

New Revolutionary Smartphone App for Early Detection of Alzheimer's Disease



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"Alzheimer's Disease is not someone else's problem, it is a community problem and we all should start taking an action against it."- Dr. Tiziana Rossetti

CEOCFO: *Dr. Rossetti, according to your site CogMaze is the app that reveals very early signs of dementia. How are you able to do that?*

Dr. Rossetti: Our CogMaze smartphone app is a completely new system offers real-time monitoring, which is also a passive monitoring. We are trying to get objective data with high reliability, in a way that is easy to use for a doctor.

CEOCFO: *What are you monitoring?*

Dr. Rossetti: The key to understanding the solution is that we look for activities that correlates with Alzheimer's Disease. Most people use their cell phones every day, which allows us to monitor their activities, and through the observation of their activities, we are able to establish behavior changes. We apply sophisticated algorithms to understand how severe is the change. We are also finding probability values due to psychological or neurological (we identify behavioral changes due to psychological or neurological triggers). I say psychological because we are looking at several parameters, some of which correlate to anxiety or depression.

CEOCFO: *Would you give us an example of changes you are able to detect with your app?*

Dr. Rossetti: We establish what is the normal way the user interacts with the phone, and then we detect changes. Some of these parameters can give us a strong indication that the changes are due to cognitive decline, because these are the main functions that decline with Alzheimer's disease. Other activities correlate less with Alzheimer's, so it can give us information based on symptoms of the disease. For example, you may use your phone for talking or even playing games, and all of these actions can be observed, so we look for drastic changes in your behaviors. When your behaviors are modified too much in a very short time, we can establish whether the change from your day-to-day behavior is normal, or whether there is an underlying reason having to do with your cognitive health.

CEOCFO: *Would people download your app and agree to allow themselves to be monitored?*

Dr. Rossetti: Yes and there are privacy issues, but the key is that we do not ask the individual to take any test. The test is done every time the individual uses the phone. Therefore, the person downloading our app will need to agree to be monitored.

CEOCFO: *Who is notified when there is a change?*

Dr. Rossetti: The system notifies directly the user. The major problem with Alzheimer's cognition is that people generally do not recognize signs of the disease. There is usually a laps of two years before anyone recognizes the changes, which causes late diagnosis, when the disease has progress too long for early intervention. Our system allows for very early

detection. It warns and links the patients with their General Practitioners (GPs) and psychiatric systems. This is currently being done in our ongoing clinical trials. It is giving the individual the chance to have the support they need, as we can identify the cognitive normal. Early detection is important when it comes to the drugs that are currently being used to treat Alzheimer's disease and the ones that are currently under studying (i.e. anti-beta amyloid). Treatments currently under study are very promising and mainly work on cleaning up plaque from the brain, but in the clinical trials they have not seen any behavior improvement, because the patients had progressed too far along in the disease. Now they are trying to get to these patients in the early stages, but to do that they needed a solution for early detection, which is where GogMaze comes in. Our solution warns the patient, but then it is up to the individual to reach out for help.

CEOFO: *Where are you in the process of development and commercialization?*

Dr. Rossetti: We have developed and tested the prototype, and we have now just received approval for our clinical trials in January of this year, at the University of Hospital of Tübingen, in collaboration with Professor Laske, which is the head of the psychiatric division. We will probably be starting our testing in patients within the next two or three months. The system can recognize signs of the disease and can also track the disease at different stages. Of course, at some point, if a patient stops interacting with their phone because the disease has progressed too far along, they will not be able to be tracked anymore. However, they can be tracked in the early stage development of the disease, which is very important and opens other possibilities, because if you have a system that can monitor in real-time a patient, you can also use the system to monitor your drugs. A physician can then adjust the dosage of the drug for the treatment, as well as see the real effect of the drug in real-time. You will be able to see if there is cognitive improvement because of your drug, in days or weeks or months. The drug developer and the physicians will be able to tell the power of their compound.

CEOFO: *Why do you feel people will agree to monitor their own behavior?*

Dr. Rossetti: This is a question we have spent a great deal of time thinking about. It is true that people are very aware of the disease today, but the majority of people also know that there is no cure. Therefore, we are targeting the people that have met the disease (for example because one of the two parents were effected) and because of that are more sensitive to the problem population. Alzheimer's disease affects one of almost two people that are near 85 years old. These people have children that are 25 years or old, who are also at high risk for Alzheimer's disease, because at 60 or 65 years old, you may see if you have 16% probability to have Alzheimer's disease. The children of patients who have Alzheimer's disease may react in two different ways. In fact, although it is predictable that some of them will be so scared about AD that will refuse even the idea to be affected (one day), we believe that at least some of them will be very concerned for themselves and then will get frequently tested. In fact, within the last five years we have had a large increase in the market for brain apps. For example, some of these apps promise to improve your cognition, and up to today, 60 million people have already paid for and downloaded these apps. This means that there is a clear understanding and concern about the problem, so people are taking action. We want to target this population. These are people who have been exposed and tested, and then take an action against the possibility to develop the disease. Now they are doing a great deal of advertising campaigns to warn people about the disease, but in my opinion they are pushing on the wrong things in these campaigns. You do not need to tell people Alzheimer's exists. You need to tell people the difference of getting an early diagnosis versus a late diagnosis, because physicians may be able to do something for you if treatment is started early in the progression of the disease. You can also make choices for your future, such as entering a clinical trial.

CEOFO: *Are you seeking funding or partnerships?*

Dr. Rossetti: We are currently in the Seed stage and we are now in the process of getting a couple of partners; one of which is a CRO.

CEOFO: *Have similar ideas been tried in the past?*

Dr. Rossetti: This is a completely new generation system. On the market right now there are some iPad based test for the cognition state. With these tests the user has to reach a facility and in front of a doctor take the test, and most of the physicians are still using the pencil and paper tests. They are now trying to use electronics, but nothing like our system. Therefore, we are one step ahead.

CEOFO: *Very exciting times for CogMaze Diagnostics?*

Dr. Rossetti: It is very exciting times. In fact, we are trying to move as fast as possible.