Healthcare education for Africa

Challenge

Of the world's regions, sub-Saharan Africa has the highest percentage of communicable diseases, such as HIV/AIDS, tuberculosis and malaria. Health service coverage is low and the region faces a serious health workforce crisis. With such a low number of trained health professionals in the region, there is an urgent demand to make healthcare information accessible to the general public. In addition, the healthcare workers may not have direct access to the latest medical research. Several challenges have to be overcome to improve this situation.

Large portions of the population live in remote areas with very poor-to-non-existent technology infrastructure. Many health workers do not receive any computer training during their medical training; those from rural school my never have even used a computer. On average, less than 60% of the total adult population in sub-Saharan Africa can read and write with understanding. Furthermore, there are many different languages in use across the region; South Africa alone has 11 official languages.

Our aim is to utilise modern technology (such as mobile phones and satellite networks) to improve this situation, together with our industry partner from SES ASTRA and in close collaboration with the Hasso-Plattner Research School at the University of Cape Town.

SES ASTRA operates the ASTRA Satellite System, offering broadcast and broadband solutions for customers in Europe, Middle East and Africa. ASTRA is part of the SES Group which is operating one of the largest satellite fleets in the world, reaching 99% of the world's population. SES ASTRA is keen to support this cause and has offered the use of unused bandwidth in their satellite system to deliver health information to remote areas in Africa.

Together with the researches at the Hasso-Plattner-Research School at the University of Cape Town, this bachelor project should use this opportunity, following a user- and demand-driven approach in order to enable and support access to information and knowledge for African health workers and citizens, targeting well-identified local needs and health priorities relating to existing initiatives. Technical solutions should be based on open standards, interoperable systems and services, modularity, and off-the-shelf components, taking the special requirements of the region into consideration.

Tasks

1. Investigate current initiatives, strategies and technical solutions in the area of eHealth for Africa
2. Analyse the requirements in the context of eHealth for Africa and identify possible sources for healthcare information
3. Develop an architecture that allows users to:
    a. Upload digital content such as videos and presentations
    b. Manage the digital content in an intuitive way
    c. Provide the content to clients over the satellite network of SES ASTRA
    d. Support different clients depending on the requirements found in (2)
    e. Handle different roles and enforce authorisation rules
    f. Collect statistics
4. Implement a proof-of-concept for validation and demonstration purposes

What's in it for you?

- Gaining extensive knowledge of Internet technologies and security mechanisms
- Gaining experience in software development from requirements analysis through to the implementation of a prototype, in the context of a real world use-case
- Opportunity to work with international partners

Partners

SES ASTRA

HPI Chair Internet Technologies and Systems

HPI Research School at the University of Cape Town