Varian Medical Hungary challenge

Prevention and early detection of cancer

Introduction to the challenge

Between 30% and 50% of cancer deaths could be prevented by modifying or avoiding key risk factors and implementing existing evidence-based prevention strategies. The cancer burden can also be reduced through early detection of cancer and management of patients who develop cancer. Prevention also offers the most cost-effective long-term strategy for the control of cancer (WHO - Cancer).

Early detection of cancer greatly increases the chances of successful treatment. The 2 components of early detection of cancer are early diagnosis (or downstaging) and screening. Early diagnosis focuses on detecting symptomatic patients as early as possible while screening consists of testing healthy individuals to identify those having cancers before any symptoms appear (WHO - Screening and early detection).

At all stages, barriers can reduce patients' chances of being diagnosed and treated quickly. These include poor cancer awareness among the public; suboptimal knowledge at the primary health care level about cancer symptoms and/or adequate diagnosis follow-up; poor accessibility; low affordability and/or quality of diagnosis and treatment services (waiting lists, errors in diagnosis, etc.); and the many logistical, financial and psychosocial barriers preventing patients from accessing services rapidly (WHO - Barriers to early diagnosis).

So here comes the challenge:

You as a hacker, developer, engineer shall develop an application that helps reduce the number of cancer patients by providing prevention strategies and improving early detection. A few ideas to start your brainstorming:

Prevention: lifestyle, micro-macronutrients, genetic risk factors, environment, red flags, positive reinforcement, social and psychological factors.

Early detection: screening, reminders, calendar, patient-doctor communication, community, medical history, scientific, professional help, affordability, access.

You must consider the usability aspects of the application:

- who are the users
- what ages are we targeting
- how they (the patient and the care team) can use the application

The user shall be able to give input about his/her statuses, the ones which are measurable and the ones which are simply free-text answers. The application should give a certain decision or outcome based on the given values.

Solve our challenge and join us in **FIGHTING FOR A WORLD WITHOUT FEAR OF CANCER**!

Who we are

At Varian, a Siemens Healthineers company, we envision a world without fear of cancer. For more than 70 years, we have developed, built, and delivered innovative cancer care technologies and solutions for our clinical partners around the globe to help them treat millions of patients each year. With an Intelligent Cancer Care approach, we are harnessing advanced technologies like artificial intelligence, machine learning, and data analytics to enhance cancer treatment and expand access to care. Our 10,000 employees across 70 locations keep the patient and our clinical partners at the center of our thinking as we power new victories in cancer care. Because, for cancer patients everywhere, their fight is our fight. For more information, visit Varian.

What we will provide

Competitors will be supported by various software developers and product managers from the medical domain to answer healthcare-related questions.

Implementation and technology

There is no "technical" limitation, you can choose whatever languages/platforms/tooling you want to use.

Judging criteria

For the evaluation process we will use the following matrix:

Steps	**Points 0 - 10**
Step 1: Applications' features and effectiveness in prevention and early diagnosis	
Step 2: Applications usability and user experience	
Step 3: Your creative idea which can burst the workflow	
Step 4: Presentation – Presenting the killer product idea	

Prize

The winning team of the Varian challenge will take home 1,500 €.