



● ● Adam Kaplan, CEO and Co-founder of Edgybees

AR technology and its future role ●●

Edgybees is a developer of augmented reality (AR) software designed to overlay video footage with curated information, for use with manned and unmanned devices with video capability to deliver a video feed that provides a wide range of actionable data to an operator. Adam Kaplan, CEO and Co-founder of Edgybees, discusses the nature of the software, its applications, and what role he thinks AR technology will fill in the future.

Laurence Russell, News and Social Media Editor, Global Military Communications

GMC: Edgybees is a relatively new company, founded in 2016 around delivering your augmented reality platform. Could you introduce your company to us?

Adam Kaplan: Interestingly, we started off as a gaming company. One of the first products we worked on was an ambitious augmented reality (AR) game assisted by drones.

Think of yourself flying a drone through a fantastical environment generated with AR, not unlike the Death Star's meridian trench that Luke had to carefully fly down to reach the station's thermal exhaust port in the movie 'Star Wars - A New Hope.' As we developed that project, we found that there were a lot of people outside of the gaming industry interested in the idea of taking data and augmenting it onto real-time video. In particular, a number of public safety entities, such as police and fire departments that are currently investing in drones to assist their situational awareness during crises.

A bird's eye view is a fantastic vantage point, but the problem is that it's quite difficult to understand scenes from so high up. Details become tiny, people become unrecognisable, geography looks different. Simply put, you don't have context for much of what's going on from that perspective, and a bird's eye view suddenly becomes a lot less useful due to how abstracted it is.

What we did was develop software that allows data to be fused onto those kinds of high-altitude real-time images. The first time we ever used this application for the commercial sector was in late 2017. Our software was used to augment the street maps over the flooded urban areas affected by Hurricane Irma. Up-to-the minute information about where survivors were known to be trapped was placed onto live drone footage, assisting responders with exactly what they needed to know to act quickly and efficiently.

Shortly after that, the defence sector started to express interest in our work too. We've now started working with the US Department of Defence and the US Air Force to take multiple manned and unmanned aerial aircraft and accurately fuse geolocational data onto the video feeds that those assets run. Our platform can be used with very large UAVs anywhere from 30,000ft up in the sky, down to



● ● Photo courtesy of Edgybees

GMC Q&A



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small tactical drones optimised for flying at just 100ft. There's a great deal of versatility in our platform.

GMC: What about other applications for AR overlaying drone footage?

Adam Kaplan: Our platform is quite simple. We can provide applications to anyone that works with both video and data that can be connected to it, which spans a great variety of industries.

AR software has been used for sports entertainment, in oil and gas verticals for maintenance and surveying, as agricultural technology allowing farmers to observe livestock and crops, and of course within defence. The ability to use overlays to indicate which military units are friendly with blue force tracking, the names of streets and geographical formations, and so on, assists soldiers and first responders immensely, making for a much more intelligent and agile asset.

Anyone who has data and live video, and wants a more comprehensive and informative product, will be interested in what we're doing.

GMC: What can AR deliver to meet the needs of security and defence?

Adam Kaplan: From a security and defence standpoint, those groups will often have many data feeds from intelligence groups. When people are piloting large drones, they may find themselves looking at up to six different screens. We're able to take all six screens and condense them into a single operational picture where all associated video and data can be combined into a singular package, making for a more effective, informed operator.

GMC: The Edgybees platform looks quite impressive. Does the system have any limitations?

Adam Kaplan: Though I wouldn't call it a limitation, one requirement that our solution demands is the understanding of the positioning of the camera and the direction it's pointing through GPS and the metadata associated with that hardware. After all, there's not much geolocational AR can tell you if the software doesn't even know which way the camera's pointing or where it is.

Whether due to distance or video quality, visual data captured by aerial cameras is not particularly accurate. Our aim is to integrate precise data into video feeds to deliver a more complete and informative image, as opposed to traditional static feeds featuring potentially indiscernible actors and locations often unrecognisable from abstracted angles.

GMC: In the information era we find ourselves in, real-time data seems to be more important than ever. Do you anticipate visual intelligence overlays like yours eventually becoming a completely ubiquitous technology?

Adam Kaplan: Looking at the media landscape around us, there are more video feeds across countless applications than ever before. Not only from aerial platforms, but CCTV, body cameras, all forms of video produced by media entities, millions upon millions of feeds across the world — all of which stand to benefit from having relevant data attached to them.

The applications of real-time AR overlay are staggeringly extensive. It's not difficult to imagine what can be achieved with this kind of technology - from being applied to live video feeds taken by drones in defence missions, to enhancing a viewer's experience of a pro golf broadcast - and after that breakthrough has been realised, it could change the world. We're excited to be a part of that.

GMC: Until relatively recently, AR has been a concept from the world of science fiction. What breakthroughs have brought the technology to life?

Adam Kaplan: There's a number of different components that have made our platform possible. Computational power was an issue standing in the way of this technology for some time, which we've solved by applying novel computer vision algorithms and edge devices to produce the kinds of results necessary to structure data in response to real-time video.

Cloud computing is also a big pillar for us. As we enter the world of 5G, we're starting to see networks faster than ever before, which has made these kinds of futuristic technologies increasingly possible and prevalent.

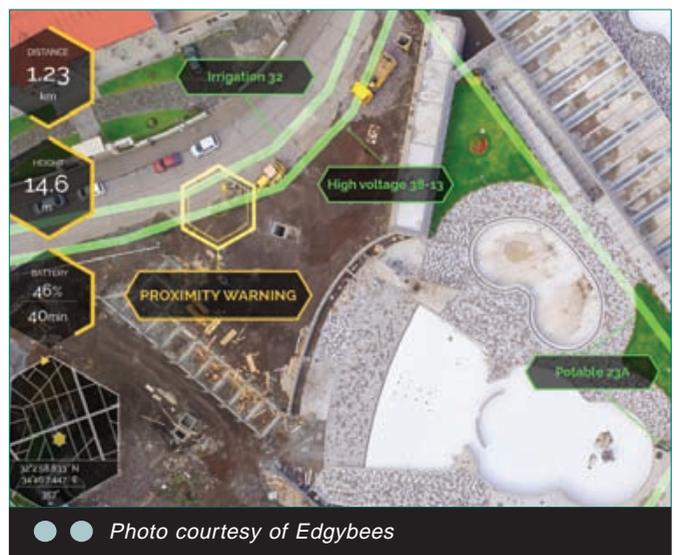
GMC: Do you have any predictions for how AR will be deployed in the future?

Adam Kaplan: I think augmented reality allows for the ability to visualise information in ways we haven't been able to before, which allows us to understand far more from a singular image. For too long people have considered this technology to be a kind of novelty or something relative to the world of video gaming, but truthfully there are many, many practical applications surfacing.

The ability to share data visually is the future. As human beings, 85 percent of our actionable sensory information is visual, which is why we make such efforts to meet each other face to face.

We're building a visual intelligence platform which can contextualise any video in real-time. Informing people in the moment, which keeps operators informed and on task, allows us to save more lives in a crisis and widen our horizons beyond what we thought possible.

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