«We live in a world where neither recommendations nor the money you pay guarantees quality. This applies to any area. AI can solve this problem»

Vladimir Aleksandrovsky, founder and CEO of a chain of children's (Dental Fantasy) and adult (Belgravia Dental Studio) dental clinics, talks about the peculiarities of using artificial intelligence in dental treatment and the future of the industry.

Vladimir Aleksandrovsky. Photo: personal archive

Vladimir Aleksandrovsky, creator of Diagnocat, founder and CEO of the Fantasy group of medical companies (the Dental Fantasy chain of children's dental clinics and the Belgravia Dental Studio chain of adult dental clinics), told the Republic about the peculiarities of launching a dental startup on the American and Chinese markets, about how dentists are using AI and what for, and finally, the future of the industry: «low dentistry».

- How does the use of artificial intelligence help in dentistry? Will AI ever replace a real doctor?

- There is research on what professions can be replaced by artificial intelligence in the near future. Today AI is actively used to optimize routine work that does not require creativity and developed emotional intellect. The profession of a dentist is the last on the list of professions to be automated, as it is very creative. Dentists have to deal with unusual cases and rare complications. Modern rehabilitation of dentition is a complex and multifaceted process which involves a whole team of dentists of various specializations.

Therefore, I think that the dentist's profession will remain in demand for many years to come, and AI can only be an assistant to the doctor, reducing the influence of the human factor and, accordingly, risks for the patient. Technology will help the dentist not to miss, for example, cancer in the mouth, as well as create an optimal treatment plan. I think we will see all this very soon.

- What will be the near future of dentistry?

- I like the vision of Portugal's Miguel Stanley, the founder of the concept of slow dentistry. This is the most technologically advanced and beautiful dentistry, which we also currently practice.

In his opinion, the future of the profession looks like this: you take a picture of your teeth, upload it to your phone, then the AI determines what procedures you need. In this case, you can choose one of the proposed options: get rid of acute pain, have all your teeth attended to reliably without unnecessary procedures, or get a Hollywood smile. It all depends on what you want at the time and how much money you are willing to spend. Based on your wishes, the smart system suggests suitable clinics where you can receive treatment.

- What doctor and patient problems does this solve?

- The patient is relieved of the need to choose a doctor and the associated risks. We live in a world where neither recommendations nor the money you pay guarantees quality. This applies to any area. AI can solve this problem. It's like the taxi market before and after Uber. The same thing happens with dentistry and medicine in general.

At the same time, it is an ideal world for a doctor: you no longer have to convince the patient of something or "sell" him something. You do what you chose your profession for—you treat people. And the AI develops the optimal therapy plan for each specific case.

I believe in such a future and hope that it will come soon. Because this will greatly facilitate the relationship between doctors and patients and make dental care much more affordable. And I am sure that this will only make people's teeth better.

- What does your Diagnocat startup use AI for?

- If you go to a dentist, then you will definitely have an X-ray taken—it's the basis for diagnosis and the treatment plan. Our artificial intelligence-based technology determines the condition of the teeth from images, finds existing problems and suggests how to treat them. At first, AI only worked with computed tomography. Now we have expanded the functionality so that any type of dental images (panoramic or images of one tooth) can be loaded into Diagnocat and, based on the analysis results, a diagnosis and treatment recommendations can be obtained.

Photo: Diagnocat

- What is the history of the project?

- Two years ago we had a developed chain of dental clinics in Moscow, which employed several hundred employees. I was faced with a problem then: despite the high professionalism of the doctors, sometimes problems arise related to the quality of treatment. Dentists have different levels of skill and experience. Because of this, patients, when they go to different specialists, receive different diagnoses and, as a result, different treatment plans. In this case, people can lose their health, while doctors are constantly at risk of at least an unpleasant conversation with a patient and at most a lawsuit. And everyone loses money.

I began to study how similar problems are being solved in other industries. AI technologies began to spread widely a few years ago, just then Facebook introduced a facial recognition algorithm. I got the idea to use artificial intelligence and computer vision technology to analyze our dental images. We had enough material for teaching the AI (images of patients' teeth). So we put together a small team of engineers and made the first MVP (minimum viable product - Republic). Then we gave it to our doctors to test it and realized that it works.

- Has your technology been proven to be effective in broader studies?

- Yes, this year we conducted a large study with the participation of doctors from leading dental clinics in Moscow. Two groups of 10 doctors each looked at images of the teeth of real patients and made diagnoses from them. Each specialist examined 30 images, that is, about 600 teeth—that's the right amount of work. Doctors from one group made diagnoses using Diagnocat, the ones from the second did it independently. After a month's break, they switched places and again analyzed the same pictures that they had already forgotten.

The study results showed that the number of errors is reduced by 30% when using Diagnocat. Without the program, doctors either miss diseases or overdiagnose almost a third of conditions, which has a negative impact on treatment plans and patients' health.

- Similar technologies are being developed by other companies — Canada's Denti.AI, Israel's Orca. How do you differentiate yourself from the competition?

- I know these projects well; I have talked with their founders and leaders, and all of them are engineers. I am a dentist, and I have experience in managing dental clinics. The second co-founder and CEO, Yan Kalika, is also a dentist and owner of a large chain of clinics in California. We have a higher level of expertise and more connections, and we try to use these advantages.

I think that competition is good because it motivates you to develop faster. Compared to the competitors, we have the widest functionality, so far no one has presented anything similar on the market. Orca, for instance, has a very narrowly specialized finished product for orthodontics. We also differentiate ourselves through continuous improvement of the user interface and the user experience algorithm.

- Do you already have buyers for your product?

- Yes, Diagnocat is already used by doctors in more than 250 clinics in Russia and the CIS. We are now entering the Chinese market, where a number of healthcare institutions are also using our technology. We are not yet widely represented in the US and Europe due to regulatory restrictions, but we are working on it.

At the moment, we are awaiting a marketing authorization from the FDA in the United States, because we are going to sell our product there as software as a medical device (software that is used for medical purposes and is not part of a medical device. - Republic) and introduce it into clinical practice. Based on the Diagnocat analysis, doctors will refine their diagnoses. I think we will be able to launch sales in America by the end of the year.

- How do you plan to develop your product further?

- We want dentists to be able to upload all digital patient information into our system and receive an accurate comprehensive diagnosis and a detailed treatment plan. And then just implement this plan. We are working on this and, as we can see from the obtained results, we are already close to this level of technology development.

- How large were the investments and how much did you specifically invest?

- Investments amounted to more than $2 million. Mostly my personal investments.

- When do you expect to recover them?

- I expect to build a multi-billion-dollar corporation in the next 5-10 years.

- The creators of MSQRD, Evgeny Nevgen and Sergey Gonchar, are among your investors. How did you manage to bring them in? What role did they play in the project?

- We were introduced by my friends, after which I phoned Evgeny and Sergey and told them about the idea of the project. They really liked it, and they almost immediately agreed to act as angel investors.

I am very grateful to them, because, apart from the money, they brought a lot to the project. I was just a dentist and medical manager. Building a startup and leading engineers is a completely different competence. The guys trained me. I came to the Valley many times, where at that time Evgeny Nevgen worked for Facebook. He introduced me to the Silicon Valley ecosystem and other startup founders. It was a unique and very rewarding experience. Thanks to this, Diagnocat has achieved much of what we have today.

- Is Diagnocat now more a Russian company or an American one?

- It's an international project. The developers are located in Russia and Ukraine, and our head office is located in the USA. It should be noted that Silicon Valley is the ideal place to create a startup. It's the only place where rapid growth and the attraction of the most profitable financing is possible.

In addition, the US dentistry market is the largest in the world—$130 billion. About 200,000 dentists work in the country, and 60% of treatment costs are covered by insurance. No other country can match this. That's why our largest market is the USA. And for me as an entrepreneur, this is a real challenge, since this is the most difficult market.

- Isn't the Chinese market more difficult?

- No, it's just different. They have a completely different approach there, a different culture and their own rhythm. But the Chinese market is also very large and, in the long term, it may turn out to be more profitable for a startup like ours. It's hard to guess here.

To have a successful business in China, it is necessary to enter into partnerships with local entrepreneurs who find it extremely important to have a stake in the project. My business partner lives in Hong Kong, and whenever I'm preparing for the negotiations, I am surprised every time how eastern culture differs from western and what nuances must be taken into account for everything to go well. For example, in the USA, everyone is already used to electronic contracts and signatures. But when we were getting ready to conclude a contract with our Chinese partners, we printed it out at an expensive print shop and put it in a red binding with a gold ribbon and a large, beautiful seal. The document must look nice and impressive; then it has weight. When you work with the Chinese, this should not be neglected.

- Last question: why Diagnocat? What do cats have to do with it?

- In fact, CAT is an abbreviation. Initially, we interpreted it as Computerized Axial Tomography. But, as I said, our AI now works not only with CT, and CAT stands for Computer Assisted Treatment. Therefore, Diagnocat is both «diagnostic» and «computer assisted treatment».