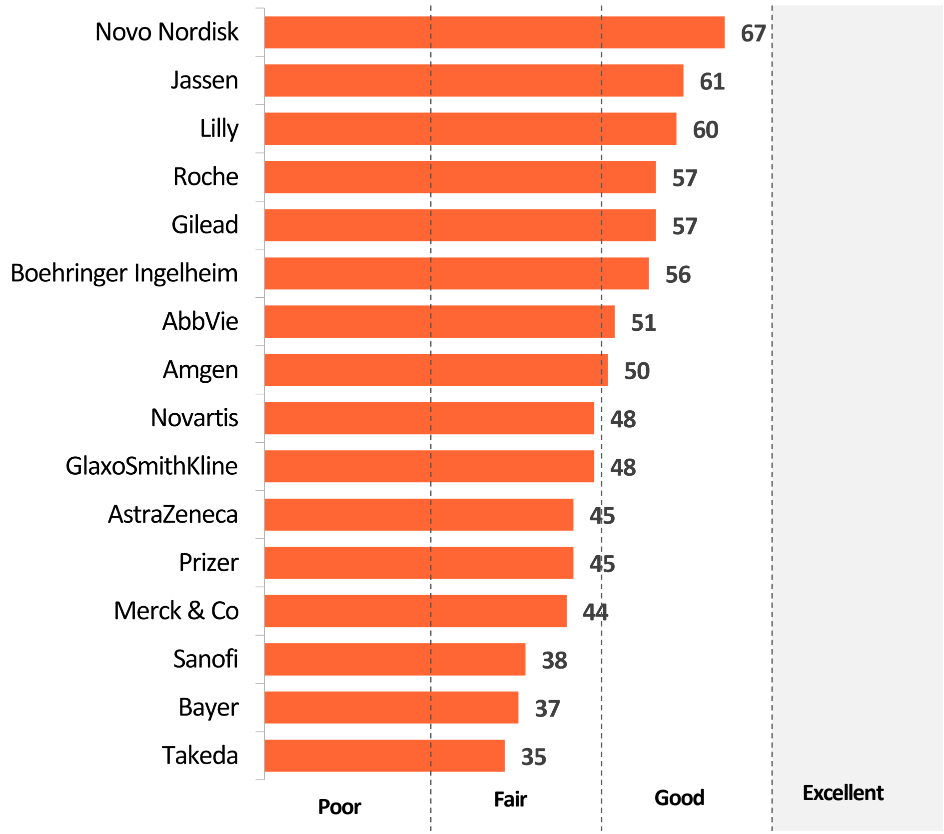
Investment in Customer Experience Management (1/2)



- **Customer centricity and continuous engagement** is the foundation of **customer experience (CX)**
- Figure 15 represents the rating of pharma companies for their **customer experience management**
- Only **six out of top 16** pharma companies managed to reach fair scoring in terms of engagement experience
- The primary reason for dissatisfaction is a disconnect between **how pharma companies provide information** to HCPs and **how HCPs want to receive** it
- Despite significant focus and investment, life science companies have struggled to **translate their CX initiatives into a consistent experience** that meets customer needs and deliver on business objectives

FIGURE 15 :

HCP Engagement Experience for Major Pharma Companies[1]



HCP's consider customer experience in pharma to be average

[1] Source: Customer Experience Quotient(CXQ), DT Consulting (an Indegene company)

Market Trend 4

Investment in Customer Experience Management (2/2)

Research consistently shows that, across all industries, companies that lead on CX outperform their competition in areas such as customer satisfaction, brand loyalty, and revenue growth.

- Rapid growth in the availability of tools and solutions that enable CX management. These include **social media management**, **marketing automation**, **CPQ**, **content management**, **chat services**, **customer profiling**, **cross-channel management**, **service recovery management**, **patient trial enrolment**, **digital advertising**, and others
- Customer experience management among pharma companies is undergoing a major transformation by leveraging technology and best practices to deliver a **positive customer experience and gain competitive advantage**
- Figure 16 represents the primary objectives of the CX management function for life sciences organizations. Meeting these objectives helps companies deliver a **differentiated customer experience**

Personalizing HCP interaction is a hugely critical objective that leads to memorable customer experience. Three things that enable personalization are –

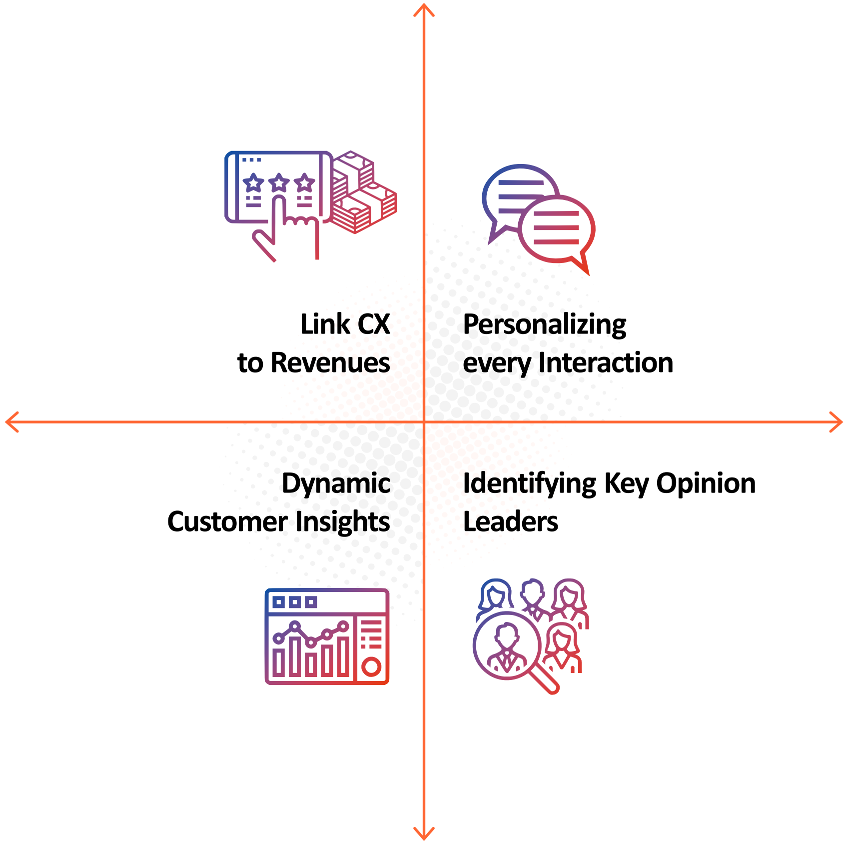
Timely insights that trigger action

Channel automation

Modular content

FIGURE 16 :

Main Objectives of Customer Experience Management (CX)



Good customer experience management provides life science companies the engagement needed to maintain reach, frequency, and share of voice

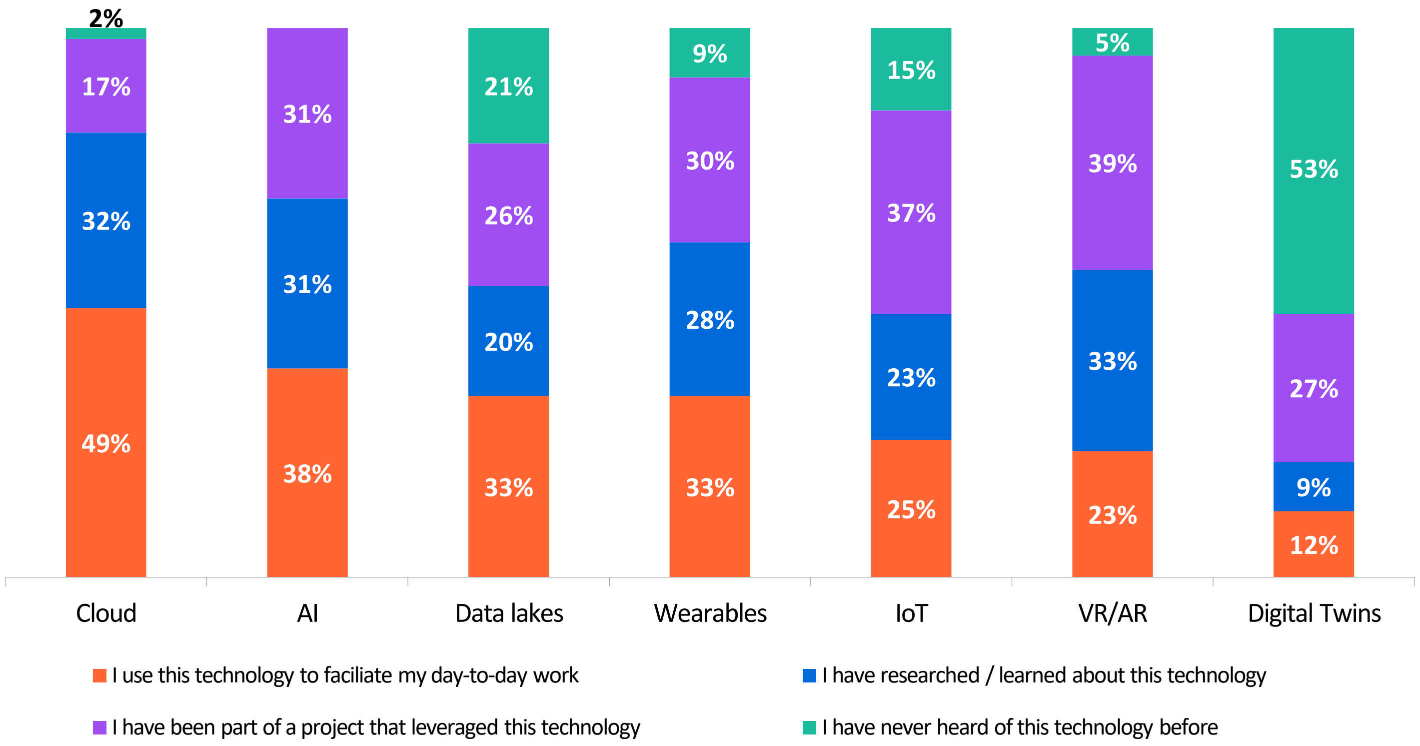
Opportunities in IT Services and Digital (1/2)

- In most life science organizations, IT-related investments focus on implementing **core enterprise resource planning** (ERP), untangling siloed infrastructure from years of M&A activity, **standardizing processes**, and **providing basic technology literacy** for their business counterparts
- That perspective is now changing for the life sciences industry, with top management shifting focus on **moving IT functions closer to the business and clients** to meet their rising expectations
- Another digitization focus for pharma companies is to remove the paper from their operations to **reduce the risk** of **lower productivity and the likelihood of manual errors across processes**
- A notable example - **Sanofi** investing in **digital collaboration tools** in its manufacturing facility in addition to **data analytics**, and augmented reality (AR) solutions so that they can make decisions and modifications in real-time
- Given the accelerated pace of digital innovation across the industry, regulatory agencies have also provided flexibility to **incorporate digital technologies in R&D** and other parts of the value chain

FIGURE 17 :

Main Objectives of Customer Experience Management (CX) [1]

Q. Which of the following best describes your experience with each digital innovation technology within your organization?



Cloud services and AI-based analytics are the two technologies life sciences companies are investing in to build a centralized system with 360-degree customer insights

[1] Source: Deloitte's Biopharma Digital Innovation Survey

Opportunities in IT Services and Digital (2/2)

- Large tech companies have been increasingly active in this space for the last two years. Since January 2020, the **top five tech firms** have invested close to **US $7 billion**[1] in healthcare
- Key investment areas include –
  - **Data collection, disease detection, and digital tools,**
  - **Collaboration with existing legacy health systems**
  - **Applications of AI for drug discovery**
  - **Improved patient experience**
- Pharma companies are partnering with tech giants to **harness mutual strengths, accelerate access to new technology, and reduce operational costs**
- Two recent partnerships include **Boehringer Ingelheim** joining hands with **Google** for **quantum computing** to break new ground in molecular dynamics simulations
- The other significant partnering deal is between **Novartis** and **Microsoft** for a multi-year **AI alliance for drug discovery**, **development**, and **commercialization**

FIGURE 18 :

Types of Models used by Pharma Companies to Approach Tech Capabilities [1]

	Build	Buy	Partner
Preference	14%	41%	45%
Pros	- Full control of the process - Fully aligned with strategy - Creates entrepreneurial spirit	- Hand-picked target - Ready-made process/product - Can acquire talent	- Try before you buy - Lower investment - Faster ROI
Cons	- Longer time for ROI - Tough to attract talent - R&D becomes more expensive	- Usually pay a premium - Integration complications - Missing target affects market perception	- Less formal - Revenue/profit sharing model - Cultures can clash

"As AI, advanced analytics and data science become integral strategic capabilities for companies, the associated complexities are encouraging them to spend more on outsourcing than what they used to in the past."

Tim Wohlgemut
SVP, Product and Strategy
Trinity Life Sciences

Pharma companies prefer partnership models to acquire tech capabilities than to build their own

[1] Source: Accenture survey of pharmaceutical and medical device executives

M&A Drivers

Innovation

The use of technology in the life sciences is still new compared to other industries. Service providers want to buy innovative companies to get access to their **intellectual property**, **technology**, and expertise, to help grow and expand their business

Complementary Capabilities

Life sciences consulting firms look out for niche players in **data analytics and AI/ML** that complement their existing offerings in **commercial** and **market access**, **medical affairs, real-world evidence, and pharmacovigilance**

Deep Domain Expertise

Life sciences consulting firms like Indegene, Fishawack, Precision Medicine Group, and CitiusTech are focusing on **strategic acquisitions** that increase their **operational capabilities** in new therapeutic areas such as **cell and gene therapy (CGT)** and **RNA technologies**

Private Equity Participation

Renewed interest from private equity firms on account of rapid growth in the commercialization, clinical and **digital transformation,** and **IT Infrastructure modernization** programs within life science organizations

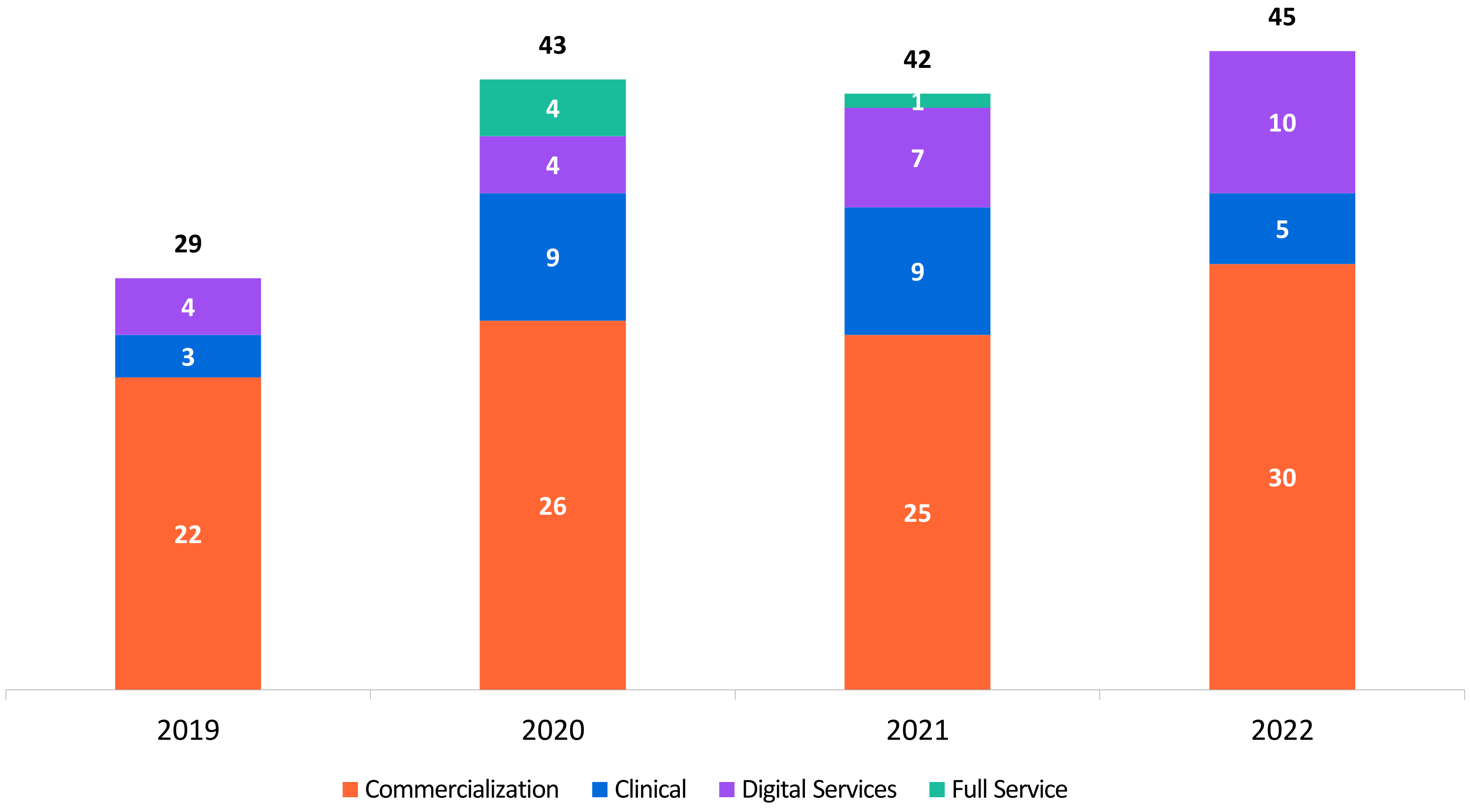
Rise in M&A transactions to acquire deep domain expertise, complementary capabilities and technology platform expertise

Life Sciences Vendors

- M&A activity among life sciences services vendors' continued to keep up with the growth that accelerated largely in response to the COVID-19 pandemic back in 2020
- Year to date in 2022, **45 transactions** were concluded. The majority of this was in these were in **commercialization** space followed by **digital services** and included transactions involving the acquisition of players like **C-CLEAR Partners,** an end-to-end CRM platform, and an omnichannel marketing automation services company by **Valantic**
- The strategic drivers for pursuing acquisitions centre around platforms and solutions that enable the **rapid transformation of life sciences companies**
- **M&A activity will continue to be strong** given that **scale** and **specialization** will be **fundamental factors** for achieving a competitive advantage in the market

FIGURE 19 :

Life Science M&A Activity (2019-2022) [1][2]



As M&A activity accelerates, valuations for pharma and life science services companies track relatively higher

[1] Source: Technology Holdings, M&A Tracker 2023

[2] Does not include M&A transactions relating to Medical Technology, Healthcare Software, Contract Research Outsourcing (CRO) and Contract Manufacturing Outsourcing (CMO)

List of Tech-Enabling Life Sciences Vendor M&A Activity in 2022

Target	Acquirer	Date	Target HQ
Add Complementary Capabilities			
Latham BioPharm Group	Sia Partners	Nov-22	US
Wilco Source	CitiusTech	Nov-22	US
Neohealthhub	PharmaLex	Oct-22	UK
The CM Group, LLC	Open Health Communications LLP	Jul-22	US
C CLEAR	Valantic	Jun-22	Belgium
D CUBE Analytics	Trinity Life Sciences	Jul-22	US
Phlexglobal	PharmaLex	Jan-22	UK
Research Partnership	Ashfield Advisory	Mar-22	UK
Analytical Wizards Inc	Definitive Healthcare	Feb-22	US
TrierHealth	Velocity Clinical Research Inc	Feb-22	India
Axon Communications	Relevate Health	Feb-22	US
Raison De Sante	Havas Health & You	Jan-22	France
Cloud Development Resources	Emids	Jan-22	US
Growth Funding/ Buyout			
Celerion	HIG Capital	Nov-22	US
PharmaLex	AmeriSource Bergen	Sep-22	Germany
Open Health Communications LLP	Astorg Partners	Jul-22	UK
Epista Life Science	FSN Capital	May-22	Denmark
Veranex	Accelmed Partners, Lauxera Capital Partners	May-22	USA
Republic M!	Queens Park Equity	Apr-22	UK
IBM Healthcare Data and Analytics	Francisco Partners	Jan-22	US

Target	Acquirer	Date	Target HQ
Add Complementary Capabilities			
Vyasa Analytics	Certera	Dec-22	US
Synetic Life Sciences	Lucid Group	Dec-22	UK
Clarion Healthcare	Lumanity	Nov-22	US
CultHealth	Indegene Lifesystems	Oct-22	US
SDS Life Sciences	Cytel	Oct-22	Sweden
Rx Savings, LLC	McKesson Corporation	Sep-22	US
PEP Group	Locaria Limited	Jul-22	Ukraine
Vigi Medsafe Private Limited	PPD, Inc.	Apr-22	India
Base Life Sciences	Infosys	Jul-22	Denmark
The Lynx Group	Amplity Health	Apr-20	US
The Famous Group	Interpublic Group (IPG)	Apr-22	US
MAP Group	PharmaLex	Jan-22	Italy
conversationHEALTH	Real Chemistry	Apr-22	Canada
Strategic North	Prescient Healthcare	Mar-22	UK
crankfrog	The Chartis Group	Mar-22	US
Carmona AB	CSAM Health Group AS	Feb-22	Sweden
Forsta	Press Ganey	Feb-22	US
SanovaWorks, Inc.	WebMD Health Corp.	Jan-22	US
BBK Worldwide LLC	Publicis Health LLC	Jan-22	US
Strengthen Geographical Presence			
Bastion Brands	Havas Health	Nov-22	US
Inspired Health Inc	Uniphar	Oct-22	US
JeffreyGroup	WPP	Sep-22	US
Artisan Healthcare	Alira Health	Sep-22	US
EBMA Consulting	PharmaLex	Mar-22	Italy
Ascent Development Services	PharmaLex	Jan-22	Japan

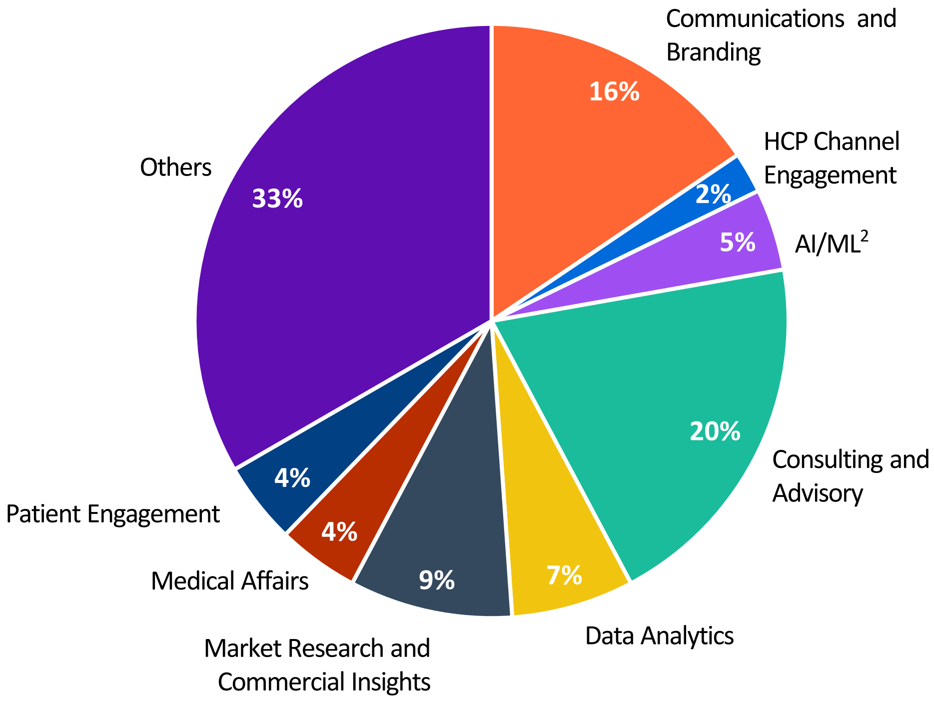
Life sciences consulting companies are focused on acquiring complementary capabilities to strengthen their portfolio of services

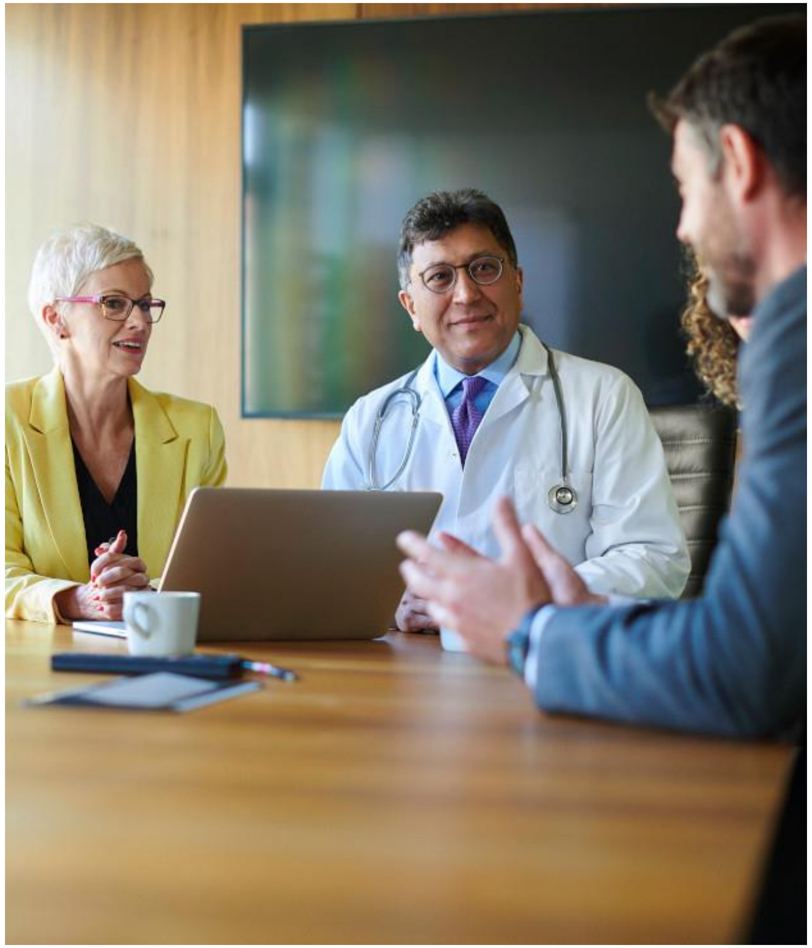
Services That Attracted Investment in 2022

- Companies offering **consulting** and **advisory** services and **branding** followed by **market research** and **commercial insights** were the most sought-after targets in the year 2022
- With the life science industry relying on data more than ever, there is an underlying demand for companies involved in **data analytics** and **AI/ML technologies**
- The "**Others**" segment constituted services such as **medical affairs**, **pharmacovigilance**, **HEOR**, **drug discovery**, **pricing**, **regulatory affairs**, and **safety and compliance management**

FIGURE 27 :

M&A activity by services (2022)[1]





Rapidly changing market dynamics make life sciences consulting and advisory a lucrative opportunity

[1] Source: Technology Holdings, M&A Tracker 2023 | [2] AI/ML : Artificial Intelligence/Machine Learning

Key Buyers

- The COVID-19 pandemic forced life science companies to examine all aspects of their operations, and in many cases to accelerate portfolio reviews often taking help from outside the organization
- This has created an exceptional demand for **life sciences consulting services** in the last few years resulting in a large number of strategic acquisitions by **large consulting firms**
- In 2022. **49% of the 45 transactions** were made by life science consulting firms like **Indegene**, **Trinity Life Sciences**, and **PharmaLex.** PharmaLex alone made five acquisitions to strengthen its **tech-enablement and automation capabilities**
- **Marketing Communications** (marcoms) and **private equity funds** were the other buyer segment that saw noticeable growth in M&A after COVID-19. Private equity firm Francisco Partners' acquisition of **IBM Watson Healthcare** in January 2022, reportedly for a little over **US $1 billion enterprise valuation** is a representative transaction during the period

FIGURE 23 :

2022 M&A Deals by Buyer Type[2]

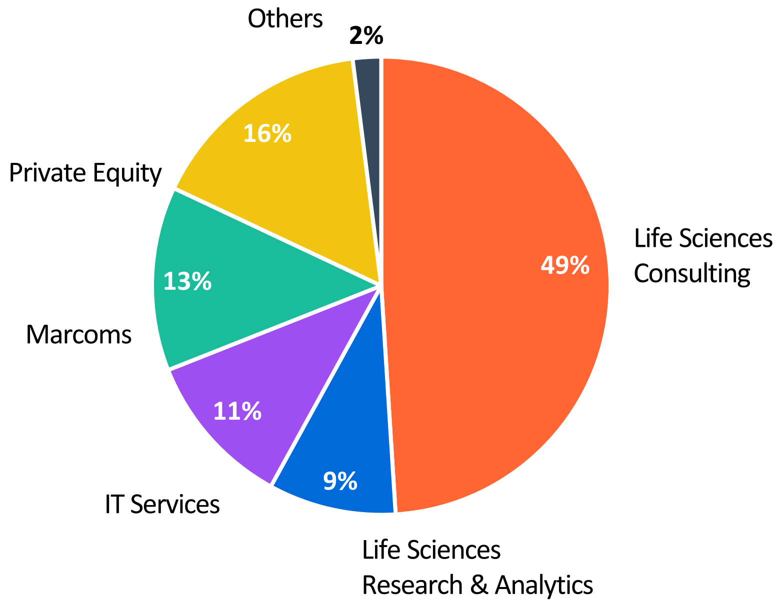


FIGURE 24 :

2019-2022 M&A Deals by Buyer Type[2]

Buyer Type	2019	2020	2021	2022
LS Consulting[1]	16	17	24	22
Private Equity	6	7	2	7
IT Services	4	9	4	5
LS Research and Analytics[1]	1	5	6	4
Marcoms	2	3	2	6
Others	0	2	3	1

The ongoing digitalization of business models of life science companies has created an enormous consulting services opportunity

[1]LS - Life sciences

[2] Source: Technology Holdings, M&A Tracker 2023

Buyer Rationale

- Life sciences consulting companies continued to consolidate by acquiring smaller, **emerging consulting** firms to drive the success and scale their offering across the life sciences value chain
- **42%** of the total transactions made by life sciences consulting firms were targeted towards **strengthening their existing portfolio of services** by adding more therapeutic specialization or integrating it with cutting-edge digital technologies
- **Indegene's acquisition of CultHealth**, a full-service healthcare marketing agency augments its commercialization portfolio by **adding brand strategy** and **market development** along with **patient engagement platforms**
- **MarComs** were the other group of buyers that acquired other market access and brand strategy firms to strengthen their core portfolio. For instance, **Interpublic Group** acquired **The Famous Group** which is known for creating mixed and augmented reality technology in live events. With this IPG will leverage this acquisition to create **immersive, interactive experiences for its life sciences clients**

FIGURE 25 :

Deals by M&A Rationale in 2022[1]

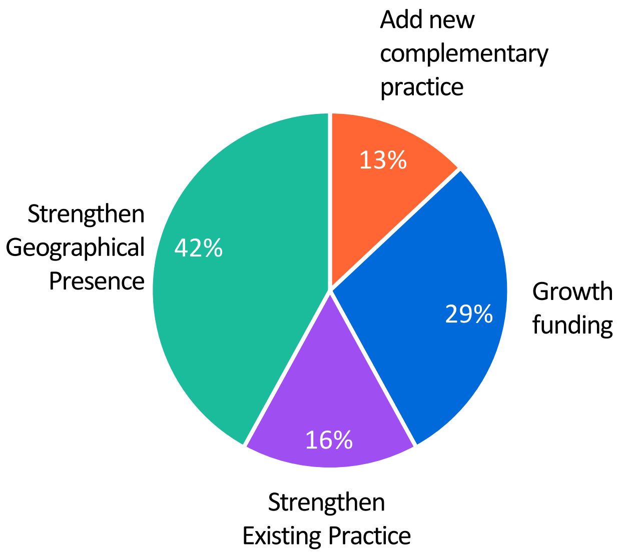


FIGURE 26 :

Mapping of Buyer Types and M&A Rationale[1]

Rationale \ Buyer Type	LS Consulting	Marcoms	Private Equity	IT Services	Others
Strengthen Existing Practice	48%	54%	0%	50%	33%
Add Complementary Practice	38%	31%	0%	41%	67%
Growth Funding	0%	0%	100%	0%	0%
Strengthen Geographical Presence	14%	15%	0%	9%	0%

51% of the total transactions done by life sciences consulting firms were targeted towards strengthening their existing portfolio of services

[1] Source: Technology Holdings, M&A Tracker 2023

M&A Analysis: Regional Trends

FIGURE 20 :

Drivers for Transitioning to Omnichannel Engagement[1]

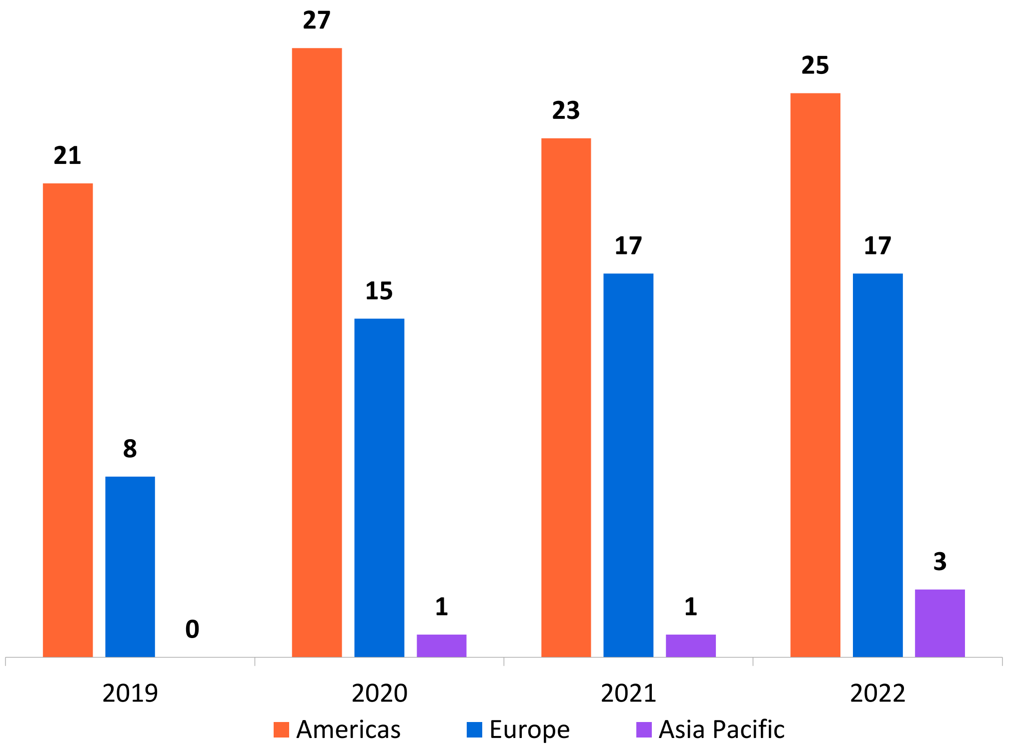


FIGURE 21 :

M&A Activity by Segments in Americas (2022)[1]

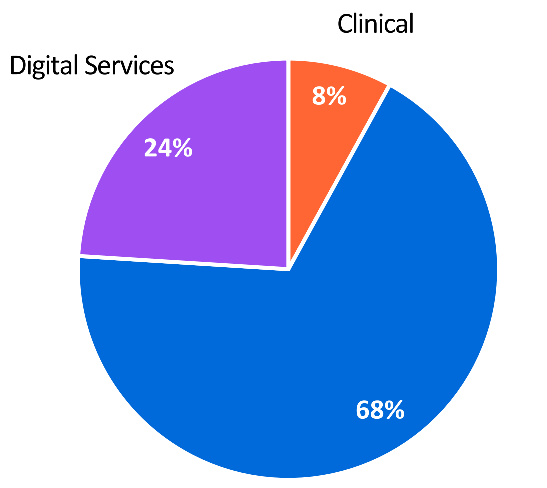
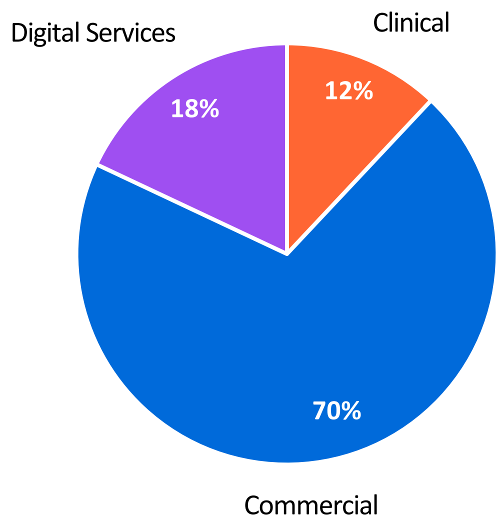


FIGURE 22 :

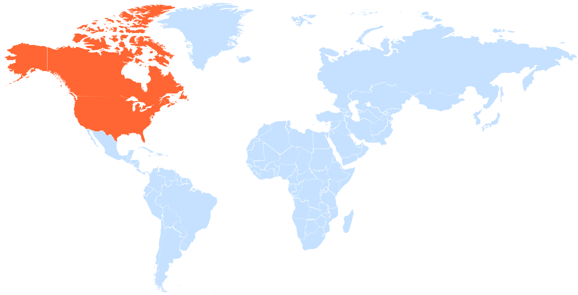
M&A Activity by Segments in Europe (2022) [1]



The growth in M&A in Europe, as well as Asia Pacific, reflects demand driven by global pharma majors looking to enhance their capabilities and capacities in those regions

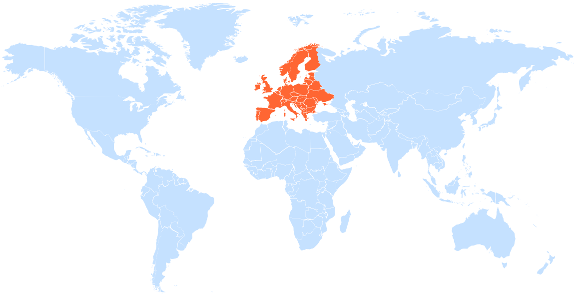
[1] Source: Technology Holdings, M&A Tracker 2023

Regional Trends



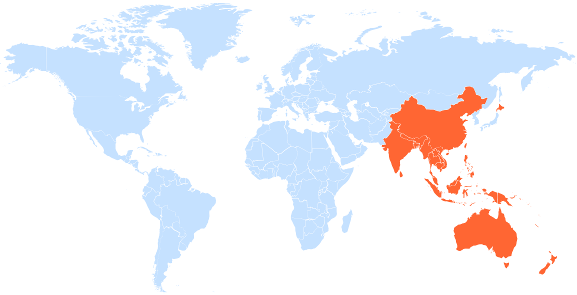
North America

- In 2022, **19 acquisitions** were concluded in North America. Out of these 18 target companies were headquartered in the United States and one in Canada
- North America witnessed the biggest spike in M&A in 2020, normalizing subsequently
- While the acquisitions were carried out by **private equity firms and large life sciences consulting firms**, **70%** of the target companies were those that were offering **commercial and market access services**



Europe

- Europe is the second-largest region in terms of life science outsourcing services M&A closing **15 acquisitions** in 2022
- Unlike North America, Europe is seeing steady growth in M&A activity since 2020 recording some big-ticket acquisitions like the acquisition of German vendor **PharmaLex**, a provider of **strategic guidance**, and **regulatory support** for biopharma companies throughout the product lifecycle
- The other prominent transaction in the region was the acquisition of Denmark-based **Base Life Sciences** by **Infosys**, a global IT services major and **FSN Capital's acquisition of Epista Life Sciences**



Asia-Pacific

- As **global pharma majors** are **decentralizing their investments in R&D** and technology from the headquarter countries to **Asia Pacific**, there is considerable demand for regional players
- Large pharma consulting firms are expanding their geographical footprint by acquiring local players that have niche capabilities like **data analytics** and **medical affairs**

Source: Technology Holdings, M&A Tracker 2023

Innovation in Digital and Domain Expertise Drives M&A

Life Science Organizations

- Pharmaceutical and biopharma organizations expect to generate **8%**[1] of **their revenue** leveraging digital channels in 2023, doubling from **4%**[1] in 2022
- Higher adoption of **specialty and precision medicine**- such as **cell and gene therapy**, and increased focus on the provision of **"beyond the pill"** services, are expected to alter market dynamics, leading to **greater outsourcing** activity
- Allocated marketing budgets are higher than ever in the life science industry due to more openness to change and willingness to spend on digital

Life Sciences (Tech enabling) Vendors

- **Digital engagement and tech-enabled marketing** are the primary focus due to the immense potential for growth
- Life sciences vendors continue to make more **tuck-in acquisitions** that help them to **scale horizontally** by extending offerings across the product value chain, as well as **grow vertically** in different therapeutic areas
- **Pharma consulting** has **moved beyond market strategy dealing with only C-Suite executives** to now more strategic discussions held at the brand manager level on account of **rising product complexity**

Digital Services Providers

- **Implementing AI solutions** has helped enable better **marketing spend analytics** and finding the right combinations of digital channels to engage patients and drive conversations
- **Rise in the adoption of modern CRMs** has enabled pharmaceutical companies to combine commercial functions across **sales, medical**, and **marketing** with product development, clinical regulations, and quality

[1] Cognizant Life Sciences Research 2021

Technology Holdings' Life Sciences Transaction Track Record

Technology Holdings (TH) is exclusively focused on investment banking in technology services and software, and is the IT services and digital transformation advisor of choice globally. Over 22 years, TH has built deep expertise in digital platforms, with global reach and extensive strategic buyer and private equity relationships to help clients navigate through a sale and/or capital raising process, and to secure premium valuations.

SUAZIO
Strategic sale to
NAMSA
ARCHIMED
PORTFOLIO COMPANY
MARCH 2023

C·CLEAR PARTNERS
Strategic sale to
valantic
JUNE 2022

WORRELL
Strategic sale to
Veranex
SUMMIT PARTNERS
PORTFOLIO COMPANY
DECEMBER 2021

ACROSS HEALTH
Strategic sale to
PRECISION MEDICINE GROUP
Blackstone
PORTFOLIO COMPANY
FEBRUARY 2021

insight
A Design Innovation Consultancy
Strategic sale to
Nemera
AUGUST 2019

blue latitude health
Strategic sale to
FISHAWACK HEALTH
DECEMBER 2018

SCIO health analytics
Acquisition of
CLEAR VISION INFORMATION SYSTEMS
JANUARY 2016

SCIO health analytics
Acquisition of
DATA INTELLIGENCE
JANUARY 2015

2022
THE M&A ADVISOR
AWARD WINNER

Cross-Border Deal of the Year
award for the acquisition of S4G Consulting by McKinsey & Company

FM. M&A Awards2022
WINNER

Mid-Market M&A Advisory Firm of the Year

Client Testimonials

“Technology Holdings’ global network, proven track record of transactions in technology solutions, digital transformation and life sciences, and extensive experience working with Salesforce and Microsoft partners made them an obvious choice as our advisor. From the very beginning, we were impressed with their thorough approach, their deep understanding of our business and their relentless commitment to helping us identify the right strategic acquirer. Technology Holdings were - without a doubt - critical to the success of the transaction, delivering multiple offers from a range of acquirers. In the end this meant we were able to find a partner with the ideal cultural fit, without compromising on valuation. We would highly recommend them to other business owners who are looking to take the next step in their company’s journey.”

Geert Adams,
Co-Founder and CEO
C-Clear Partners

Kasim El Bastani,
Founder and Managing Partner
C-Clear Partners

Gert Pauwels,
Founding Partner
C-Clear Partners

"From our first meeting, Technology Holdings recognized our unique proposition as a specialist strategic consultancy, providing evidence-based omnichannel customer engagement and digital transformation services and products to life sciences companies. TH ran a structured and highly professional sale process, securing a total of 12 offers from buyers globally, leveraging their extensive buyer relationships and deep expertise in the digital transformation and life sciences sectors. As we navigated through Covid-19, TH ensured that we capitalized on our unique proposition, selected the right strategic partner and secured a premium valuation for Across Health. We’d like to thank the TH team for their effort, resilience and for managing the heavy lifting at every step of the process, from preparing compelling material through to due diligence process management and negotiation. The level of advice provided from start to finish was of the highest calibre and was instrumental in ensuring that we found the ideal partner in Precision Medicine Group to continue our growth journey. We would certainly recommend Technology Holdings to any company considering a sale - their deep sector expertise and knowledge of the buyer landscape is truly unparalleled."

Fonny Schenck,
Founder and CEO
Across Health

Client Testimonials

"We are pleased to have chosen Technology Holdings as the advisory firm to work with us to find the right strategic fit. As a design and innovation services firm that focuses exclusively on healthcare, together with Veranex we can now offer a broader array of services to meet a growing demand from our clients. This year is shaping up to be a record year for our firm and Veranex is well positioned to help us sustain and accelerate our growth trajectory. We couldn't be more pleased with the Technology Holdings team, their understanding of the market and their process that delivered such a great outcome for us."

Kai Worrell,
Chief Executive Officer
Worrell Design

A Design Innovation Consultancy

“The Technology Holdings team was instrumental in helping us find a partner in Nemera that shares a common vision to provide exceptional capabilities to their clients, from innovation through industrialization. We appreciate Technology Holdings’ depth of experience in the healthcare sector and their understanding of our specialized design & development capabilities.”

Craig Scherer
Co-Founder - Insight
Product Development

A Design Innovation Consultancy

“As a services company, it was important for the management team that we could trust our adviser to understand and clearly represent our motivations for a transaction. From our initial meeting to the day of closing, the Technology Holdings team served as that trusted adviser in our search for the perfect strategic fit.”

Doug Brewer
Co-Founder - Insight
Product Development

From the get-go, TH got to know our business as if it were their own. They made it their business to understand not just the numbers but the story behind them. They expertly developed and helped us shortlist a field of potential buyers and negotiated the best possible deal. In doing this they left no stone unturned and have helped secure an exciting future for the business. TH gave us the confidence to control the process and our own destiny. Bravo.

Fred Bassett
Chairman & Founder
Blue Latitude Health

Martin Brass
Founder & MD
Blue Latitude Health

"Technology Holdings has been our trusted M&A adviser for many years, having worked closely with the SCIO Health Analytics team on a number of our acquisitions. Their deep understanding of the healthcare market, coupled with their global reach across the US and Europe, has added significant value in support of our strategic growth objectives."

Siva Namasivayam
CEO, SCIO Health Analytics

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