Improving medical training while lowering cost and increasing accessibility

3fs, an IT solutions provider based in Slovenia, provides high-traffic, cross-platform, front and backend solutions for the worldwide IT market. 3fs has worked with some of the industry’s most respectable leaders such as Ericsson and Nokia. The company also founded four highly successful subsidiaries to address domain-specific markets—including TrickyTribe, a boutique games studio, and Iryo, a healthcare application platform.

As a longtime Microsoft partner, 3fs uses a broad scope of Azure cloud technologies and has recently added a Microsoft Cloud competency to its resume. When dealing with its most demanding and challenging clients, 3fs frequently turns to Azure services to help solve their most difficult problems.

3fs has also developed two applications on the Windows Mobile Platform, including Toshl, an expense tracker, and Toonia, a digital coloring book whose development was financially supported by Microsoft.

Combating the rising costs of traditional medical simulations

The high costs associated with traditional medical simulations had become an issue for the Simulation Centre of Ljubljana as the reproduction of these scenarios and their accompanying environments demanded significant time commitments and money.

Teaming with 3fs to develop a modern software solution

Looking for a more accessible and cost-effective solution to deliver anaphylactic shock training, the Simulation Centre of Ljubljana partnered with 3fs to develop AWAKE, a HoloLens-based simulation prototype.

Combating the rising costs of traditional medical simulations

The Simulation Centre of Ljubljana is the first healthcare simulation center at the primary level to exist in Slovenia. The organization uses tutorials, advanced simulations, and the most modern technology to provide unique educational opportunities in the healthcare sector.

The Simulation Centre of Ljubljana was recently looking to improve the training regimen for those responding to cases of anaphylactic shock. Traditionally, there have been many pain points in the training process for treating anaphylactic shock, possibly creating barriers to those trying to learn the necessary response techniques. A major pain point was the industry’s outdated approach, which used rubber mannequins that were too generic to produce an authentic experience.

The high costs associated with analogue simulations also became an issue as reproducing scenarios and environments demanded significant time commitments and money.

These costs limited who could afford the training and where training could be conducted. Acquiring storage space for the props involved created further challenges.
As a result of these costs and challenges, accessibility became a major issue. As trainings were only available at institutions that could afford it, targeted groups would often need to travel across the country to receive instruction.

**Teaming with 3fs to develop a modern software solution**

Looking for a more usable and cost-effective solution to deliver anaphylactic shock training, the Simulation Centre of Ljubljana partnered with 3fs to develop AWAKE, a HoloLens-based simulation prototype. Using advanced rendering, AWAKE can make clinical simulation more believable and immersive using mixed reality to mimic the environmental stresses involved in real life situations.

In order to create the most lifelike simulations possible, 3fs developed algorithms used in the AWAKE engine that enabled an extensive array of wanted and unwanted clinical outcomes.

3fs also created authentic 3D models of patients in order to display lifelike expressions and symptoms to strengthen the training experience. 3fs worked directly with leading instructors across multiple iterations of the solution to ensure the final experience was medically credible.

The AWAKE solution is more cost efficient than traditional learning techniques due to the use of digital assets that eliminate the need for large storage and training environments.

With the mobility of a HoloLens headset, the AWAKE solution is also much more accessible across geographies and isn't limited to a clinical environment.

**Building the future of medical simulations**

Since implementing AWAKE in September of 2018, the Simulation Centre of Ljubljana has trained over 1,033 candidates.

The AWAKE solution has contributed to a drop in the time needed to conduct first-aid training from one hour per candidate to just over 12 minutes.

The time needed to perform professional training for vitally endangered patients with anaphylactic shock has dropped from 5 hours per group to 1 hour.

The latent security risks factor, has dropped from 14 cases in 60 groups examined in 2015 to 5 cases out of 60 groups examined in 2019. Of those who've used the AWAKE solution, 93.93 percent of 1,033 trainees have rated it as “excellent.”

The Simulation Centre tested the incoming knowledge of medical staff and tested medical staff upon completion of the AWAKE training solution. The Centre found that participants had increased their knowledge of anaphylactic shock treatment by 60 percent.

According to executed tests by using AWAKE the outcome knowledge is 60 percent better as it was the income knowledge.

Using AWAKE, the Simulation Centre of Ljubljana has achieved its goal of efficiently reaching a broad international audience of medical professionals and trainees with a truly immersive, believable, cost-efficient, and mobile experience.

“With AWAKE we can produce authentic environments and believable experiences in which candidates can test their knowledge almost as they could do in the real situation. This means that they get much better qualified to make life saving decisions when this is the most important.”

— Uroš Zafošnik, Lead Instructor, Simulation Centre of Ljubljana

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