5 Ways Big Data Can Benefit the Healthcare Industry

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Vlad Vahromovs is an accomplished tech executive with over 15 years of executive leadership experience delivering cutting-edge solutions to industry giants, He is the CEO of Intellectsoft, the technology partner of Fortune 500 companies including EY, Nestle, and Jaguar. Vlad holds modern courses degrees from Stanford and Erasmus University Rotterdam. HealthManagement.org spoke to Vlad about the benefits and application of Big Data in healthcare.

You have experience in various sectors, including fintech, hospitality, and telecommunications. But what about healthcare? What has been your experience and/or specific projects or successes in this industry?

The healthcare sector is actually one of our main priorities at the moment. Especially now, as COVID-19 has boosted the demand for innovative solutions that make lives easier for patients and doctors.

For instance, one of our projects at Intellectsoft completely revolutionised orthodontic experiences for all stakeholders. It's no secret that dental work isn't cheap, and patients are presented with a hefty bill at the start of the treatment – without any indication of the length or results. So, we worked on an app that uses patients' photos to facilitate doctors in choosing the best treatment and forecasting possible results. This app helps doctors provide accurate diagnostics while allowing patients to see exactly how their smile will look in the months or years after treatment.

The other solution I would highlight is an app for children with neurological conditions. The application has become a so-called home doctor for these kids, as it offers various video exercises and gymnastics based on the child's current needs. It became extremely helpful during the pandemic as non-urgent patients were restricted from entering the healthcare facilities. Parents could use the app to exercise with their little ones at home - no stress, no hassle, no waiting in lines.

This project has a special place in our hearts because we believe that no child should be deprived of medical help, no matter the conditions. When it comes to assisting in the child's development, timing is everything.

These are just a few examples of many in our portfolio. We are currently working on several more solutions that we'll announce shortly.

How can big data benefit the healthcare industry?

Big data is disrupting many industries these days, and healthcare is no exception. The benefits are enormous. Smart machines and algorithms can process large amounts of data that a human brain can not possibly comprehend; as a result, big data can help with early diagnostics, treatments, and accurate forecasts.

Moreover, based on the large amounts of data that are fed into the algorithm, not only can it help make better decisions, but it can also make them way faster.

Electronic Health Records (EHR) is the biggest application of Big Data in healthcare. But healthcare organisations are still struggling to fully implement effective EHR systems. Why do you think that is?

Numerous hospitals in the US have already implemented the EHR system, but many are still behind. It's a complex process that requires both time and money, and these things are often hard to come by in the healthcare industry. So even though the advantages leave no room for doubt, the implementation can take millions.

The other issue is the usage of the users' sensitive data. Again, there are specific requirements and limitations to the correct implementation and use of this data. Not every solutions provider is familiar with them, so finding a tech partner is another challenge.

Lastly, think of all the management software used in a hospital. A unified EHR would require leaving behind legacy processes, procedures, and tools previously used to store and manage the data. This means leaving behind years or decades of setting up processes, starting from scratch with a new system, training the staff to work with it, and ensuring that the adoption goes well. All of these require huge investments, so it takes time.

On the bright side, we see an influx of demand from our clients, so the industry is moving in the right direction, and we're excited to be a part of the change.

How can this be improved?

Every innovation comes with a learning curve, and industry giants have to drive the change. They have to set the trend, and the others will follow, but pioneering innovation is by no means easy. These companies have to invest big money in the novelty and then provide more funds to ensure its proper adoption through training, promotion, testing, etc.

Once that is done, it's easier for others to follow and learn from the mistakes made by these pioneers. So, first, prominent players need to take the lead, and everyone else will naturally fall into line.

Then, the industry should create a unified view of depersonalised data that can train the algorithms for better medical decisions, improved diagnostics, etc. And the industry is already moving towards widespread adoption of such solutions.

Do you think Big Data has the potential to tackle diseases like cancer? Can it help with the prevention of chronic disease?

Definitely, and the future is already here. For example, in 2020, AI beat humans in finding drugs that can be used to manage COVID-19. Later in 2021, the Purdue Center turned to data science to find ways to treat cancer.

The same applies to early treatment and disease prevention as machines crunch numbers at a pace that no human can. They can track patterns and dependencies closely, unlike the human brain, allowing them to detect the presence of a disease long before any symptoms become apparent.

Can Big Data play any role in medical imaging?

Absolutely. Medical institutions in the US alone produce 650-700 million images each year. They're created with the help of technicians, then processed, and only then get sent to the doctor for further diagnostics. This chain is too long and inefficient and involves numerous qualified staff members. Moreover, it is prone to human error and disruption, such as labor shortage. But big data can help.

Imagine being able to import those images into a machine and instantly receiving accurate diagnostics and an effective treatment plan. Doctors would no longer spend valuable time on manual work, resulting in a massive decrease in the cost of treatment as patients receive their treatment faster.

This is what matters the most in the end: saving lives. And big data can help us achieve all that and a lot more.

Digital transformation has now become essential for most organisations. So why do you think healthcare has been so slow in this journey?

Let's not forget the money factor and the fact that the healthcare system is tied to the insurance system. The majority of healthcare services are covered by insurance companies, which makes them another link in the chain.

Then there's the medical staff, patients, and the whole supply chain that helps run hospitals. Every tiny change affects all of these people and departments, and introducing even the slightest novelty is extremely complicated and complex.

But COVID-19 has accelerated the digital transformation of healthcare as more companies invest in new tech solutions and more patients are willing to give them a go. For example, look at the accelerated adoption of telemedicine to avoid crowds in hospitals, enabling doctors to assist more people.

All in all, I am grateful that we can serve the community in a small way, thanks to our partners and clients who play a vital role in moving the industry forward. Our work brings a deep sense of meaning to our days here at Intellectsoft, and we hope to continue making healthcare better and more accessible to all.

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