



Martin Knapp testing their Augmented Reality pilot app on a Jenbacher gas engine.

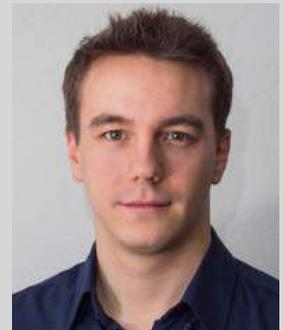
Using augmented reality to turn the smartphone into an X-ray machine

In augmented reality, the real world is augmented with virtual information, offering interesting possibilities for corporate education, such as performance support in logistics and machine training. In his presentation at LEARNTEC 2019, Martin Knapp shares insights into the introduction and use of augmented reality at INNIO Jenbacher GmbH & Co OG.

eLearning Journal: Good day, Mr. Knapp. Could you please introduce yourself and your activities at INNIO?

Martin Knapp: As a project manager in the training department, I primarily focus on the introduction and continuous improvement of our training technologies and systems. These are utilized for planning, creation, and execution of training sessions for our two product lines, Jenbacher* and Waukesha*. Our company, INNIO, is a trailblazer and an integral part of the energy transformation, pro-

viding solutions in gas engines and complementary services in the field of energy generation and gas compression close to the consumer. Globally, we can support the more than 48,000 gas engines we have delivered throughout their entire lifespan. At the INNIO Product Training Center, we assist our employees, end customers, and our global service technician and sales network in developing the relevant skills and knowledge necessary for the optimal utilization of our gas engines,



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eLearning Journal: In your presentation at LEARNTEC 2019, the topic is "Augmented Reality." In your experience, what specific added values can Augmented Reality offer in corporate education?

Martin Knapp: *Personally, I started delving into the topic of Augmented Reality (AR) about three years ago, around the time when the first AR apps like Snapchat gained popularity in Europe. I was already impressed by the precision of virtual overlays and quickly became convinced that, beyond virtual dog masks and capturing Pokémon, there are numerous business-relevant use cases for AR.*

Subsequently, I downloaded over 50 different business-focused AR apps from public app stores to determine which applications and scenarios work best from a user's perspective. After comparing several AR frameworks, I developed our first AR pilot app, conducting various tests with this new technology. We applied markers (unique patterns similar to QR codes) to objects and played short instructional videos on mobile devices. We found that video overlays, in particular, represent a good compromise in terms of creation effort, added value, and, most importantly, learning success.

The "XRAY" use case, which involves virtually examining an object, provides learners with new opportunities to visually experience the often verbally challenging internal workings in a real environment. It was also observed that the technology itself excited individuals, leading even those who might not have engaged through conventional channels to interact with the content.

eLearning Journal: Are there typical stumbling blocks or obstacles (e.g., technical infrastructure) that can complicate the introduction of Augmented Reality?

Martin Knapp: *As with all technological innovations, the first step should be to validate whether the technology actually provides value. This helps to avoid investing a significant amount of money and time in developments that may not be advanced enough for practical use. In our case, we pre-filtered and prioritized potential use cases and approaches by experimenting with apps from public app stores and developing our prototypes.*

Furthermore, it's essential to evaluate the pros and cons of different content types, such as 3D objects, images, or videos, in terms of creation effort and their contribution to achieving defined goals. For instance, we consciously chose animated videos with voiceovers, as they offer higher value in knowledge transfer during self-study compared to pure 3D models, which often float silently in space. Additionally, these videos can be easily reused across various channels like YouTube, social media, and other training materials..

Learning Journal: Are there training needs or areas where Augmented Reality is particularly suitable? Conversely, for which topics is Augmented Reality less suitable?

Martin Knapp: *I think that interesting applications can be found in many areas fundamentally. In our case, we chose the first major use case based on the number of potential users: Understanding the basic functioning of*

an engine is interesting for both customers, colleagues, and potential employees. Where AR is less suitable is for conveying a large amount of learning content, as the creation effort is currently often too high compared to traditional media and distribution methods..

eLearning Journal: What acceptance has the use of Augmented Reality encountered in your company? Were there concerns before the introduction, and if so, how were they addressed

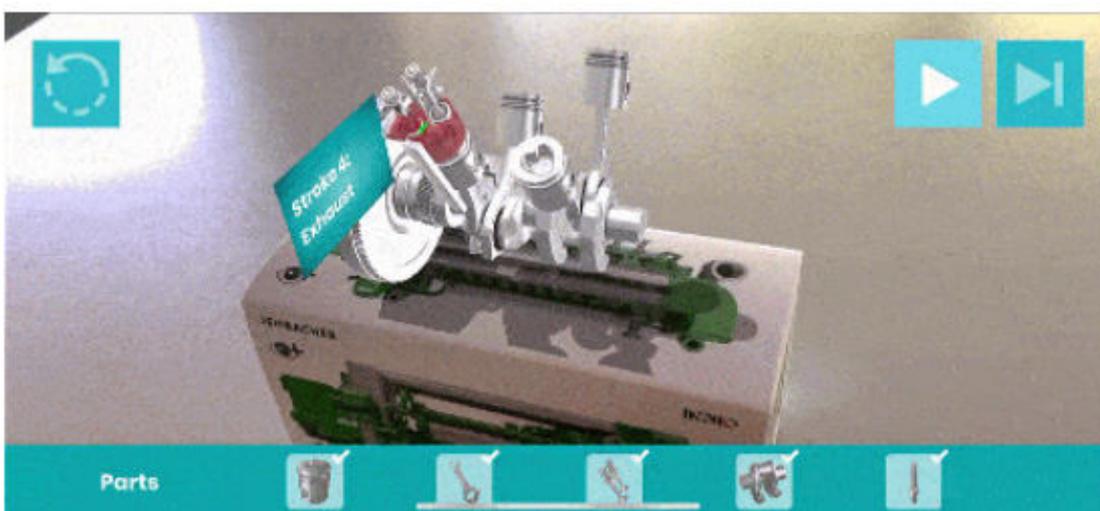
Martin Knapp: *An interesting realization was that many users found the technology so fascinating that they not only used the app themselves but also showed it to colleagues, friends, and family. This multiplier effect led to an increase in overall reach. Concerns were raised regarding the complexity of multimedia content. Virtual disassembling of a gas engine and explaining technical processes inside in a simple manner indeed proved to be a real challenge. However, with our motivated project team and strong partners, we managed to overcome these challenges.*

eLearning Journal: Do you plan to introduce additional Augmented Reality-supported learning experiences in the future?

Martin Knapp: *We designed our app to be modular from the beginning, allowing us to integrate additional learning experiences in the future with reasonable effort. Overlaying further content on a real gas engine, in particular, is a very intriguing use case that we intend to explore more extensively.*

eLearning Journal: In conclusion, why should one by no means miss your presentation at LEARNTEC 2019?

Martin Knapp: *Apart from providing intriguing insights into the creation process and our experiences in idea generation, content development, global rollout, and a live demo, you also have the opportunity to try out the app yourself on-site. My colleague Peter Hall and I look forward to your questions and additional feedback on our INNIO Learning Experiences App.*



To watch App-Demo check out:
training.jenbacher.com/app