HOW NEW TECHNOLOGIES ARE TRANSFORMING THE HEALTH INDUSTRY IN LATIN AMERICA AND THE CARIBBEAN

Digital economy

Social infrastructure

NTT DATA

IDB | Invest

BACKGROUND

The Latin America and Caribbean (LAC) region is undergoing a digital revolution, and we are convinced that technological innovations have the potential to significantly accelerate and scale the region's development. These technologies are reshaping both traditional sectors and innovative industries. In this context, the main objective of this report is to address the disruptive technologies that are revolutionizing each of the industries in which IDB Invest operates in a structured manner. New emerging business models will be evaluated in the context of economic and social development, the foundation of the IDB Group. The selected models will prioritize inclusion, productivity, and innovation while addressing cross-cutting issues such as environmental sustainability, climate change, and gender equality.

Although new technologies have enormous potential to drive efficiency and open up new avenues of value creation, they also pose significant challenges in terms of governance, security, and equality. The rapid adoption of digital solutions has highlighted the importance of establishing a strong regulatory and investment framework that maximizes benefits while mitigating risks. As a result, the role of different economic agents and their ability to adapt and adopt these innovations becomes a critical aspect of catalyzing sustainable economic and social development.

As we examine the impact and potential of various key technologies in this report, it is important to understand that we are dealing with an interconnected ecosystem that is growing in complexity and scale. Advances in one area, such as Artificial Intelligence or Automation, are fed back and amplified in constructive collaboration with others, such as Big Data or the Internet of Things, resulting in a multiplier effect on value generation. This report aims to highlight how this technological interconnection is reshaping the economic and social context in LAC, providing an analysis that goes beyond the current situation to forecast how new technologies will continue to shape the region over the next decade.

CONTEXT

The healthcare industry and systems are critical to the region's development. The evolution and development of this industry have an exponential impact on countries' economies as it forms the basis of the productive chain of any society. The pandemic is clear proof of the dependence and importance of this sector, wherein the face of the health crisis experienced in 2020, significant losses, and collapse have stricken productive and economic models.
The industry's reaction to the pandemic was a turning point to a radical change, as it was forced to engender an accelerated evolution, transforming its operation and resorting to digital health through new technologies and tools that allowed its continuity despite the distancing requirements.

The efforts made by the IDB Group in this sector should be noted with a triple focus: the IDB's experience domestically and sectorally supporting the work of both the Ministries of Health and Technology aligns with the experience of IDB Invest in supporting the public-private partnerships required for this process; and that of IDB LAB in furthering the creativity and innovation of entrepreneurs to solve some of the most complex problems. All this sectoral knowledge is set down in the document "The Great Opportunity of Digital Health in Latin America and the Caribbean" ("La gran oportunidad de la salud digital en América Latina y el Caribe").

Digital Health (eHealth)[1]

For several years, the industry (from instrumentation providers and insurers to medical centers and patients) has been undergoing a digital revolution in the different processes involved in healthcare to improve three factors that have historically been a soft spot: access, quality, and efficiency (from the viewpoint of expense management) in healthcare. This trend is known as eHealth, digital health, or connected health. According to data from Statista, Brazil stands out and leads the digital health market, exceeding 1.9 billion dollars in revenue in 2022.

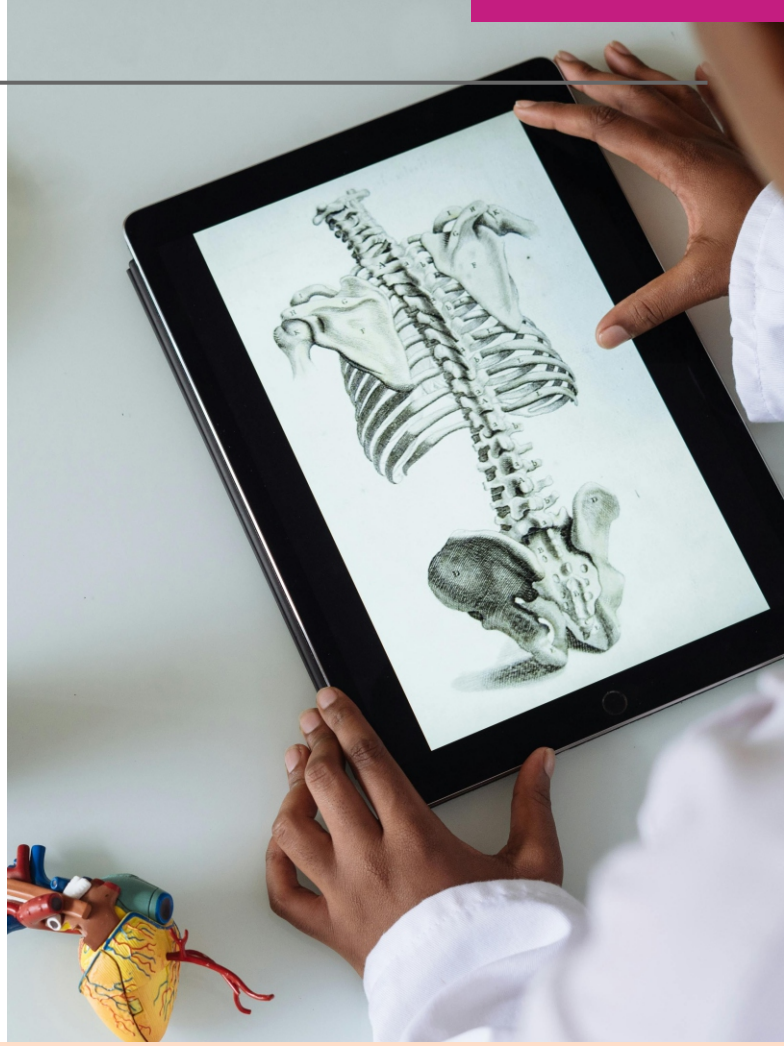
The generation of ecosystems is a crucial cornerstone in Digital Health since it facilitates (1) the maximization of capacities of the different agents participating in it, (2) positive synergies in the generation of value in the industry, and (3) investments in technologies with a greater return due to the use of the ecosystem scale.

Currently, the application of technologies in the healthcare industry allows the generation of a value delta that complements the work of healthcare professionals, enabling more efficient management, establishing more accurate diagnoses, or promoting remote care, among others. This digitalization of the industry impacts not only the quality of services but also their coverage and production volume, allowing, for instance, digital diagnostics to be carried out in areas with difficult access or increasing the number of patients treated by the automation of imaging diagnostics.

[1]The World Health Organization (WHO) defines eHealth as the cost-effective and safe use of information and communication technologies in support of health and health-related fields. This includes healthcare services, health monitoring, health education, knowledge and research.

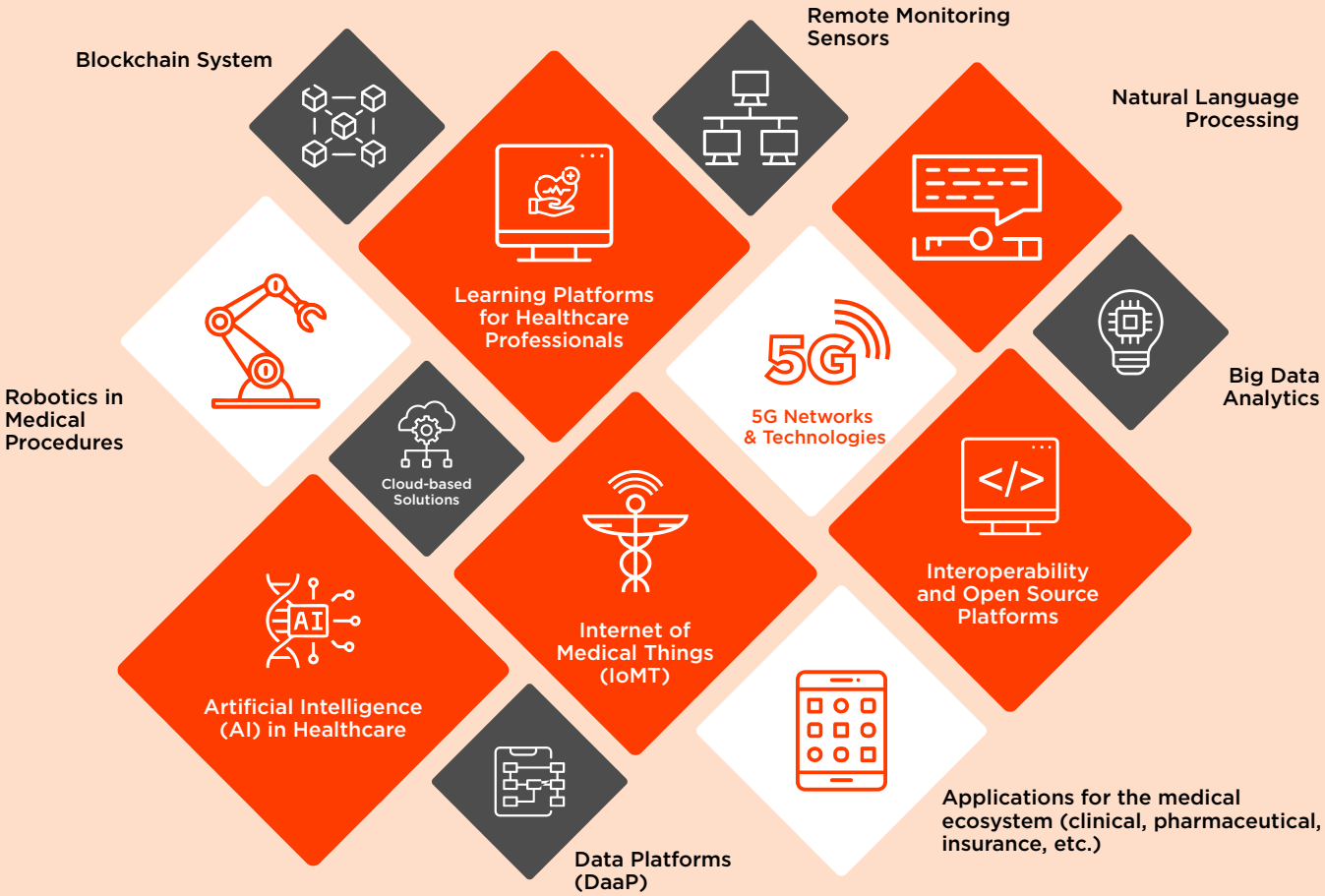
However, the generation of digital ecosystems within the healthcare industry has much potential ahead since the exploitation of the different technologies that make them up still needs to be improved. AI, augmented reality, or the incorporation of wearables[2], are some of the technologies that will facilitate a hyperconnectivity scenario in the future where it is possible to maximize the prevention and promotion of healthy habits by reducing the impact of chronic diseases on patients' health.

The following illustration shows how the adoption of new technologies is helping digitalize healthcare services, engendering a digital ecosystem:



[2]Wearables are used to monitor and receive notifications about heart rate and blood pressure, monitor calorie intake, and monitor training regimens. It allows many applications in sports, as these devices can monitor steps taken, heart rate, calories burned, and other fitness metrics.

Digital Health Ecosystem



INDUSTRY'S IMPORTANCE IN THE REGION AND IDB INVEST'S OUTLOOK

Industry's Importance in the Region

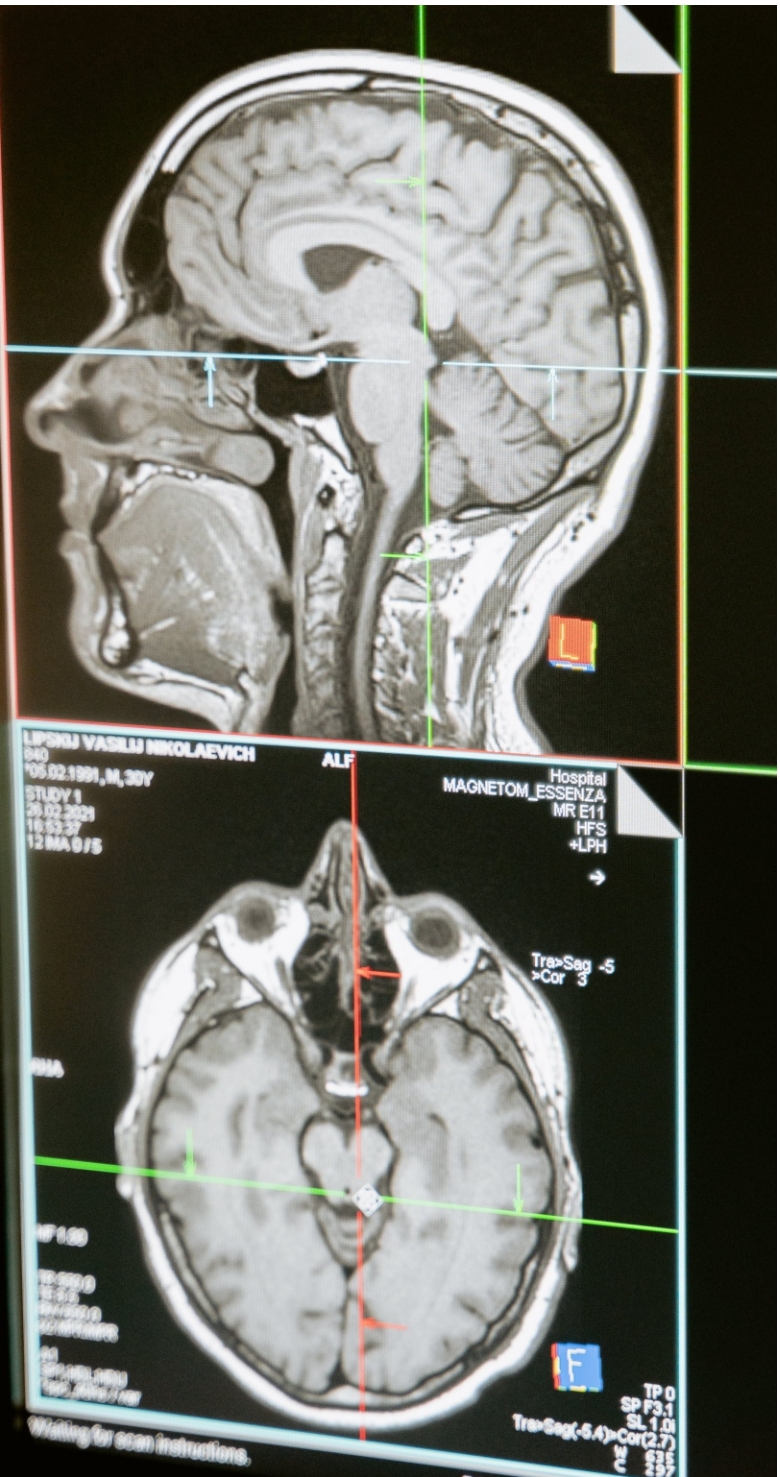
Health is essential for the progress of societies and people, as it guarantees well-being and human development. It is one of the most relevant economic sectors globally and regionally, as health is necessary to ensure growth and productivity.

In LAC, healthcare systems have been mainly characterized by expenditure management´s lack of efficiency, as well as underfunding, segmentation, and fragmentation. While the pressure on the industry during the pandemic has brought into play processes of reform and strengthening, these advances still need to be robust.

The scarcity of financing is reflected for instance, in how public spending in the region barely reaches 3.8% of GDP on average, a very low threshold compared to other OECD countries, such as France or Germany, that allocate more than 10% of their budget allocation (10.3 and 10.9% respectively in 2020). It also impacts life expectancy (approximately 73 years) virtually at the same levels as twenty years ago.

These facts underline the excellent opportunity to improve investment levels with PPP (Public-Private Partnerships) financing alternatives and further investments focused on the private sector to improve infrastructure, implement technologies that help improve efficiency, and increase the human resources available for healthcare, thus alleviating the burden on the fiscal accounts of government institutions.

Retaining sufficiently strong, resilient, and sustainable healthcare services helps mitigate risks and reduce the impact of events as huge as the pandemic suffered in 2020. 'Regarding the general region's development, these events impacted other areas such as the economy, education, and security.



Latin America and the Caribbean were the most affected regions socioeconomically speaking, posting a 6.5% decline in GDP.

For this reason, in the coming years, the region must invest in strengthening the industry to maintain the advances in welfare, economy, education, employment, and health achieved in recent decades.

In the past few years, the industry has been immersed in an accelerated technological transformation that boosts accessibility to healthcare services and improves the quality of health services provided in LAC. In this context, new players called Healthtechs have emerged, providing digital solutions within the healthcare industry, such as telemedicine or digital insurance offers. In 2021, this type of company increased its investment volume to 552 million dollars (+309% YoY), which reduced to the threshold of 127.5 million in 2022.

IDB Invest is supporting the progress of technology in the healthcare industry. One example is the capital investment of 8 million dollars to Farmalisto, the first 100% digital drugstore without any offline stores, conducting business in Colombia, Chile, Mexico, and Peru. The investment supports Farmalisto's expansion strategy in Latin America and the Caribbean.

This investment will allow Farmalisto, through the website and mobile application, to increase the offer of drugstore, telemedicine, and home healthcare services, improving the access of these services to populations living in areas with limited access to physical drugstores, as well as to those who are excluded due to their advanced age or chronic conditions.

IDB Invest's Outlook

Public healthcare systems in Latin America and the Caribbean have infrastructure and technology with essential areas for improvement. The private sector can help close the investment gap in the region to streamline hospitals and equipment, improving the quality of services.

IDB Invest teams up with private companies to expand the financing of solutions and innovations in managing healthcare services, promoting the inclusiveness of these services. Among its main investment goals are:

- To increase the industry's efficiency, investing or lending to companies that use technology to reduce costs.
- To improve the quality of services through digitalization, among others.
- To reduce inequality.

INDUSTRY CHALLENGES AND OPPORTUNITIES

The healthcare sector has undergone significant changes in recent years. For companies to remain competitive, they should adapt to new market conditions. To do this, they must ask what the main challenges the industry is currently facing are. The main ones include:

Improvements in the efficiency of the healthcare system:

There are several areas of opportunity in terms of quality and efficiency in healthcare services in LAC. On the one hand, progress can be made through increased investment and budget allocation to develop infrastructures, purchase medical equipment, and increase personnel. Meanwhile, adopting new technologies drives process agility and improves the quality and access to healthcare services.

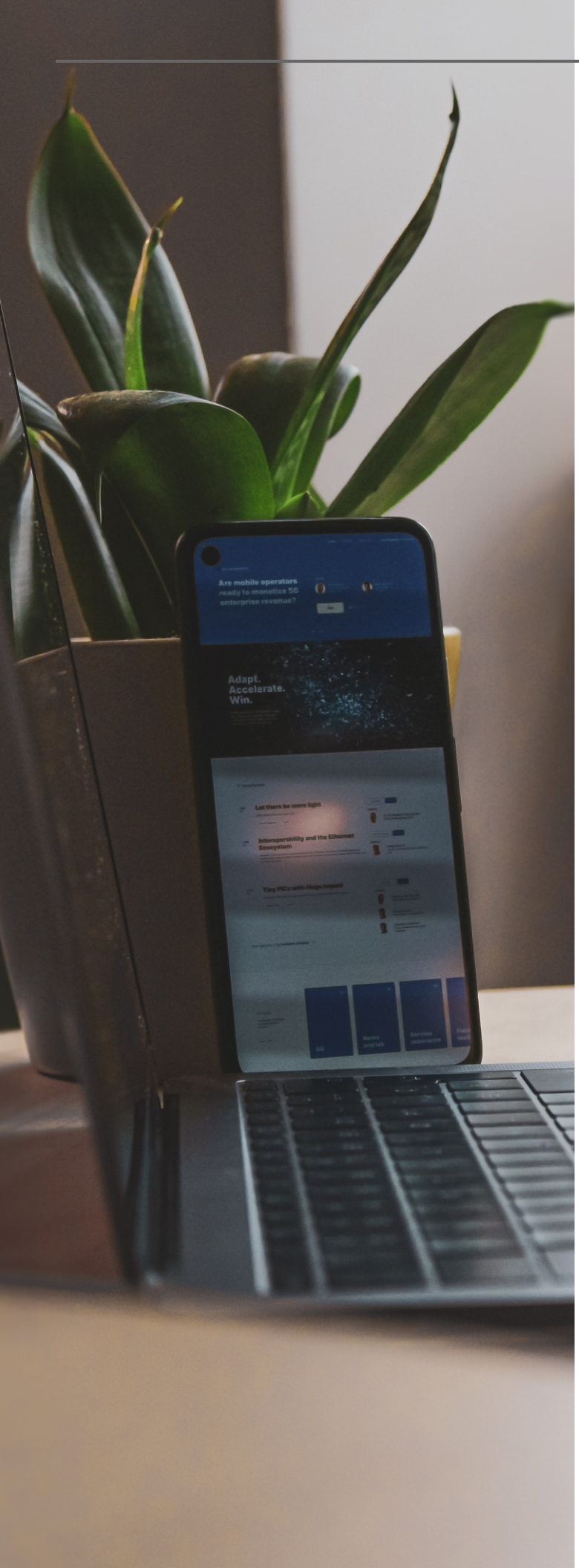
In this sense, digital solutions allow, for example, more accuracy and safety in diagnostics derived from data collection, processing, and analysis advances. Therefore, it increases the efficiency of both the clinical decisions of health professionals and the prevention of diseases and treatment of patients. Furthermore, it reduces medical errors and malpractice.

Equity and accessibility (economic sustainability)

Unfortunately, not everyone has the same opportunities for accessing health services. People in vulnerable situations, such as the elderly, ethnic groups, migrants, or people with low income, have historically been excluded.

Many companies in the industry are taking advantage of technologies to release mobile applications. As they have a large customer base, the marginal costs of investing in technology are lower, and service becomes more accessible to customers. These new channels decentralize the need to carry out health tasks physically. Examples of these applications are chatbots or telemedicine, which benefit the patient experience, shorten response times, and relieve the overdemand of healthcare systems.

It is relevant to mention that, for the appropriate adoption of digital solutions in an equitable way, the challenge of network connectivity and quality must be overcome. For example, according to the Significant Connectivity Index, in 2017, rural areas had, on average, 48% lower internet quality compared to urban areas, making it difficult for rural residents to access high-demand content such as video calls and videos. Addressing this disparity is of utmost importance to ensure equal opportunity for all.



Interoperability and Cybersecurity

The continuous exchange of data between systems and organizations is essential to drive digital transformation in the healthcare industry, as it benefits patients and providers by facilitating access to health data at all times and in real-time.

Nonetheless, one of the main challenges to integrating information is ensuring its security and privacy, as it is sensitive data with high value for companies. Another of the technical challenges the industry currently faces is the storage and portability of data due to the increase in the volume and specificity of health information, such as for 3D imaging diagnostics.

Interoperability in the industry streamlines and personalizes the services that citizens receive. In the long run, the savings in processes and procedures that data sharing entails will mean reducing care costs and boosting the coverage and accessibility of healthcare services in the region.

New technologies are enabling innovations that seek to solve this challenge. A clear case is how the Brazilian Ministry of Health, through its ConecteSUS platform, allows its citizens to search an integrated set of information, such as their medical history.

Regulatory Framework in the New Digital Context

In recent years and increased by the pandemic, there has been progress in the region regarding the development of regulations that include the advances of new technologies to further innovation.

In that respect, Brazil has taken the forefront in regulating telemedicine with a regulatory framework that pursues patient support, protection, recovery, and rehabilitation.

In turn, Chile has amended a Law to authorize health providers to provide care through telemedicine.

These modifications seek to facilitate the exchange of information for diagnostic, therapeutic, disease prevention, and research purposes, to name a few. Other than that, efforts are being made throughout the region to advance the Electronic Health Record, which allows the synchronization and availability of patient data quickly, breaking down the multiple repositories of information that create inefficiencies throughout the healthcare system.

MAIN INDUSTRY TRENDS

Different economic sectors have been reshaped as a result of the COVID-19 pandemic. In this changing environment, the healthcare industry has been one of the most shaken due to the logical impact that a pandemic has on the health system, but also due to the acceleration of trends such as digitalization in healthcare and the impact that new technologies have had on the efficiency of systems or the use of health data.

The main trends in the sector are:

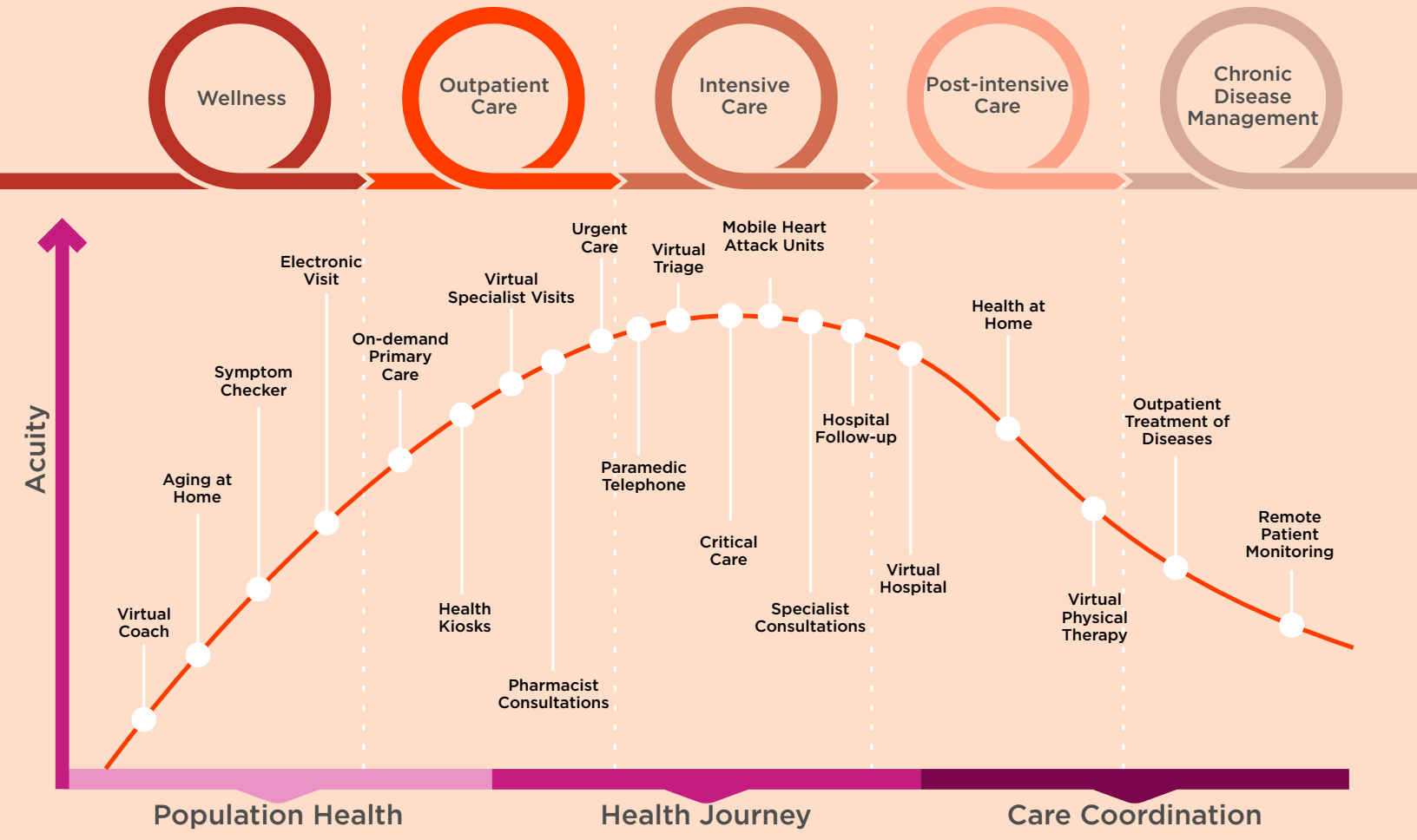
Increase in chronic disease prevention and furtherance of healthy habits

The LAC region faces a challenging health landscape, considering the aging of its population and the prevalence of chronic diseases, which are the leading cause of death in the region. These factors impose a high burden on patients' healthcare systems, finances, and quality of life. Improving access to health, ensuring continuous population monitoring, and optimizing disease prevention, care, and treatment are necessary to reduce the impact of diseases.

Therefore, we are witnessing a change in the mindset of companies in the healthcare industry, which are increasingly geared towards guaranteeing health throughout individuals' lives. This means that being healthy no longer means only being free of diseases or disorders of any kind but also considering areas of a preventive nature that were previously not considered, such as mental health.

This issue sharply intensified in the wake of the pandemic, and its aftermath can be seen in that more than four out of ten Brazilians have had anxiety problems, while in Peru, symptoms of depression increased fivefold. Unfortunately, this increase in cases of anxiety, panic attacks, and suicide rates affects the most vulnerable and low-income populations. Healthcare providers are expected to include a 360 vision of a healthy lifestyle in their strategy and business culture, providing prevention, promotion of good habits, follow-up of diseases, and joint monitoring while maintaining an ongoing relationship with users. The main goal is to help these users achieve their health goals. Companies should leverage new technologies to advance in the prevention of diseases and promote healthy habits. In the following graph from Gartner, we can see the different digital solutions that intervene in the patient's journey up to the management of chronic diseases:

Intersection of Use Cases of Virtual Care in the Health Journey



Source: Gartner

One of the primary applications is the possibility for healthcare professionals to make more effective decisions based on data with the aid of Artificial Intelligence, monitoring thousands of patients simultaneously and personalizing care for the cases that require it. Another possibility is using virtual healthcare assistants, customized according to one user's profile, which allows the integration of personal health history with prevention and coordinated care programs.

On the other hand, data analysis is very important for early detection. This technology can reduce the incidence of chronic diseases, supplying healthcare professionals with information about high-risk patients and allowing them to intervene even in asymptomatic patients. Providers can avail of this data to develop early diagnostics, leading to quicker and better treatment. From the users' standpoint, this information can mean the absence of relapses in their treatments, resulting in a better quality of life.

Although it may seem obvious, the benefits of a preventive health system versus a reactive one significantly impact society. On the one hand, treating fewer patients with chronic diseases would save the healthcare system much money. As there is less patient traffic, the hospital network (usually crowded) is relieved, reducing wait times and facilitating a more efficient and higher-quality service. Lastly, at the social level, greater wellness of citizens is achieved, an essential basis for the region to thrive.

Open Health: The Value of Data in the Healthcare Industry and the Entry of New Competitors

The importance of data increases over time. Currently, it is becoming a reality for all sectors of the economy. The financial sector was a pioneer in this regard, where regulators are pushing for Open Banking regulations that force financial institutions to hand over their customer information to third parties to improve customer services and reduce costs.

Based on the advances of Open Banking, the Open Health model consists of data that can be accessed collectively but controlled individually. Integrating data across the ecosystem and healthcare innovation can achieve process efficiencies and deliver higher-quality services. It promotes better communication and trust among all agents and ensures a standardized technical language and information security.

Although it is still embryonic, progress is being made within the healthcare industry to implement regulations for sharing patient data between the agents of the healthcare ecosystem and third parties. In the European Union, there is the European Health Data Space, which is a set of common rules, standards, and practices, infrastructures, and a governance framework that aims to (i) empower people through greater access to and control over their health data digitally, (ii) foster a single market for electronic health record systems, and (iii) provide a consistent, reliable, and efficient framework for the use of health data in research, innovation, policy-making, and regulatory activities.

Governments in Latin America and the Caribbean know they must be included if they want to seize the opportunity to improve their healthcare systems through data sharing. One of the benchmarks in the region is Brazil, where the government and the National Agency for Supplementary Health have announced their intentions to launch a new Open Health platform. Such project is targeted at increasing competition in the health insurance market. The project aims to allow the exchange of data between financial institutions, which will lead them to offer their users better, more transparent, and personalized services (adapted to each profile).

However, to move towards Open Health systems in the region, the technology should be adequately streamlined and integrated to ensure fluidity in data exchange. For the movement to start effectively in the health system, it is necessary to make substantial investments in IT, with safety regulations, interoperability standards, and the need for cultural change. It ought to be mentioned that the sharing of information between the various institutions is enabled by APIs (Application Programming Interface), which allow communication between applications for data transfer or specific actions.

Furthermore, companies in the industry manage crucial data and sensitive patient information. When sharing this information with third parties, (cyber)security policies, procedures, and standards must be in place to protect health information.

Its correct application will be one of the main levers to achieve more economically sustainable healthcare. Among the main possibilities offered by Open Health, the following can be highlighted: positive impact on clinical decisions, increase in the offer of goods and services with different cost models (a fact that can favor the emergence of new business models), and hyper-personalized patient care. In addition to the above, by encouraging collaboration between actors, reducing research times and time to market for new drugs or vaccines will be possible.

To this extent, one can understand how technology, in general, and the use of data in particular, allow new players to enter the healthcare market. Apart from emerging new digital solutions (health techs), the interest of other more mature companies of unrelated core business, such as retailers or digital giants, becomes apparent. One example is Amazon, which acquired One Medical in 2022 for USD 3.9 billion to be added to its Amazon Pharmacy e-pharmacy.

Another fascinating case is that of Apple: With its smartwatches (wearables), there is a large amount of medical data about its customers, such as the measurement of heart rate, body temperature, number of steps, blood pressure, and oxygen levels. For example, this information may be shared with third parties to better follow up with a patient with a chronic disease. Although one might also wonder if Apple will launch a division of insurance products, thus fully entering the health industry.

The following illustration shows, through a summary, how the adoption of Open Health and advancements in data interoperability would expand the health ecosystem. From the first level, with traditional players providing healthcare services as core business, through the growth of retailers and pharmaceutical retailers, to the last level, where new digital and large technological players appear.

How Open Health is opening up the health ecosystem by favoring the entry of new agents in the provision of healthcare services

Telehealth

Telemedicine refers to the provision of services at a distance, using new communication technologies (computer, tablet, or smartphone) for the exchange of information in the diagnosis, therapy, and prevention of disease or injury, research and evaluation, and continuing education by healthcare providers, all to improve the health of individuals and their communities.

We find various applications in the telehealth universe. One of the main ones is its use for healthcare processes such as teleconsultation or virtual care, which makes appointments between patients and doctors more flexible, saving travel time. It also shares information online, allowing the maintenance of a shared digital history. Currently, solutions are emerging, particularly for the delivery of drugs without the need to go in person.

These solutions leverage new technologies to digitalize the healthcare experience. An example is the Colombian company Farmalisto, a digital health platform that competes with physical drugstores by delivering more affordable products faster. With shareholding by IDB Invest since 2021, that company has products for personal care and beauty, dermocosmetics, and those for babies, in addition to products for sexual health, besides offering healthcare services such as telemedicine, therapy, and nursing under the Care24 brand. Another case of telehealth in Colombia is 1DOC3, which allows unlimited consultations in real-time through the mobile or web application on which people are cared for by professional doctors. In Peru, the Sisol Salud application enables users to request and schedule appointments online.

Telehealth reshapes the doctor-patient relationship, providing multiple benefits. For patients, it avoids unnecessary transfers to hospital centers, as they can access professionals or specialists anywhere in the world, and diagnoses and treatments are sped up. As concerns doctors, they can open a digital channel of contact with customers that allows them to be more efficient and offer a better experience.

This trend has been recently followed by IDB Invest, which closed in April of this year with an investment of up to 12 million dollars in Dr. Consulta.

This digital health company offers affordable healthcare through a multi-channel approach to serve a part of the disadvantaged population of the State of São Paulo, providing low-cost consultations and examinations. This financial support will expand the company's activity by opening new clinics, including other regions of Brazil, and developing its technology and health insurance (cuid.me).

Many health service providers began offering remote or telemedicine services during the pandemic to drive digital transformation and respond to health emergencies. There is a promising future for developing these solutions, which enhance flexibility and promote equity in the accessibility and coverage of healthcare services to citizens by reducing existing barriers to resources and place of residence.

Increased Efficiency in Healthcare Systems

Many companies today face the challenge of being profitable. The maturity of the industry and the entry of new competitors needing help to capture market share via prices put pressure on companies' operating margins. Companies are applying new technologies to be more cost-efficient in this scenario.

In this regard, intelligent automation technologies and process optimization can help digitalize lower value-added and labor-intensive non-clinical activities, thereby reducing costs, improving efficiency, and enabling healthcare organizations to invest more in critical strategic initiatives.

An example of this automation is using chatbots, software trained to autonomously hold conversations on specific topics, leveraged by artificial intelligence. To illustrate the example, in the Mexican market, we find Holly, which sends reminders to patients through a text message, a phone call, or WhatsApp when they have to attend their medical appointment. The company Farmalisto offers its customers a bot to streamline the purchase or order tracking processes.

Another case is electronic prescriptions. Typically, a prescription needs to be shown to receive the medicines. Prixz, a Mexican startup that delivers medicines at home, has a system powered by Artificial Intelligence in which, with the prescription photograph, it produces an OCR (Optical Character Recognition) scan to have the necessary data for its delivery.

It should be taken into account that, to be efficient through technology, companies face the challenge of modernizing their IT systems. Cloud technology and the replacement of legacy systems enable companies to be scalable in their solutions while allowing them to meet changing customer needs more quickly.

Brazil is positioning itself as a benchmark in the search for the efficiency of its health systems through technology. Its Ministry of Health announced the signing of four contracts for the advancement of Digital Health in 2023: the first to furnish federal hospitals with new technologies, the second to provide better protection to health information, and the third one refers to the streamlining of the cloud infrastructure used by the National Health Data Network (RDNS), which will allow the population to access their medical records online (via mobile or web app). Lastly, the fourth contract seeks to improve the development of systems to streamline the integration and incorporation of new technologies into the health system.

Sustainability and Decarbonization

Just as many industries strive for a more sustainable future, healthcare also seeks to contribute to building a healthier environment.

One of the clearest examples is ecolabelling, an environmental performance certification and labeling technique that highlights goods or services that are more environmentally friendly.

The other factor that the healthcare industry focuses on is decarbonization, as healthcare activity accounts for around 4.4% of global atmospheric emissions. By drawing up an action plan towards zero emissions, one can lead by example, protecting the planet's health in the face of climate change.

In conclusion, measuring social impact and investing in sustainable infrastructure such as green hospitals, new models of care, improving patients' eating habits, and choosing greener medical equipment is vital in creating a medical environment aligned with the Sustainable Development Goals.

BUSINESS MODELS

Technology has constantly transformed the value proposition of healthcare organizations towards a more digitalized one. This transformation in healthcare is allowing the entry of both new agents that are digital natives (healthtechs) and more traditional companies. The increase in competition is encouraging innovation in the sector, with the emergence of new business models, including:

Healthcare as a Service (HaaS)

Like many other industries, the healthcare industry has adapted to new methodologies and models of care during and after the pandemic. These changes can only be sustainable through continuous joint exploration by the different actors in the ecosystem.

Given the adoption of new care methods, monitoring, and virtual care, industry leaders can look for more significant opportunities to collaborate with other players, pool resources, and explore new models with a high probability of scalability, such as HaaS.

Based on a HaaS model, healthcare providers can access a wide range of services on a subscription basis. This allows them to cost-effectively expand the accessibility of healthcare services in a dynamic and agile way, as well as make constant improvements to their business goals and strategies.

This new model's benefits include pay-as-you-go flexibility, a better patient experience, and an improved healthcare staff workflow. These are essential components for improving efficiency while reducing associated costs.

Some examples of the model's application include Remote monitoring of patients and creating command centers that drive collaborative care, tele-critical care, and teleradiology, among others.

Digital Native Health Services

The generation of digital-native entities in the healthcare industry has been led by the private sector and, specifically, by the insurance industry.

Since the last decade, some players have been found to use a health insurance model based on telemedicine, in addition to incorporating concepts such as "health incentives." Programs such as Get Paid to Walk encourage patients to link their health insurance to a mobile physical activity app to be rewarded if their habits are healthy.

EXAMPLE: HEALTHCARE AS A SERVICE (HaaS)

HealthCatalyst

"Transform data into quantifiable value"

Drives change in healthcare organizations with data analytics and insights that improve performance and quality of care

OTHER PLAYERS

MEDIDATA · PRIVIA HEALTH · SIGNANT HEALTH

VALUE PROPOSITION

Its mission is to develop software, analyze data, and provide services that allow providers to optimize each patient´s health.

They are confident that with the right tests, analyses, and methods, providers can reshape healthcare, improving the quality of care provided to the patients they serve

RESULTS

69 MILLION USD in revenue

12 USD share price

+1000 employees

TECHNOLOGY

Data and analytics: To be able to make better decisions and be more efficient

Cloud: To support the analytics software platform and applications

Cybersecurity: To protect sensitive customer data and information

ALLIANCES

They have a Partner Program to achieve healthcare transformation, innovation, and collaboration among ecosystem agents

IMPACT

They aim to make the healthcare service more efficient by offering companies technological tools to be able to provide a higher quality service

KEY CAPABILITIES AND RESOURCES

- Customer Base Growth
- Adding new analytical applications and expanding the range of services
- Growing the market through new healthcare business segments
- Purchasing companies to enhance synergies

CUSTOMER SEGMENTS

Mostly hospitals, some of its main customers are:

Allina Health · Banner Health · CHOC Children's · Children's Wisconsin (Kids deserve the best.) · AlohaCare (For a healthy Hawaii.)

MAIN REVENUE STREAMS

Solution Sales:

- **Platform:** Integrates data flexibly, openly, and scalably
- **Analytics Applications**
- **Other Services:** Improvements through the data of operations and finances of organizations

Driven by the pandemic, more and more organizations of this type are noticed, and even traditional insurers are beginning to adopt this model or create spin-offs with 100% digital DNA.

This model allows patients and policyholders to access services remotely in an agile and user-friendly way when required. Through telehealth, issues relevant to the industry, such as mental health, can be addressed, as it opens up the possibility of receiving professional support and an evaluation entirely online and accessing digital content to treat any disorder. As well as mental health, as a result of digital consultations, one can treat many health issues with specialized doctors at any time needed.

Furthermore, the monitoring carried out by this type of organization to their patients includes wearables and mobile applications. In this manner, healthcare professionals can remotely monitor pathologies such as asthma, weight, and hypertension. In addition, entities can measure patients' vital signs and make a series of findings from basic measurements (heart rate, respiratory rate, blood pressure, etc.), such as stress level, risk of cardiovascular diseases and heart attacks, or general health status.

EXAMPLE: DIGITAL NATIVE HEALTH SERVICES

klare By Santander

"100% digital insurance broker"

Klare was born with a disruptive spirit and an ambitious goal: to offer insurance that people trust

OTHER PLAYERS

QuePlan.cl youse simplee.

VALUE PROPOSITION

Its mission is to change the way insurance is taken out, reinventing the process to make it intuitive and 100% digital.

All insurance taken out can be managed from the platform (manage payments, collections, and cancellations)

TECHNOLOGY

Biometrics: digital identity validation

Payments and security: they use Flow, an online payment platform certified by Sitelock and PCI DSS (Payment Card Data Security Standard) to pay 100% securely with credit, debit, and prepaid cards

ALLIANCES

Agreements with insurers and banks:

ZURICH MAPFRE confuturo SOMOS CChC Santander

CUSTOMER SEGMENTS

Clients aged 25 and 40, mainly parents, but its popularity is also growing among young users without children

IMPACT

It favors inclusion by setting as a goal not to have different rates depending on gender or income, but to recommend the best product

RESULTS

+3 MILLION EUROS
of assets

+20
employees

KEY CAPABILITIES AND RESOURCES

- Attracting new clients
- Expanding the product catalogue through partnerships
- Platform development and technology investments
- Geographical expansion throughout Latin America

MAIN REVENUE STREAMS

Commissions on the sale of insurance:

- Life, oncology and complementary health insurance
- Vacation, frequent travelers, and long stay insurance
- Dental insurance
- Health insurance

Lastly, one of the services with the most significant added value in this new model includes the various digital health programs provided by the institutions, which aim to further prevention in order to improve society's wellness while reducing the costs associated with the care and treatment of diseases. In this sense, as we saw in the trends section, the business models of insurance companies, both traditional and digital natives, are taking a turn from being reactive models to being preventive models.

Open Platforms and Ecosystem Generation

Two of the main trends in digital business models in the healthcare industry are open platforms and ecosystems, which give way to collaborative environments that allow economies of scale to be exploited. Available platforms facilitate the creation of new digital products, and consequently, ecosystems generate a meeting space between supply and demand. However, a greater degree of digital maturity is still required in the industry to take more significant advantage of both.

Nonetheless, some players in the sector, such as Cerner, seek to transform electronic patient medical record systems or population health management systems into open platforms so they can be accessed in an agile and simple way. The ultimate goal is to create an ecosystem around these platforms, benefiting from the rise of mobile applications and the emergence of interoperability standards such as FHIR (Fast Health Interoperability Resources), among other aspects, to support health systems' clinical, financial, and operational areas.

There are also initiatives such as nference that, in addition to massively using health data, prioritize information privacy, partnering with major health systems to transform large and predominantly unstructured databases captured in electronic medical records (EMR) into robust software solutions that allow medical specialists to discover and develop the next generation of personalized diagnoses and treatments for patients around the world. To that extent, the foundations are laid for a possible collaboration model between healthcare organizations, application developers, and service providers based on the use of data.

EXAMPLE: OPEN PLATFORMS AND ECOSYSTEM GENERATION

nference®

"Driving quantum leaps in human health"

Nference partners with healthcare systems to transform massive amounts of data into powerful software solutions that power the healthcare industry.

OTHER PLAYERS

ORACLE Cerner
caresyntax®
WÚRU
prontmed

VALUE PROPOSITION

Its mission is to create an accredited clinical analysis platform through partnerships with leading health systems. Through cutting-edge technology and biomedical expertise, we aim to obtain the greatest value from Electronic Medical Records (EMR), transforming them into solutions for the healthcare ecosystem. Among its solutions are: triangulation and reference landscape software

TECHNOLOGY

Big data / Inteligencia artificial: Interpretation of data and algorithms

Cloud: Provides storage solutions with high security and performance capabilities

Cybersecurity: Ongoing monitoring and security policies

ALLIANCES

Pharmaceutical agreements: Partnership with Pfizer to develop software that detects cardiac amyloidosis early.

IMPACT

It aims to unlock new capabilities in the health ecosystem through the use of data, streamlining research as well as product creation

CUSTOMER SEGMENTS

Its focus is mainly on medical centers and biopharmaceutical companies

NOVARTIS
Pfizer
janssen PHARMACEUTICAL COMPANIES OF Johnson & Johnson

RESULTS

TOP 10
Data Science Institutions in 2023

+150 MILLION
in capital raised

3 COUNTRIES
United States, Canada, and India

KEY CAPABILITIES AND RESOURCES

- Expanding product development through research
- Partnering with massive data contributors such as Mayo Clinic and Duke Health
- Patented algorithms to get the most out of data

MAIN REVENUE STREAMS

Solution Sales:

- **Biopharmaceuticals:** Triangulation of public and private data and state-of-the-art algorithms
- **Health Systems:** Maximizing own data to improve patient and software product outcomes

MAP OF LEADING PLAYERS BY INDUSTRY

As seen throughout the review, new technologies are reshaping how healthcare services are provided, with a growing trend towards digitalization in the doctor-patient relationship. Besides, the industry faces a great opportunity for growth and innovation: interoperability and data sharing. On the other hand, the paradigm shift from reactive to preventive systems that promote healthy lifestyle habits will likely positively impact countries' long-term development.

To conclude, the following illustration shows the most relevant new digital solutions from Latin American and Caribbean countries that will help improve healthcare systems:

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