

Dr. Matteo Cestari, Omnitech.

*Williamson . Good morning everyone a very warm welcome to you. All. Thank you for joining us from the Scuola di Robotica of Genoa Italy. My name is Robin Williamson and today I have the honor of being joined by M. Cestari who is the CEO and founder of Omnitech. Thank you very much for joining us today and thank you my first question for you today is to introduce you and your company.*

Omnitech was born 23 years ago, we operated for Telco operator in telecommunication and we develop software and other services. This is the main business of Omnitech. Then three years ago we found a start up about robotics and we were involved in using social robot assisting elderly people.

*Williamson - Recently during the Covid pandemic your company supplied robots to the Hospital in Varese. Could you tell us some more about this, please?*

Cestari - We received a help call in the deployed all the robots that could be employed in this situation, a team of robots, six robots, with only one control, to assist physicians and health operators in the Hospital to check for patient data, to communicate with patients. In that period there were not enough DPI (Personal Protective Equipment) and not enough operators to assist COVID patients.

The six robots in six different rooms were controlled by only one desk console, and the robots were assisting 12 patients.

Williamson – The robots were employed to assess the medical conditions of the patients?

Cestari – Not really, these are not medical robots but social robots. By these robots that were in the patients 'rooms it was possible to easily communicate with the patients and to see what it was happening because physicians need to control if the patient had the mask, his/her oxygen level, and for the patient the robot was an important presence in the room. Though the robots patients could speak to physicians and operators.

*Williamson - How were the robots accepted by the patients? Did they enjoyed the robotics presence?*

Cestari – Yes, because everyone understood that it was useful, that the robotics presence was a channel from the room to the outside world.

We chose small robots because we wanted to avoid the Uncanny Valley problem, that is the case when a robot is too similar to a human and it could arise mistrust and suspicion, and the Human-Robot relationship is more difficult. It was better to use robots shaped like a toy.

*Williamson -- With these robots was it possible for the patients to communicate with their families?*

Cestari – Not in Varese, but now we are developing a robot that has the possibility to reach the patients in every part of the hospital to allow him/her to speak directly with the family without the intervention of an operator. In this, robots have to be autonomous, they cannot be another problem and duty for the operators in the hospitals.

*Sure. Can you tell me the other situations in which you deployed your robots in addition to these assistive missions?*

Cestari – In collaboration with Prof. Silvia Rossi from the Università di Napoli Federico II we deployed an in-house robot for elderly people. In the care houses for elderly there are people who don't remember their daily routine. Our robots remind them about the daily routine, when to eat, when to take the medication. Of course, human would be better, but if this cannot be, the robot can be of help.

Today's technology is not so advanced, but it is important to help elderly people with some technological assistance.

*Williamson – I understand that Omnitech has its own platform, Vivaldi is it called?*

Cestari – Yes, it provides the Linear Programming for robots to be able to decide what is the right decision for the robot.

One of the problems robot have is that they received a lot of input and, like in a symphony the sound is organized to produce a beautiful music, so it is with robots, we have to organize a way to collect all these inputs. We need to orchestrate all the situations to make the right decision.

We are developing the Vivaldi platform with machine learning techniques and all the time we are learning new concepts, that are not about robot but about humans.

*Williamson – Can you give us some examples?*

Cestari - In nursing homes we use robots in which we have formed a "gender", so that depending on whether they have to interact with a man or a woman they can change the language they use.

A lot of time elderly people want to care about robots (along the so call "Doll effect" in case of patients with Alzheimer, they start an interaction with a toy)

*Williams – What are the next project you are working on?*

Cestari – We are developing our Artificial Intelligence, for different situation. We are like a child, growing, opening his eyes on the world, wanting something more, and discovering.

For example, when we started to use robots we discovered that the robot does not have to interact too much with humans. Then, more and it can increase the interaction, but to start an interaction with the patient few interactions were enough.

What we really have understand is the impact of robots on humans.