



# UNDERSTANDING AUGMENTED REALITY (AR) GAME AND ITS IMPLICATIONS ON SECURITY

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Amongst the plethora of essential roles of media like informing, mobilising, educating, etc., one important role is that of the 'entertainment'. The value of media as an entertainment industry worldwide runs into billions, and carries with it both positive and negative sides. One negativity which is currently subject of many debates across the globe is the Augmented reality (AR) mobile game 'Pokémon go.'

Distinctive from the world of virtual reality, where the person is exposed to computer generated imagery, the AR, overlays data and graphics over a live or mediated video of the physical world, thus combining the physical and virtual within the same frame.<sup>1</sup> In simple terms, the technology is designed to superimpose user view with the pictures developed by the computers, thereby creating a blend of real and virtual world for the user. It provides a

superimposed 'perception of reality', which is augmented.<sup>2</sup> The foremost objective of AR is to facilitate a user to carry out sensory- motor and cognitive activities in a new space by associating the real environment with a virtual environment.<sup>3</sup>

In the VR technology, the user gets an impression that he has entered new surroundings all together, and he can access information by imitating that three-dimensional space.<sup>4</sup> This technology is fundamentally immersive in nature, which means, that with the help of technology and related gadgets like headgears or set, the user's consciousness experiences an impression of immersion, where his awareness of the physical self is diminished or lost by being surrounded in an engrossing total environment; often artificial.<sup>5</sup>

On the other hand, AR technology doesn't try to cut the umbilical cord of the real from the user. So, the layers of computer-generated enhancements are set upon the existing reality, in order to make it more meaningful and interactive.<sup>6</sup> From the digital perspective, where the VR proposes a digital reconstruction of a real world and immerse individual in it, the AR on the other hand inserts the digital information in the actual environment in such a way that the virtual elements overlap it.

### Case Study: "Pokémon GO"

'Pokémon GO' which is developed by the US based Niantic, Inc. is a 'free-to-play location-based AR mobile game. Based on the two-decade-old fictional creatures created by Japanese video game designer and founder of Game Freak Inc., Satoshi Tajiri, 'Pokémon GO' has triggered various narratives across the world regarding the implications of AR. While the gaming industry is claiming it to be one of the most successful games of its time, its security implications too have been commented upon.

At a micro level, i.e. an individual level, the AR game can place an individual's personal safety into jeopardy. In the craze of finding the computer generated images superimposed on the real world, there have been incidents reported by media that individuals, immersed in the game and disconnected from reality, have led themselves to unknown areas putting their safety into risk. This threat was echoed in the

report of security software company *Trend Micro*, which highlighted that while immersed in the game, the user became more vulnerable to a hazardous situation, costing him his limb and life. Occurrences like accidents, robbery, trespassing have already been reported in the media.<sup>7</sup> Also there are many fake games app, disguising themselves as the original game, which can pose threat to an individual system, which can come under pernicious malware assault. Furthermore, users' digital lives are under continuously fear of hackers, who can hijack users' smart phones in concealment of the AR game.

At a macro level, the AR mobile game has also drawn flak from religious groups, with Saudi Arabia's dominant clerics, again reviving its 2001 decree or *fatwa* against 'Pokémon GO'. On 20 July 2016, the *Telegraph* reported that 'religious edict that warns against playing 'Pokémon GO' stating that the game defies Islamic restrictions and encourages "forbidden images".<sup>8</sup>

From a security perspective, the game was first banned in Iran due to security reasons. Vietnam has forbidden the users to play the game in the office arena and near defence establishments. As reported by *IFSEC Global* (online community for the Security and Fire industries.), US Central Intelligence Agency (CIA), the Gulf States and Data Security Experts have also flagged the security threats attached to the game.<sup>9</sup> The Pentagon has also asked its users not to use government provided cell phones to play

the game and refrain from restricted areas while playing it.<sup>10</sup> As per *Washington Times*, "A memorandum sent on 19 July 2016 warned all officials and defense contractors that playing Pokémon Go, the hugely popular Japanese video game, poses a potential of a security risk to secure and sensitive facilities."<sup>11</sup>

One argument which has been emphasised time and again while discussing the security concern is that as the superimposed images of the game were located in spaces of the real world, the users could breach certain premises, which could lead to security related issues. As the superimposed images are captured by mobile cameras, it not only gives the image of the place, but also the geo-location of the user. Lately, Pokémon GO has reinserted the "place of capture" geographic data into the game, which will act like tracking system. The move is described as advantageous to the user, as it will provide the specific location of PokéStop nearby, which its already existing 'sighting' feature offers vaguely. But this particular feature can also provide images of the areas, which can prove detrimental to the security of the area.

With regards to Pokémon Go launch in India, it is still awaited, and as per media speculations the game has already started losing its sheen. Nevertheless there should be a continuous endeavour to make Indian users aware about the pros and cons of the AR games. One has to bear in mind that the AR games are

here to stay, and to understand their implications on security, a well researched and documented proof is the need of the hour, as also a certain amount of responsibility from the users of the game.

***(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])***

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#### Notes

<sup>1</sup> "Augmented Reality." In *Encyclopedia of Video Games: The Culture, Technology, and Art of Gaming*, edited by Mark J. P. Wolf, 58. Vol. 1. London: ABC-CLIO, 2012.

<sup>2</sup> Hugues, Olivier, and Olivier Nannipieri. "New Augmented Reality Taxonomy: Technologies and Features of Augmented Environment." Edited by Borko Furht. In *Handbook of Augmented Reality*, edited by Philippe Fuchs. London: Springer Science & Business Media, 2011.

<sup>3</sup> Ibid

<sup>4</sup> Handa, M., Aul, G., & Bajaj, S. (2012). Immersive Technology – Uses, Challenges And Opportunities. *International Journal of Computing & Business Research*. Retrieved August 11, 2016, from <http://www.researchmanuscripts.com/isociety2012/12.pdf>

<sup>5</sup> Handa, M., Aul, G., & Bajaj, S. (2012). Immersive Technology – Uses, Challenges And Opportunities. *International Journal of Computing & Business Research*. Retrieved August 11, 2016, from <http://www.researchmanuscripts.com/isociety2012/12.pdf>

<sup>6</sup> Lindsay. "Virtual Reality vs. Augmented Reality." August. October 16, 2015. Accessed August 13, 2016.

<sup>7</sup> IANS. "Pokemon Go Is a Huge Security Threat, Says Security Firm." Gadgetsnow.com. July 13, 2016. Accessed September 20, 2016. <http://www.gadgetsnow.com/tech-news/Pokemon-Go-raises-users-security-safety-concerns/articleshow/53189610.cms>.

<sup>8</sup> Staff, 2016. "Saudi Arabia Renews Fatwa For Pokémon Go". The Telegraph. Accessed September 26 2016. <http://www.telegraph.co.uk/news/2016/07/20/saudi-arabia-renews-fatwa-for-pokmon-go/>.

<sup>9</sup> "Pokémon Go Security Risks Flagged By CIA, Gulf States And Data Security Experts - IFSEC Global". 2016. IFSEC Global. Accessed September 26 2016. <http://www.ifsecglobal.com/pokemon-go-security-risks-flagged-by-the-cia-middle-eastern-states-and-data-security-experts/>.

<sup>10</sup> Times, Military. 2016. "The Pentagon Has Banned Pokemon Go From Official Military | Military Times". Military Times. Accessed September 20 2016. <http://www.militarytimes.com/articles/the-pentagon-has-banned-pokemon-go-from-official-military-phones>.

<sup>11</sup> Gertz -, Bill. "Pentagon Bans Pokemon Go over Spying Fears." *The Washington Times*, August 11, 2016. Accessed September 20, 2016. <http://www.washingtontimes.com/news/2016/aug/11/pentagon-bans-pokemon-go-over-spying-fears/>.

