Problem statement for CoE in Emerging Technologies – AR/VR

Emerging Technologies such as the Augmented Reality (AR) and Virtual Reality (VR) technologies are moving from the lab to the commercial space. Training of all types is the most important potential use of AR/VR. It could be high end training of aircrafts, military and space environments; industrial training of manufacturing processes and equipment or school and college level training. Interactive and immersive trainings can make school and college curriculum more interesting.

In future rather than using manual for maintenance and repair of vehicles, people may use Augmented Reality based application which are more interactive. Travel industry can help the tourists to take virtual tours of the places they want to visit later. The experience of online shopping can also be improved by AR/VR. Thus, the related technologies have a lot of market potential especially in sectors such as healthcare, education, medical, agriculture, tourism, sports, etc.

Some of the sample problem statements where AR/VR can be implemented are given below.

1. Showcasing of heritage sites

The Palace of Kangla is an old fort at Imphal in Manipur (Kangleipak). It was the traditional seat of the past Meetei rulers of Manipur. Although visiting the site can give a feel of the campus people can't feel the depth of history of Kangla and Manipur. Through AR / VR, one can showcase the various tourist spots inside Kangla- its history over the years, the stories, the old pictures and changes that have come. This information will be augmented on top of the real world.

This kind of project will be the first of its kind in Manipur and entire north east. Subsequent work can be expanded to other tourist places.

2. AR/VR in Real Estates

Website does not give the exact feel of the property displayed by the realtors. Many a time, the prospective buyers reject the property which could have been their desired requirement merely by looking at the pictures and also the potential buyers are left with unanswered question which could not be answered by just photos and details. Virtual presence of the property in realtor's website can highlight Points of Interest (POIs) that give potential buyers a better understanding of the property. AR / VR technology can immensely improve the experience of the buyers and boost sale of the realtors.

3. AR/VR in e-Commerce

Although online shopping is continuously growing, customers still prefer brick & mortar shopping to have the feel. These problems may be answered with integration of AR / VR technology in online shopping.

4. AR/VR in Healthcare Psychological Relief and Treatment

Immersion factor also opens up a gateway towards new ways of therapy. For example, an elaborate virtual reality environment can be used for pain reduction and improvement of sleep habits. Also, VR can be used to help amputees to get accustomed to their state and

experience once again their missing limbs. On the other hand, specific environments can be used to treat the mental condition, such as anxiety, various kinds of phobias and addictions.

Through AR / VR, real time experience may be used for training of medical personnel. Different scenarios may be created for experiencing the case study. AR / VR have wide scope in the field of medical teaching and experience even for a person in remote location

5. Use of AR/VR in Education sector

One of the most promising areas for AR/VR technology is in the education sector, where the shortage of teacher or a trainer can be overcome. Immersive technologies like AR / VR and Mixed Reality will become the new engines of value creation in the experience economy.

6. Image building and brand building

Companies and brands are investing a lot of money in image building and brand building. Some of these can be done through immersive experience using AR/VR products. It will enable far more effective storytelling for brands and businesses, drive greater efficiencies with product prototyping in manufacturing and beyond, facilitate training at scale, anytime, anywhere, to name just a few use cases. In addition, rising applications of VR in e-commerce industry and increasing sales of AR embedded luxury cars is anticipated to augment demand for AR & VR based products

7. Training in Defence Industry

Defence industry can be the largest end-user of AR & VR products on account of increasing use of AR / VR for training purpose and for displaying information such as aircraft speed, altitude, horizon line, etc. Rising defence budget of the country is expected to further boost adoption of AR & VR based products over the years. The start-ups may engage with Ministry of Defence, to start trials for such products.

8. Tagging handloom products with AR

Manipur enjoys a distinct place amongst the Handloom zones in India. However, the handloom products are not known to many outside the state. Some of the villages like Wangkhei, Bamon Kampu, Kongba, Khongman, Utlou etc. are famous for their weaving skills of intricate designing of fine silk items. The rest of the villages of the State produce different varieties of fabrics. Tribal shawls with exotic designs and motifs are the products of the hill districts of the State. AR / VR technology may be utilised to further enhance the design and quality of the products. Through emerging technologies, these unique products may be promoted to different level of success.

9. Use of AR technology to find out place.

Though online maps have made their own level in today's world but a 2D map can be confusing many a times. Integration of AR / VR technology with these maps will make the things a lot different.

AR / VR implemented maps of a campus or big complex can make it lot easier for the visitors to get acquainted with the place.