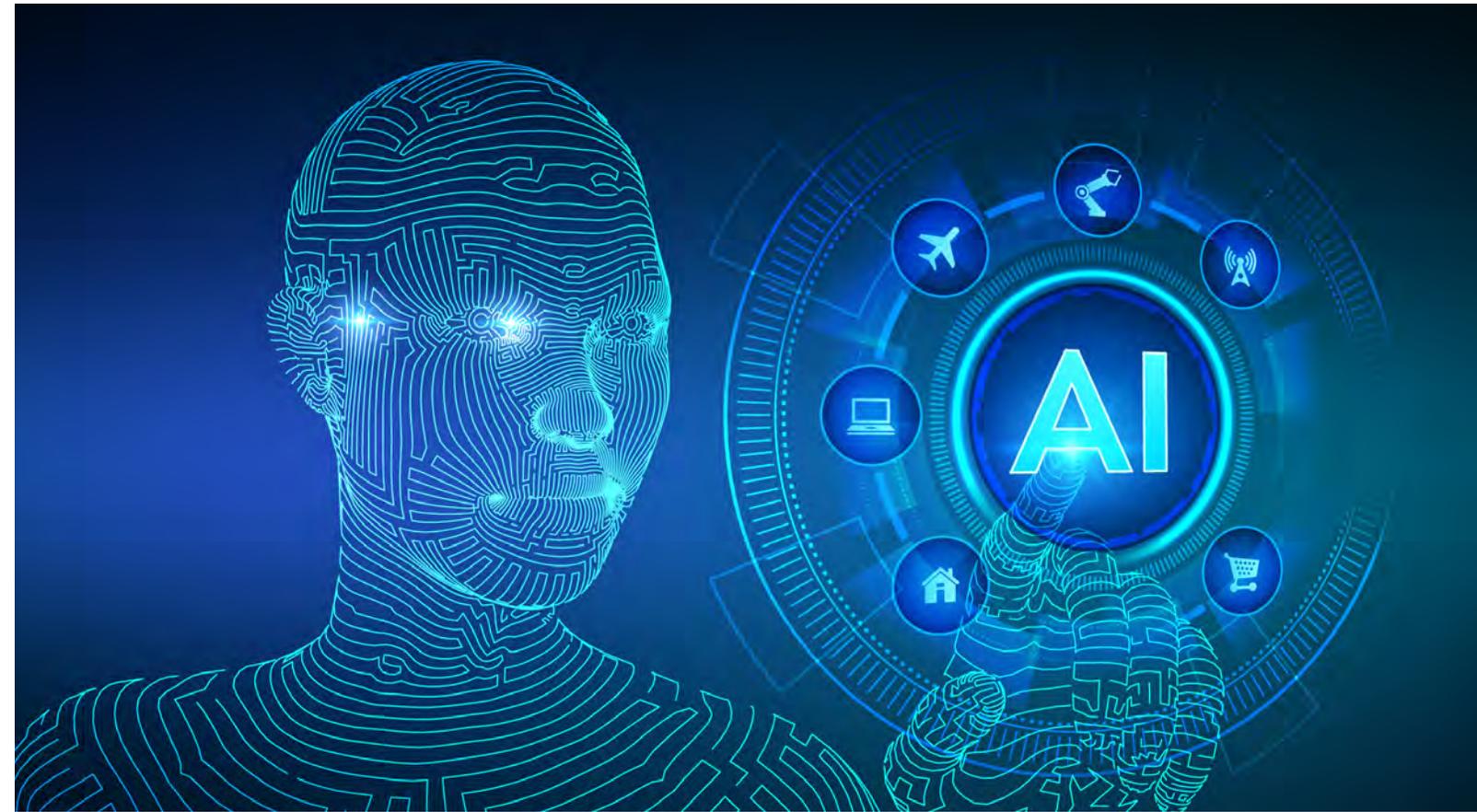# GLOBAL BUSINESS RESEARCH

Transferring Knowledge - Driving Innovation

GBR INSIGHT
INDUSTRIAL APPLICATIONS OF MIXED REALITY 3D AI HOLOGRAMS

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Nowadays, the progress of digitalization is hardly imaginable without Artificial Intelligence (AI). The technology is increasingly used to locate problems, find solutions, and make fact-based recommendations for decisions. As time goes on, the AI algorithms develop more and more their abilities to learn by themselves and to improve continuously from case to case. In this context, the quality of the dialogue between humans and machine, the so-called HM interface, plays an increasing relevant role.

We anticipate that the market for AI is estimated to grow at a significant rate during the forecast period from 2020 to 2025, within this market the "Conversational AI" will grow to a multi million dollar segment by 2025. The ongoing fast proliferation of the Mixed Reality (MR), AI Chatbots over the last months appear to confirm this statement. Numerous examples especially from B2C industries such as banking, finance, insurance, healthcare, retail, and e-commerce show how AI-based conversation interfaces are rapidly changing the interaction of customer services.

AI conversation solutions such as Amazon's Alexa, Apple's Siri, the virtual Google Assistant are experiencing an increasing acceptance. Chatbot applications that use natural language processing to communicate with users and carry out instructions are now widely used on consumer messaging platforms such as Facebook Messenger, WeChat and so on.

The rapid development of artificial intelligence in recent years, especially machine learning, natural language processing, image & speech recognition, has promoted dialogue-oriented AI applications that allow users to interact with manufacturers and service providers.

Conversational AI is now able to perform various tasks, such as answering customer queries, booking flight, train, bus, events tickets, assist with shopping, recommending products, organizing business meetings, checking the booking status of your ordered items, providing information about the weather, news and entertainment. Many companies are increasingly using dialogue-oriented AI software to provide instant online help to improve online conversion rates to offer for sale. My Starbucks Barista app allows customers to place orders via messages or voice commands like Domino's Pizza an American pizza company that uses Facebook Messenger Chatbot.

The B2B segment is slowly but surely catching on. As expected, the automotive industry is proving to be a pioneer of new technologies e.g. the Ford Motor Company uses Amazon's Alexa in selected models to check fuel consumption and tire pressure and generally to improve overall maintenance and the customer experience. All these examples rely on the free APIs of tech giants like Microsoft, FB, Amazon, IBM, Kik, Slack, etc. who have supported early adopters and entrepreneurs to innovate and invent a myriad of new cases. Despite the huge progress achieved the limitations of open source code are becoming tangible following the ever-growing amount of large and complex information in local languages in a global economy.

Interestingly in recent times, it looks like start-up companies are taking the challenge head-on by making their mark with visions and innovative ideas. The AI components of their proprietary source code is the key element contributing to improve to automate the production of "bot brains". The current situation of the global economic crisis is proving to be an additional catalyst for the progress of complex mixed reality installations.

In response to curb the frightening COVID-19 spread of infection, an independent European bot developer is pushing the boundaries of cognitive interfaces to help mitigate the crisis. In spring of 2020, AI Bots as a Service, AI BaaS, a company headquartered in Munich, added motion activation to its Mixed Reality installations or voice bot holograms and animated 2D chatbots on screens.

"With the pretty much unexpected and extremely rapid outbreak of the Coronavirus in Europe, we realised that we could enhance our voice-based tech feature so that people do not need to touch a screen and so risk catching or spreading the disease – it also rescues businesses that need to provide new levels of safety and protection for its staff and customers."

Dr Tania Peitzker, CEO & Co-Founder, **AI BaaS**

This means that instead of just using a predesignated "wake word" like Amazon's "Alexa", "Hey Google / Siri / Cortana / Snips / Bixby" or BMW's dashboard bot's wake up name, the AI BaaS bespoke avatar of choice simply awakens itself when it detects a human close by.

The biggest coding challenge is multilingual Conversational AI that works well in public spaces with customised avatars capable of random, unsupervised conversations with anyone at all, about anything, anytime 24/7. AI BaaS has trained past beta bots in multiple language options, often engaging students, and graduates from dozens of countries to test and train the chatbots in their mother tongue.

They put this to the test as the first, "public facing" pilot in a shopping centre in Cologne, Germany in April 2019 and demonstrated the amazing potential of this technology, the AI bot was called Amalia I. Amalia I learnt all that was to know about the 30 shops and their services, proactively made shopping suggestions, giving directions to the loos, the food court, exit to the U-Bahn, informed about upcoming events and the local weather in real-time.

However, the most impressive skill was the way she continuously improved her ability to also understand shoppers speaking German with a heavy accent or inaccurate grammar, Amalia I began to understand Koelsch, the local dialect, though she replied in High German.

Since then, Amalia has gone through 3 iterations. Their prized innovation, a 3D hologram called Amalia IV will be launched in Q3 2020. "COGX AVATARS™ TOUCH FREE MIXED REALITY", their brand new, boutique Cognitive Interfaces is starting to develop applications for B2B industrial environments focusing on segments like Manufacturing, Industrial Maintenance and Reliability and Health, Safety and Environment.
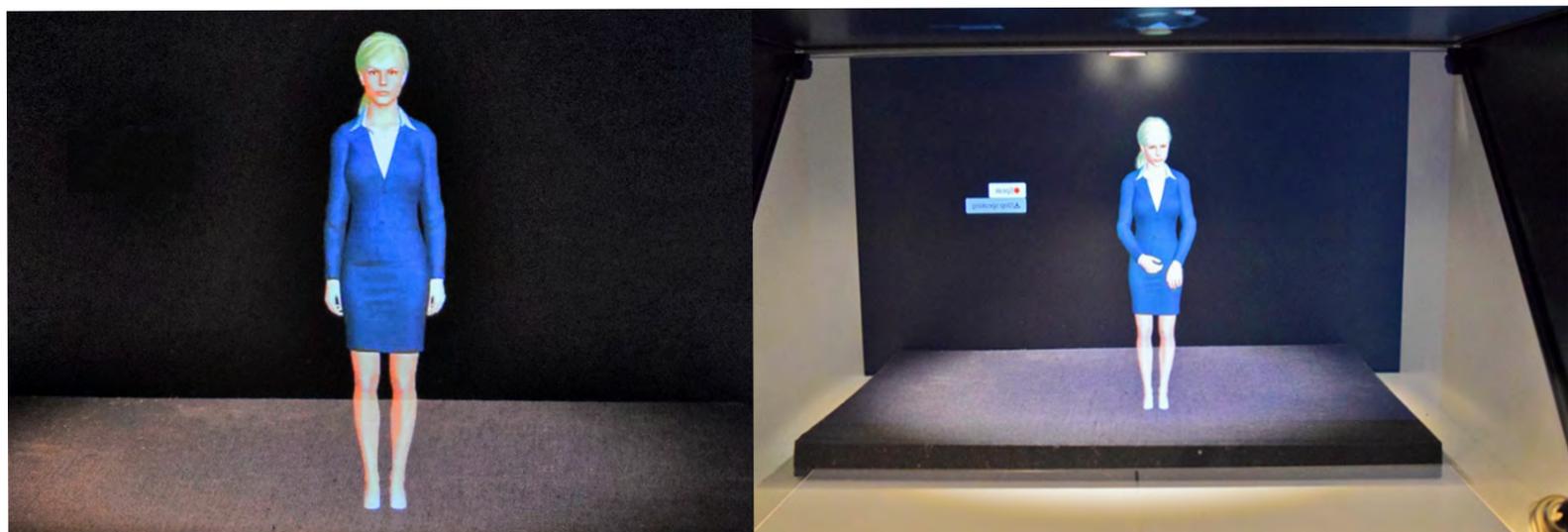
WHAT NEXT?

The holy grail behind is the general AI which would be injected in mixed reality bots making those to "think" and move like us and more importantly make decisions like humans with a combination of reason, rationality, emotional intelligence, moral understanding, logic and soon, even a dash of intuition. These AI bots will learn from mistakes and self-correct themselves.

The advanced bots as an evolutionary technology step are on their way to revolutionise the industry. Many of these AI bots use unique bot languages, completely new codes that were developed in-house. They have valuable IP, quality of performance, stability, and scalability. The best of them use true artificial intelligence and machine learning or neural networks. The demand of paperless manufacturing is real – not only where machines have touchscreen interactivity, imagine the benefits of botifying industrial machinery manuals in over 130 languages and replacing tons of paper booklets of "how to fix" problems. The solution will be focused on adding voice to all plant equipment enabling the staff around the world to fix the machine by simply talking to it.
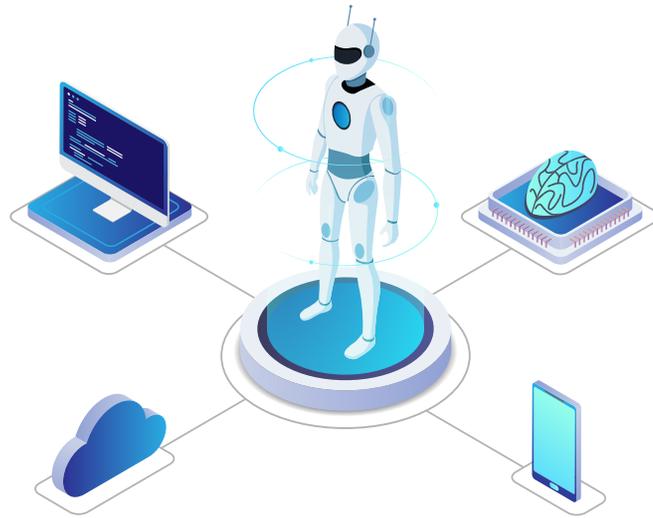
Further use-cases can be on health & safety, or even quality control. Atypical events can be detected by the bot, and directly communicated to an operator or quality officer. This would decrease response times and prevent prolonged downtime or manufacturing rework.

Especially in critical situations like supporting maintenance staff on oil rigs or at isolated manufacturing locations to fix difficult downtime issues in real time or rescuing factory & warehouse workers in a fire, the "humanoid" avatars will demonstrate their full capabilities. They will provide emergency instructions, ensure seamless communication with remote safety services, and overall do everything possible to keep control. Chatbots and avatars will fundamentally change the relationship between humans and technology. A new age of productivity has started and we for sure are excited to see how the crossover of AI bots pan out in the coming years.

ABOUT THE AUTHOR

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Alexander Demmer heads up the Digital Transformation piece at GBR and is responsible for orchestrating the content & connectivity on IIoT, Digital Transformation, Industry 4.0 and Future Technologies segments.
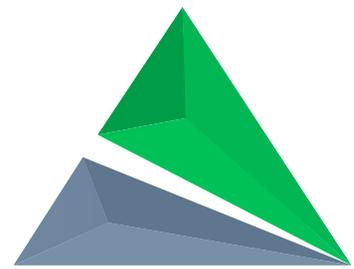
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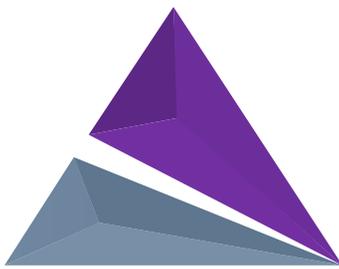
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