

Summary of HEN presentation: Shuttleworth Collection, 21st February, 2017

In 2017, the Collection will be launching their new iBeacon trails. The intention of this summary is to highlight the opportunities this technology presents, whilst placing it in context with the Collection's previous experience with developing digital resources and utilising emerging technologies.

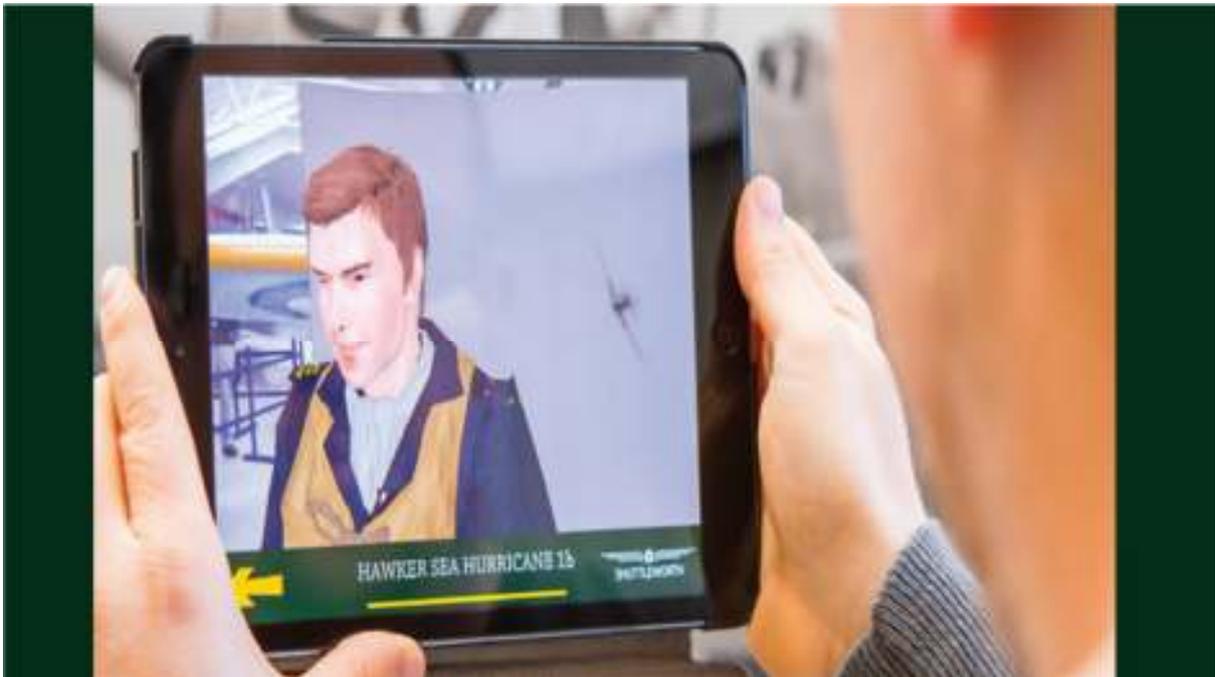
It is important to note that the following comments are in no way intended to place blame for the failures of our first, project from 2012 at the door of the developers. Harmony Interactive (<http://harmony.co.uk/services/augmented-reality/>) were an extremely professional, creative, productive and inspiring company to work with. They were genuinely interested in us, our message and our goals and I would have no hesitation in recommending them to others wishing to take advantage of the incredible opportunities Augmented Reality (AR) has to offer.



In 2012, the Collection embarked on a new digital project. It was hoped that by utilising emerging Augmented Reality technologies we would be able to address a number of weaknesses in the Collection's offer. These included, but were not limited to: static displays (in every sense of the word) on the 340 days a year a flying event was not being held; information for the vast majority of exhibits being limited to one A4 descriptor panel and no targeted education provision – whilst exhibits regularly changed locations, in hangars with no Wi-Fi. Augmented Reality content was therefore developed for four aircraft to prove the concept. Each aircraft had a board explaining some aspect of flight (e.g. lift), a board explaining a key technical feature of that aircraft (e.g. an arrestor hook)



and a pop up stand through which a CGI pilot related his experience of flying the aircraft, whilst film of the aircraft displaying at one of our air shows played in the background.



It is fair to say that the end result was a compromise. Although the project was completed to budget, it was more than two years late (entirely down to the length of time it took the decision maker's to approve the project) - meaning our once pioneering work had well and truly missed the marketing boat. Likewise, too many cooks really had spoiled the broth, the content had been well and truly diluted to appease nay-sayers and to try and appeal to too wider an audience.



I became aware of iBeacons through work that Aberdeen University were doing with the National Trust to enable digital content to be accessed by visitors at sites with no Wi-Fi. Then, at a Museums Association Museum Technology conference last year (one of the best organised, most useful and inspiring conferences I have ever attended – highly recommend it), I met Rhys from Locly (<https://locly.com/>), who were easy to choose as our developers - they had a proven track record in developing the technology and also in working with museums and heritage organisations.

Briefly, as demonstrated at the HEN meeting, we have developed a pilot trail in which digital content is activated when the visitor's smart device is triggered by the iBeacon through Bluetooth. This trigger will depend upon which trail they have chosen to undertake, their location in relation to the exhibit and the time spent at that location. Examples of the digital content shown ranged from old Pathé newsreel featuring the exhibit, 360° cockpit photographs and 'point of interest' and 'before and after' interactive slides, as well the re-use of the animations developed for the AR app. The content has all been designed, uploaded, and the triggers all been programmed, in house at Shuttleworth by a self-confessed technical ignoramus (me). The software really is idiot proof.

This pilot trail has successfully proved the concept to our trustees, who have now green-lit the production of five of the planned twelve trails, through three separate audience apps: Visitor; Kids and Enthusiast

The image shows a screenshot of a project management software interface, likely Microsoft Project, displaying a Gantt chart. The chart is organized into several columns representing different tasks or milestones. The columns are color-coded: yellow, orange, blue, green, purple, cyan, and pink. Each column contains multiple horizontal bars representing the duration of various tasks. The bars are connected by vertical lines, indicating dependencies between tasks. The interface includes a menu bar at the top with options like 'File', 'Edit', 'View', 'Tools', 'Format', 'Tools', and 'Help'. The chart is set against a dark green background.

It is pertinent to note that planning has been key to ensuring that each trail remains interesting and that full use of each iBeacon is made. For example, the first exhibit listed above features in seven trails, but carries different digital content for each trail. And the first trail above has been deliberately limited to 10 exhibits (of the 43 that could have been used),



evenly spread throughout the Collection and with a different form of digital content for each exhibit.

In developing the pilot trail, we believe we have addressed a significant proportion of the lessons learned from our previous experience.



- Rather than trying to please everybody, and demonstrate every possible facet of the technology, by remaining focussed in our plan it has been much easier to get Trustee buy-in. In fact, it has even resulted in a Trustees approaching us to use our 360°cockpit views as a tool in our pilot training programme.
- We had experienced problems with some of our Front of House staff either not understanding the AR App or simply choosing not to engage with it. The self-promotion and user friendly, intuitive nature of the Locly interface negate this issue
- We were able to negotiate an exceptional deal on the development costs of our original AR app by allowing the developer to dictate the way in which some of the content was displayed (so that they could showcase the latest features and their CGI capabilities). It was decided from the beginning of the iBeacon project that the extra cost of having full creative control was easily out-weighed by the clarity of vision that could be retained and the quality of the finished article.
- Unfortunately, the technology of the time meant that rather than engaging our audience, the methods of triggering the AR content were so specific they actually had the potential to exclude. With the number of ways that content can be triggered (location, proximity, time, route, history, user input and now, with the latest



accelerometer equipped iBeacon, even movement) iBeacons massively increase engagement opportunities.

- Understandably, changes in content to the AR app had to be made by the developer. Not only can Shuttleworth make changes to the content of the iBeacons trails in real time, they can create entirely new trails – and anyone capable of using Powerpoint as more than a slide projector can use the Locly software to do this. This also means that we retain ownership of the content
- In addition, the platform approach to hosting content means that we can respond to new developments in technologies in a timely manner without affecting the trial programme as a whole.
- Finally, the point that gave us the green light from the Trustees in days rather than months – Analytics. With complete anonymity, the interaction between the iBeacons and user's smart device can provide key information to your organisation. Primary examples include: heat maps of routes your visitors take around your attraction; how long did they spend in a particular gallery; did they visit the restaurant / café afterwards and whether they accessed additional information such as when the next event was taking place. There are also options to 'poke' your visitors with push-notices suggesting relevant future events, gain instant feedback, reward their engagement with offers in the restaurant and communicate with visitors who turn up 'out of hours'. Finally, if you choose you can make content available to visitors after they have left you, for a limited time or for in perpetuity. Their accessing that content can generate an anonymous and generalised heatmap of their location. A report can be found here - <https://locly.com/static/Leicester-Castle-project-report.pdf>

Testing showed visitors spent 80% more time in the castle when using the app.

70% rated their visit experience as Excellent, compared to only 30% for those not using the app.

80% of visitors using the app said they were likely to come back and do another tour.

<https://locly.com/static/Leicester-Castle-project-report.pdf>