Response by

Daniel Pett, Digital Humanities Lead, British Museum

"The concept of 'anyone' is key to the discussion of 3D production"

The burgeoning 3D scene provides a panoply of opportunities for academic and museum communities to engage with diverse and increasingly technologically astute audiences. Until recently, technological and financial barriers to entering the 3D realm have been relatively high, even insurmountable for private and public institutions and individuals considering the development of 3D models *en masse*. The advent of high-quality mobile phone cameras, mobile 3D production applications, and the rise of photogrammetry now makes it possible to cheaply and easily create 3D representations or even reproductions of suitable objects.

The concept of "anyone" is key to the discussion of 3D production; access to a camera and suitable software enables a wide range of participants to develop digital creations. Institutions have the choice to either get on board the 3D production line, or the public will come in and capture your sculptures, your objects and your three-dimensional spaces. The work of Sebastian Heath, Geoffrey Marchal, and Thomas Flynn, and the celebrated case of Nefertiti's bust by Nora Al-Badri and Jan Nikolai Nelles demonstrate how private individuals have acted independently of the institutions to which the artefacts belong. The public has also answered calls to collaborative community action, such as the crowdsourcing of Project Mosul

The British Museum's recent 3D productivity comes out of work by Thomas Flynn and the Arts and Humanities Research Council-funded MicroPasts project, which led to my colleagues and I trying to rapidly produce 3D content for public engagement. The Museum does not have an in-house dedicated 3D team and therefore capacity is limited. Ideally, knowledge transfer will happen amongst curatorial staff, with devolved responsibility for 3D documentation becoming the norm.

Models we have created have been used for the handling desks for blockbuster exhibitions such as *Sunken Cities*, for the innovative Museum in a Box project, for the work of the author of this provocation (Digital Pilgrim), for experimental archaeology, for PhD research on the morphology of palstaves, within Virtual Reality applications, for commercial product development, and most visibly within the British Museum's Room 3, and with high impact on the Sketchfab platform.

The move towards 3D as a didactic instrument can be demonstrated through photogrammetric models, such as the Skull whence British Museum curator Alexandra Fletcher used her expertise to annotate a model. This enabled it to be embedded in the National Geographic's story, transferring her encoded or visualized scholarship to a large audience. This model now takes on a public engagement aspect of its own; it can now easily be reused as a teaching tool. The model itself can also generate serendipitous re-use through integration with third-party applications such as VR environments (see the British Museum's Oculus demo), through home or office printing for use in educational environments, and through derived artistic reinterpretation.

However, we must not ignore the fact that statistics show these models are not used by mass audiences. A cursory glance at the Sketchfab platform shows that many 3D models garner several hundreds of views, but very few receive viewing figures in the thousands and even fewer in the millions. There are also notable examples of negative 3D public engagement: the Palmyra arch debacle is a prominent example of the mistaken belief, perpetrated by the popular press, that recording and documentation processes are equal to the preservation of original artefacts.

The future is positive for the ethical use of applied 3D technology, and the public is the key. The production of 3D data is now democratized, the ubiquitous mobile phone in your pocket allied with the power of cloud computing, allows everyone to create or even co-create high quality output. Whether the public wishes to consume them in their everyday activities is to be seen, but opportunities to push this consumption to mainstream audiences will increase annually.