



Business challenge

Healthcare systems around the world are struggling to handle a constant influx of patients, many of whom simply need reassurance, rather than treatment. How can health providers cope?

Transformation

Mediktor is an AI-assisted online symptom-assessment technology, powered by IBM® Cloud™, which integrates seamlessly into healthcare payers' and providers' online services and workflows.



Josep Carbó
 Director Global Business Development & Partner
 Teckel Medical

Business benefits:

88%
 of users claim that access to Mediktor helped them avoid a visit to a doctor

100%
 of users would recommend the Mediktor service to a friend

45-minute
 reduction in waiting times for some patients when Mediktor is used in the ER

Mediktor

Improving access to healthcare through AI-based symptoms assessment in the IBM Cloud

Mediktor is the world's most advanced and accurate symptom checker for pre-diagnosis, triage and decision-making support. Founded in Barcelona, Spain, in 2011, the company has developed an artificial intelligence solution that users can easily interact with by describing their symptoms in natural language. Designed to be easily integrated with healthcare payers and providers, the Mediktor technology offers the potential to dramatically reduce unnecessary expenditure, and helps people make smarter, safer decisions when they feel unwell.

“According to our research, 88 percent of users with non-serious illnesses say that access to Mediktor plus the digital interaction with a clinician helped them avoid the need to visit a doctor in person or go to the ER.”

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Relieving stress for patients and providers

21st century medicine is a high-pressure environment. As the cost of care continues to increase, healthcare providers around the world are struggling to maintain standards of care while working within ever-tighter financial constraints.

Meanwhile, emergency rooms are overflowing with people whose problems could be solved more effectively via alternative channels, such as an online chat or video consultation. Each of these cases diverts valuable time and resources away from seriously ill patients. Many health services run campaigns to raise awareness of this issue and discourage people from coming to the ER with minor illnesses. However, it is better for people to see a doctor unnecessarily, than for them to underestimate the risks and stay home when their condition might be serious.

Mediktor, founded in 2011, realized the problem was fundamentally about decision support, as Josep Carbó, Director of Global Business Development and Partner at Mediktor, explains: “When you are sick, you are the worst person to make decisions about your own care. You probably don’t have the medical knowledge to make an informed choice—and even if you do, you’re emotionally involved in the situation, which is likely to cloud your judgment.”

Mediktor’s answer is to harness artificial intelligence to analyze a person’s symptoms and provide objective information to help them decide on their next step: for example, whether they should speak to a doctor online, make a face-to-face appointment at a local clinic, go straight to the ER, or even call an ambulance.

The company built an AI and spent a few years providing it as a free, consumer-facing service to help it learn from real-world data about people’s symptoms. Once the AI had gained enough expertise, Mediktor moved into the B2B sector, selling Mediktor as a white-label offering that healthcare insurers, providers and telemedicine platforms can embed into the services they offer to patients.

Roger Forcada, CTO and Partner, says: “Our strategy is global, but healthcare is local—every country has its own regulations and clinical practices. We needed an IT infrastructure that could deliver the Mediktor technology anywhere in the world, but still provide appropriate guarantees about data privacy, security and locality in each region. That meant we needed a very specific kind of cloud architecture.”



Bringing the solution to life

Mediktor needed an agile infrastructure to deliver its service to healthcare insurers, providers and other companies in the healthcare sector—so it selected [IBM Cloud](#).

“To bring new clients on board, we need to be able to create servers on demand and put them into production quickly,” says Roger Forcada. “To respond to clients’ needs, we need rapid scalability, high availability, and low latency. A cloud infrastructure was the only option that would give us these properties.”

Given the complex regulations imposed on IT services in different countries, it proved difficult for Mediktor to find software-as-a-service or platform-as-a-service cloud solutions that would meet all its requirements. A lower-level, infrastructure-as-a-service strategy based on [IBM Cloud Virtual Servers](#) proved to be the best option.

“IBM Cloud Virtual Servers offered us a high degree of visibility for the hardware, and the ability to configure and adapt this hardware to our specific needs, in ways no other software provider with the same levels of technical power can offer right now,” says Roger Forcada.

Josep Carbó adds: “IBM was a good choice from a commercial perspective too, because they already work with many leading healthcare organizations who could benefit from Mediktor. IBM’s global reach is also a key factor to help us deliver solutions that fully comply with each country’s regulations about the location of healthcare data.”

Finally, the company identified [IBM Watson](#) solutions as offering important synergies with the Mediktor service. Although the Mediktor team has developed the AI component of its solution in-house, Watson could potentially help the model become even more powerful and accurate in the future.

Streamlining the diagnostic process

Mediktor has successfully launched its B2B service in the IBM Cloud, and is working with clients on a number of projects to demonstrate its capabilities as a decision support system for the diagnostic process. For example, one [clinical trial](#) of Mediktor at Hospital Clinic de Barcelona, Spain, showed a 91.3 percent accuracy rate in diagnosis, compared to the “gold standard” of diagnosis by a human doctor. This is not only the highest accuracy rate in the market, but also the only clinically validated trial involving participation from more than 1,000 patients in the Emergency Department.



Since launch, the company has also gathered valuable insight into how and when patients engage with the service. For example, across all user interactions, approximately 85 percent of cases are non-serious, 10 percent are moderate, and only 5 percent are urgent or emergency—so the vast majority of users do not need to visit a doctor or go to the ER.

Josep Carbó comments: “The most important thing to understand is that Mediktor is not a replacement for doctors. In fact, after a patient enters their symptoms into Mediktor, in most cases, the system will automatically connect them remotely to a real doctor for a consultation over online chat, phone or video.

“According to our research, 88 percent of users with non-serious illnesses say that access to Mediktor plus the digital interaction with a clinician helped them avoid the need to visit a doctor in person or go to the ER. The combination of Mediktor’s assessment and the ability to speak to a doctor online gave them all the reassurance they needed. The mixture of artificial intelligence and doctors is a winning combination – we call it augmented intelligence.”

One surprising result from the research is that 20 percent of users with non-serious illnesses were completely satisfied with Mediktor’s recommendations and did not think remote consultation with a doctor was even necessary. This may suggest that people are consulting Mediktor about minor ailments even when they would not normally think it worthwhile to consult a doctor—so the service is providing additional reassurance and peace-of-mind.

Josep Carbó adds: “It’s very clear that Mediktor is a hit with users. The average rating for the service is 9 out of 10, and 95 percent of people say it is friendly and easy to use. According to a survey conducted by health insurers, 100 percent of people said they would recommend Mediktor to their friends and family.”

Besides helping users assess their condition online, Mediktor can also be used in clinics and ERs to assist with triage and even potentially accelerate treatment for some common conditions. A preliminary study at the Hospital Clínico San Carlos in Madrid showed that there could be a 45-minute reduction in waiting times for some patients when Mediktor is used in the ER.

Josep Carbó says: “For example, there are conditions like urinary tract infections, where there is a very clear diagnosis and treatment pathway. With Mediktor, it would be possible to fast-track treatment for patients with UTIs, so they could potentially see a nurse and pick up their prescription, then just get the doctor to approve the diagnosis and treatment, rather than waiting hours for a consultation with a doctor.”

Finally, from a technology perspective, IBM Cloud provides a flexible, reliable and cost-effective platform that enables Mediktor to make its services available to clients in many countries around the world.

Roger Forcada comments: “The costs of providing similar scalability, availability and latency with our own infrastructure would grow exponentially as our business expands, whereas the IBM Cloud Virtual Servers allow us to scale up seamlessly. It’s the same with development agility: we can forget 70 percent of the effort we used to spend on infrastructure management, which improves our delivery times and reduces our costs greatly.”

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Roger Forcada, CTO & Partner,
Teckel Medical

Solution components

- IBM® Cloud™ Virtual Servers

Take the next step

To learn more about IBM Cloud Virtual Servers, please contact your IBM representative or IBM Business Partner, or visit the following website: ibm.com/cloud/virtual-servers

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