

Smartphone Interpretation Technologies



The modern smartphone has evolved rapidly to become the mobile 'hub' from which users of all ages can run their busy work, social, leisure and family lives easily.

81% of smartphone owners keep them on all the time to browse the web, download applications, network with each other socially and use their smartphones to find out about almost anything and everything around them.

Smartphone 'contactless' technologies are the future of heritage interpretation, but there are several requirements of these new mobile technologies, such as QR codes and Near Field Communication (NFC), to deliver effective heritage site interpretation benefits. Essential factors for their success are good public awareness, that they are visible and easy for most people to use, that the information they link to can be accessed using most mobile devices, and that they can link to a range of online and offline content that is perceived as being immediately useful.

Free NFC and QR reader 'apps' are available to download and mobile web browsing costs and monthly payment plans are getting cheaper by the month. By using practical ITiC implementation guidelines mobile technologies such as NFC Tags, QR codes and Augmented Reality (AR) offer significant benefit for fast, low-cost and effective site interpretation at key points of interest.

Augmented Reality

Mobile augmented reality is a new medium through which mobile users can interact with Augmented Reality or AR content. The mobile AR world consists largely of two different types of experiences: geolocation and vision-based augmented reality.

Geolocation - based AR uses GPS, compass and other sensors in the user's mobile phone to provide a 'heads-up' display of various geolocated points-of-interest.

Vision-based AR uses many of these same sensors to virtually display digital content in context with real-world objects such as visual features, buildings, large objects, magazines, posters or packaging, all by tracking the visual features of these objects.



Augmented Reality is designed to add a 'virtual' overlay to real objects such as posters, maps, magazines, buildings and scenery, with the AR images 'triggered' based on mobile camera images or GPS.

It can also add a historical context, overlay video, audio commentary or a virtual 'what it might have looked like in the past' aspect to heritage sites and buildings, which is especially useful where the current visitor site is just a featureless field, for example.

Near Field Communication (NFC) Tags

NFC Tags are in passports and Oyster cards and NFC scanning is available pre-installed on latest Android, Blackberry Windows 8 and Nokia mobiles.

NFC Tag data is stored on a pinhead sized chip linked to an antenna built into a paper-thin NFC Tag.

Scanning works by 'tapping' an NFC equipped phone on or near an NFC Tag (usually within 1 to 3 cm).



Quick Response Codes

Quick Response (QR) codes, the most popular contactless technology, are two dimensional barcodes that can be scanned by a smartphone's built-in camera and QR reader application to access online or text based information. With **94% of the UK public owning a mobile** and over **50% having an advanced smartphone**, these devices can quickly scan QR codes and also use apps to scan newer NFC Tags and Augmented Reality.



On the QR codes placed at key points of interest along the South Downs, each mobile page link is visited from a QR code once a day on average. In fact, once people know what QR codes are, what they link to, and have scanned them for the first time, they respond favourably to them.

As a result of this detailed research a second phase of research is under way which will add NFC Tags and more information to the QR code sites.

Smartphone Interpretation Benefits

Compared to visitor site interpretation boards QR codes, NFC Tags and augmented reality links are easy to site, such as on existing way-posts, and can be easily stored and replaced if damaged.

When visitors want more information about something they've discovered on their visit, they can use their mobile to scan a nearby QR code or NFC Tag quickly and easily to obtain more details about a particular point of interest. The beauty of using mobile website pages that each code links to is that, whilst the web page links stay the same, the mobile web page content and images ensure can be updated or changed with the seasons or for special nearby events.

For more information go to www.itsinconservation.co.uk and visit the 'QR NFC and AR' website page.