

ENDLESS POSSIBILITIES WITH DATA FOR HEALTHCARE AND LIFE SCIENCES

Navigate from now to your next



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TABLE OF CONTENTS

Introduction	04
In a world of endless possibilities with data.....	05
Meeting and beating data challenges	06
What analytics and why	08
Analytics usage by function.....	09
The impact of other technologies.....	10
Conclusion	12



INTRODUCTION TO THE STUDY

Data is genuinely a life changer in the Healthcare and Life Sciences industry. Traditionally this industry generates huge data based on patient profiling, compliance and regulatory requirements, and scientific research.

Therefore, leveraging this data in significant ways including in the prediction of outcome of diseases and epidemics, improving treatment and quality of life, preventing premature deaths and disease development has become the need of the hour. It is vitally important for Life Sciences and Healthcare organizations to acquire the available tools, infrastructures, and techniques to leverage this vast amount of data effectively, or risk losing potentially millions of dollars.

Data has indeed started creating endless possibilities for these organizations.

Leveraging data is a crucial digital strategy for Healthcare and Life Sciences enterprises, and Infosys understands this well and has partnered with hundreds of organizations to transform into “Data Led” organizations.

To understand the expectations of the Healthcare and Life Sciences industry with data, we spoke to 178 decision makers and key influencers in Data strategies across US, Europe and Australia and New Zealand from organizations with annual revenues exceeding US\$ 1 Billion. The respondents were from business and technology roles, who were decision makers, influencers and external consultants.



IN A WORLD OF ENDLESS POSSIBILITIES WITH DATA

data insights driven innovation, decision making and competitive strategies and finally resulting in Revenue and Profit Maximization.

A leading American Healthcare company states, "We use data analytics for typical digital transformation purposes in healthcare like enhanced patient care, efficiency improvement, saving time, minimizing (the risk of) errors and improving staff productivity"

This overwhelming focus towards "Experience Enhancement" as a key objective of data analytics initiative resonates across the industry. 33% overall Healthcare and Life Sciences respondents want to enhance customer experience. In Europe it is a little more than half. Life Sciences industry wants to mitigate risks with data analytics at 27%. Respondents in Australia and New Zealand voted for risk mitigation the most at 47%.

The data analytics benefits arise from 4 key pillars of business. They are Experience Enhancement where customer and stakeholder experience are enhanced due to analytical insights and listening; Risk Mitigation by using data for preventive analytics and fraud detection; Business model strategies that is supported by

User Groups	Overall Healthcare and Life Sciences	Individual Industry		Geographies		
		Healthcare	Life Sciences	USA	Europe	ANZ
Base	178	72	106	103	45	30
Business Model Transformation	22%	24%	22%	27%	9%	27%
Experience Enhancement	33%	40%	27%	29%	51%	17%
Revenue and Profit Maximization	19%	12%	24%	21%	20%	9%
Risk Mitigation	26%	24%	27%	23%	20%	47%

Table 1: Scenarios where data analytics would be extremely relevant if possibilities with data were endless



MEETING AND BEATING DATA CHALLENGES

Challenges were experienced across the spectrum related to availability of tools, right skilled resources, available capabilities and expertise through the industry. Most Healthcare and Life Sciences respondents struggled mostly with integration of multiple data sets and analytics

tools coupled with the maturity of the existing systems while rolling out experience enhancement-based initiatives.

Life Sciences enterprises wanted more support in understanding the right analysis techniques involved and with the maturity of their current systems.

A Fortune 500 Healthcare Services organization touched on how tough this was. "Due to our numerous acquisitions, we were unable to get the visibility and were virtually blind to problems plaguing our servers and software systems"

	Overall Healthcare and Life Sciences	Individual Industry		Geographies		
		Healthcare	Life Sciences	USA	Europe	ANZ
Base	178	72	106	103	45	30
Integrating multiple analytics tools to draw synergies	46%	58%	37%	38%	60%	50%
Deciding on choice of tools/technologies to pick from	43%	47%	41%	43%	58%	23%
Maturity of existing systems/architectures and technology environments	49%	58%	43%	48%	69%	27%
Required resource skills in the analytics realms	39%	44%	36%	31%	56%	43%
Absence of a dedicated analytics team to drive the initiatives to closure	13%	11%	14%	16%	7%	13%
Pace of execution/implementation of the initiative	47%	60%	38%	43%	60%	40%
Lack of high levels of clarity in the execution roadmap	40%	56%	29%	33%	60%	33%
Understanding the right analysis techniques to be deployed	44%	49%	42%	41%	56%	40%
Integration of multiple datasets for various sources	50%	68%	38%	50%	69%	23%
Ensuring data hygiene (correctness of data, relevance)	48%	60%	41%	44%	60%	47%

Table 2: Key challenges in implementing data analytics-led initiatives

As called out by a Multinational European Pharma while sharing their experience, "Yes, we recently created a super template known as patient narrative, capable of housing the huge array of data points in a standard document" as a way of overcoming this challenge.

>54% respondents across Healthcare and Life sciences believed that a clear execution strategy and a roadmap would help alleviate the challenges faced while implementing data analytics initiatives.

Greater than 60% of the Healthcare industry specifically voted for having a execution roadmap, choosing the right analytics tools, deploying the right people and right techniques. The Life Sciences industry was more inclined towards clear execution roadmap, right analytics tools and investing in latest Infra/Cloud technologies.

	Overall Healthcare and Life Sciences	Individual Industry		Geographies		
		Healthcare	Life Sciences	USA	Europe	ANZ
Base	178	72	106	103	45	30
Ensuring a clear roadmap/ execution strategy is set before	54%	63%	49%	55%	53%	53%
Choosing the right analytics tools/ technologies	53%	64%	45%	52%	64%	37%
Deploying the right people with the right skills	51%	68%	40%	47%	71%	37%
Identifying the right analysis techniques	49%	64%	39%	52%	56%	27%
Investing in latest IT Infra/ Cloud technologies	46%	49%	43%	47%	51%	33%
Enabling/Evangelizing digital culture across the organization	45%	56%	38%	38%	62%	43%
Centralizing organisation wide data for better fungibility	40%	51%	33%	37%	60%	23%
Partnering with external service providers, data experts	17%	15%	19%	17%	16%	23%

Table 3: Important aspects to drive in order to overcome execution challenges in analytics initiatives

WHAT ANALYTICS AND WHY



For the Healthcare and Life Sciences industry, Descriptive/Diagnostic and Predictive analytics are leveraged the most at 72% and 73% respectively to drive experience enchantment, risk mitigation, business model creation and profit maximization.

An American company distributing pharmaceuticals and providing health information technology, medical supplies, and care management tools said, "The customer will be able to assess the kind of treatment he would go for based on his personal revenues".

The European arm of a leading Pharma had this to say, "We would leverage predictive analytics and the Internet of Things (IoT) to accelerate drug development, to help improve health outcomes"

	Overall Healthcare and Life Sciences	Individual Industry		Geographies		
		Healthcare	Life Sciences	USA	Europe	ANZ
Base	178	72	106	103	45	30
Predictive analytics	73%	85%	65%	73%	82%	60%
Descriptive/Diagnostic analytics	72%	82%	66%	67%	87%	70%
Prescriptive analytics	31%	36%	28%	37%	22%	27%

Table 4: Analytics initiatives deployed or currently running in organizations



ANALYTICS USAGE BY FUNCTION

Given the complexity of the operations, and government compliances, Finance and Accounting department drive

most of the “Data” initiatives. This also stands true for US and Europe. For Australia and New Zealand however, the Operations

and Research and Developments functions leverage analytics the most out of all other functions.








	Overall Healthcare and Life Sciences	Individual Industry		Geographies		
		Healthcare	Life Sciences	USA	Europe	ANZ
Base	178	72	106	103	45	30
Finance and Accounting	 33%	36%	31%	39%	31%	17%
Marketing	 19%	26%	13%	14%	29%	20%
Operations (Production, Supply chain, Support)	 18%	15%	20%	19%	11%	23%
Research and Development	 13%	10%	15%	10%	13%	23%
Sales and Presales	 11%	6%	15%	13%	9%	10%
Human Resources	 4%	6%	3%	4%	7%	–
Sourcing and Procurement	 2%	1%	3%	1%	–	7%

Table 5: Analytics savvy functions in an organization

THE IMPACT OF OTHER TECHNOLOGIES

Automation and AI have become an integral part of the data analytics initiatives. 61% overall from both Healthcare and Life sciences believe automation will help scale analytics initiatives that would enhance customer experience. 67% Healthcare also look to deriving standardization while implementing.

"I see automation providing a higher throughput. E.g. A nurse supported by automation tool can handle a larger population of patients at one time. Instead of scaling up and down your headcount as patient volumes grow and shrink" a publicly traded American company that provides physician practices, hospitals, and other healthcare providers with practice management and electronic health record technology.



60% of the Healthcare and Life Sciences respondents are looking for AI to create new business models that would help create new revenue streams and also improve customer experience.

	Overall Healthcare and Life Sciences	Individual Industry		Geographies		
		Healthcare	Life Sciences	USA	Europe	ANZ
Base	178	72	106	103	45	30
Automation						
Ability to scale current analytics initiatives and deploy	61%	58%	62%	60%	69%	50%
Standardization of data and analysis techniques	57%	67%	51%	56%	76%	33%
Drawing higher efficiencies	42%	50%	37%	43%	47%	33%
Artificial Intelligence						
Driving prescriptive and predictive modeling	49%	57%	44%	50%	53%	40%
Possibility for creating new business cases/ models	60%	65%	56%	53%	76%	57%
Effective risk detection and mitigation	29%	31%	27%	30%	31%	20%

Table 6: Role of AI and Automation in the analytics world

The other benefits that 62% of the industry sample is looking forward to is effective data management and 57% of the sample looking at scaling of data analytical framework with a convergence between IOT, Cloud and Big Data.







	Overall Healthcare and Life Sciences	Individual Industry		Geographies		
		Healthcare	Life Sciences	USA	Europe	ANZ
Base	178	72	106	103	45	30
Effective data management	 62%	75%	53%	56%	87%	43%
Scalability and repeatability of analytics frameworks	 57%	61%	55%	59%	64%	40%
New business models/cases	 54%	60%	51%	49%	64%	60%
Cross organizational synergies	 53%	64%	46%	50%	71%	40%
Predictive and prescriptive analytics	 49%	54%	46%	44%	67%	43%
Real-time impact on decision making	 31%	32%	31%	31%	36%	27%

Table 7: Convergence of Cloud, Big data and IoT.



CONCLUSION

The Healthcare and Life Sciences industry leverages data analytics primarily to meet the objective of experience enhancement. While mitigating risks and innovating new business models too are outcomes that the industry drives with data analytics, there lies an immense potential to leverage analytics further to maximize profits. Apart from providing financial benefits to the organization.

In conclusion, data analytics emerges as a key digital tool that the Healthcare and Life Sciences need to leverage in Healthcare payers, evidence based medicines, enabling clinical analysis, supporting R&D, improvement in public health with a key focus of improving patient care, lowering costs of healthcare and saving lives.

About Infosys Knowledge Institute

As enterprises navigate the path to being digital, Infosys Knowledge Institute offers thought leadership to guide their transformation. With decades' worth of business and technology experience we help enterprises strategize how they reinvent themselves from the core: their people, processes, and proposition.

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For more information, contact datadomore@infosys.com



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