Exploring New Business Models For Monetising Digitisation Beyond Image Licensing To Promote Adoption Of Openglam

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ABSTRACT: Ever since the Rijksmuseum pioneered the OpenGLAM movement in 2011, releasing to the public domain images of artworks in its collection [1], several other museums have followed its lead, including the Metropolitan Museum of Art [2] and the Finnish National Gallery [3]. Although studies have demonstrated that OpenGLAM provides numerous benefits to museums, ranging from the dissemination of their collections to increased sponsorship opportunities [4; 5], the movement's adoption remains limited. One of the main barriers for joining OpenGLAM is the "fear of losing image licensing revenue" [4], as participant museums have yet to invent new business models to recover lost image fees [6]. Current efforts to address this challenge include Rijksmuseum's Rijksstudio, a Print-on-Demand service for creating and purchasing products featuring the museum's artworks [7]. However, Rijksstudio is very similar to existing Print-on-Demand solutions for museums, which have barely evolved over the last decade and, subsequently, it shares their limitations (e.g. offering wall art products only). A radically different approach that integrates Print-on-Demand automation with emerging technologies (i.e. image recognition and progressive web applications) to generate revenue from digitisation is the Infinite Museum Store (IMS). In [8] we presented the technical aspects and innovation features of IMS, as well as the results of a pilot study held at the State Museum of Contemporary Art (SMCA) in Thessaloniki, Greece, which demonstrated its significant potential for generating revenue from digitised collections. This paper examines IMS from a business model perspective. It focuses on aspects such as viability, maintenance and long-term sustainability, and investigates ways technical innovation can be applied and utilised as a business model that generates revenue from digitisation, helping promote wider adoption of OpenGLAM.

1. INTRODUCTION

OpenGLAM is a movement in the cultural heritage sector that promotes "free and open access to digital cultural heritage held by Galleries, Libraries, Archives and Museums" [9]. In contrast to open access, which, as a term, has received numerous interpretations [5], OpenGLAM can be considered a distinct subset of the broader movement towards increased openness of digital cultural heritage. Through its set of principles [10] OpenGLAM demands museums to "keep digital representations of works for which copyright has expired (public domain [works]) in the public domain by not adding new rights to them" [10]. OpenGLAM was pioneered by the Rijksmuseum in 2011, when the museum took the decision to provide free and unrestricted access to high quality images of thousands of works in its collection for anyone interested in reusing them [1]. According to the Rijksmuseum, the reason behind this decision was "the problem of the yellow milkmaid", as it was later described [1]. The museum had observed that there were more than 10,000 digital copies of Johanne Vermeer's Milkmaid available on the Internet, which displayed the artwork more "yellowish" [11] and as a result "people simply didn't believe [that] the

postcards in [Rijksmuseum's] shop were showing the original painting" [11, p.74].

Numerous institutions have since adopted the OpenGLAM movement, including the Barnes Foundation in 2017 [12] and the Finnish National Gallery earlier this year [3], committing to provide free and unconditional access to high quality images of their public domain works. Opening access to digital cultural heritage, provides numerous benefits to participant institutions: strengthening their institutional brand [4], with regards to prestige, authenticity and innovation [1]; increasing the dissemination and use of their collections; gaining access to more funding opportunities [4] and maintaining "relevance in today's digital society" [1, p.14] are amongst the key advantages for participant museums and galleries. Beyond tangible benefits, it is widely acknowledged amongst museum professionals that, since museums exist to educate and serve their audiences [5], providing "access to images of works in the collection is part of the institutional mission" [5, p.26]. Lastly, increasing openness to digital cultural heritage is considered by some as inevitable. Michael Edson, Smithsonian Institution's first Web and New Media strategist and member of the OpenGLAM advisory board [13], has long advocated that "the future is open" [14]. Edson states that, with the world being more connected than ever and with immense computational power at our dispense, people take free resources (such as Wikipedia.org and TED.com) for granted, arguing that "open access and human rights are profoundly connected" [14].

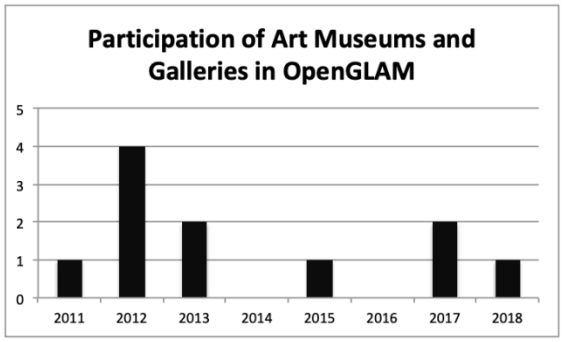

Figure 1: *Number of art museums and galleries that joined OpenGLAM each year since 2011.*

Despite the benefits of joining OpenGLAM and the wide acknowledgement that increased access to digitised collections is part of the institutional mission of every museum, participation remains limited. Indicatively, the total number of art museums and galleries in OpenGLAM is only eleven (Figure 1). Rijksmuseum's pioneering decision in 2011 was arguably disruptive for the cultural heritage sector, as it significantly challenged the norm. According to Simon Tanner's study titled *Reproduction charging models & rights policy for digital images in American art museums* [15] revenue from image licensing, image rights' ownership and control of image use are three important considerations for all museums [15] and the Rijksmuseum gave up all three of them. These considerations are also attributed to be the barriers for organisations interested in joining OpenGLAM, i.e. the loss of image licensing revenue and intellectual control and the loss of control over image reuse [5, 6, 11]. Whilst in 2004, Tanner's study found control to be the most important consideration for museums [15], in 2013 Kelly stated that "loss of control fades as a concern" [5, p.27]. More recently in 2017 museums cited as their main barrier for adopting OpenGLAM, the loss of image licensing revenue [16]. When British museums were criticised for their restrictive policies regarding image reuse last year, Tate responded that the museum's licensing activities recover some of the costs of digitisation, whilst the British Museum argued that its image fees reflect the cost of making its collection, which is comprised by more than one million works, available on the Internet [16]. With museums having yet to invent new business models to recover lost image fees, the fear of losing image licensing revenue poses as one of the key barriers for joining OpenGLAM [6].

Figure 2: *On-site Print-on-Demand at Tate Britain*

It can be argued that, beyond image licensing, revenue generation from digitised collections is very limited. At present, only a small number of museums gain an additional source of revenue from digitisation by utilising Print-

on-Demand. On-demand printing in the cultural heritage sector was pioneered in 2003 by the National Gallery in London [17]. In collaboration with Hewlett Packard the National Gallery launched the first ever Print-on-Demand service for a cultural heritage organisation, allowing visitors to order any painting from the gallery's collection in different sizes [17]. Print-on-Demand has since been employed by several museums and galleries to enable visitors to order custom wall art products. However, it is found almost exclusively on large and well-resourced museums [8].

There are two types of Print-on-Demand services for museums; on-site and online. On-site Print-on-Demand is provided through custom-made kiosks situated at the museum, which allow museum visitors to select the work to be printed, the type of the print (e.g. poster, canvas), its size and frame. To complete their order, visitors fill in their shipping details and make the payment using the kiosk (Figure 2). Online Print-on-Demand operates in a similar manner, but orders are being submitted through the museum's website. A primary example of online Print-on-Demand is Rijksstudio (Figure 3).

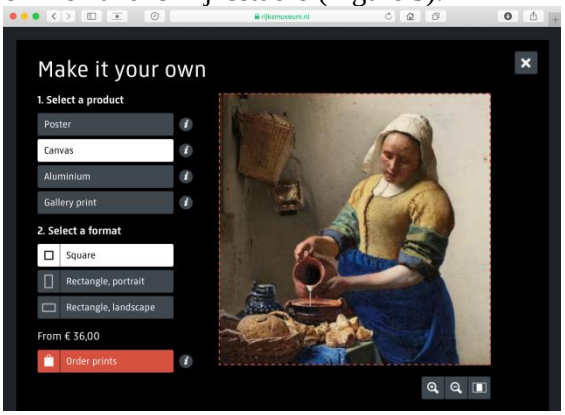

Figure 3: *Online Print-on-Demand (Rijksstudio)*

The wave of digitisation across Europe and throughout the world in the last decade has enabled more institutions than ever to benefit from Print-on-Demand [8], by generating an additional stream of revenue from their digitised collections. However, Print-on-Demand services for museums have barely evolved over the last few years [8], whilst current offerings are focused exclusively to well-resourced museums, since they require a sizeable upfront investment [8].

The Infinite Museum Store (IMS) presents a radically different approach that integrates Print-on-Demand automation with emerging technologies (i.e. image recognition and progressive web applications) to generate revenue from digitised collections for museums of all sizes, whilst providing an improved experience for museum visitors through its intuitive mobile application [8]. In our publication titled *Reaping the Benefits of Digitisation: Pilot study exploring revenue generation from digitised collections through technological innovation* [8] we presented the technical aspects and innovation features of IMS, along with the results of a pilot study held at the State Museum of Contemporary Art (SMCA) in Thessaloniki, Greece. The pilot study of IMS demonstrated significant potential for generating revenue from digitised collections. This paper examines IMS from a business model perspective, focusing on aspects such as viability, maintenance and long-term sustainability. By investigating ways technical innovation and solutions such as IMS can be applied and utilised as a new business model for museums and galleries, this paper aims to address one of the main barriers for adopting OpenGLAM, i.e. the loss of image licensing revenue, by providing an alternative for generating revenue from digitisation.

2. IMS AS A BUSINESS MODEL

As detailed in our pilot study [8], IMS provides a take on how Print-on-Demand automation can be combined with leading edge technologies to benefit museums with digitised collections, offering a radically different implementation of Print-on-Demand services for museums. The end-user experience has been designed based on Mann and Tung's barriers for using a service in the museum [18]. This approach resulted to the front-end application of IMS having the format of a mobile application (Figure 4), which is easy to use and to obtain (i.e. the application is a progressive web app that performs as a native application, but can be accessed through the Internet browser, without the need for downloading a standalone application) [8]. More importantly, IMS has been designed to be offered for free to museums and galleries, as participant institutions are not required to pay for kiosks, or for custom software integrations to start generating revenue from Print-on-Demand [8]. Therefore, IMS enables

a new business model for all museums and galleries with digitised collections.

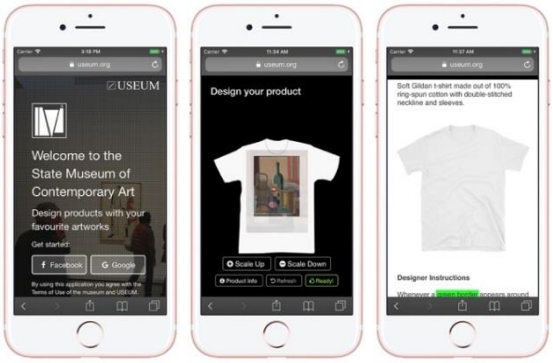

Figure 4: *The front-end application of IMS*

IMS is a technical solution designed to serve as a facilitator between Print-on-Demand suppliers and museums with digitised collections. The number of white label, Print-on-Demand providers is steadily increasing and currently there are several companies providing such services. Rijksmuseum's Rijksstudio is integrated with Peecho (i.e. peecho.com), whilst the National Galleries of Scotland and the Natural History Museum are integrated with Prodigi (i.e. Prodigi.uk). In addition to the integration, Prodigi has also supplied museums with custom-made kiosks, to receive orders onsite. Museums that are unable to pay for a custom integration with a Print-on-Demand provider, or for a bespoke kiosk, cannot benefit from Print-on-Demand at present. Adopting the approach of IMS, which utilises a common platform that is shared across different museums, has numerous advantages:

(i) Museums are freed from paying for bespoke integrations, as they all use the same infrastructure, but under their own branding (i.e. customisable logo and colour palette);
(ii) Museums are freed from paying for custom-made kiosks that get deprecated over time, as IMS runs on visitors' smartphones, which counts several advantages in comparison to kiosks (e.g. users are more familiar with their own smartphone, than with a kiosk; data input is faster, as it is likely that users have already stored their personal details in their smartphone's browser) [8];
(iii) Museums are not concerned about software (i.e. custom integration) and hardware (i.e. kiosk) maintenance;
(iv) Museums can combine and take advantage of multiple suppliers, without paying for individual integrations;
(v) It can be argued that the most significant advantage of an approach similar to IMS, is that it enables museums that are not as well resourced (i.e. cannot afford to pay for custom software and hardware) to benefit from Print-on-Demand and generate revenue from digitisation, in a way other than image licensing.

The costs associated with IMS can be divided into two categories, i.e. the initial development costs and the ongoing operational costs. Based on our pilot study and the development of the prototype of IMS, the costs relating to the initial development, could be considered modest. A part that could prove expensive in future implementations is the artwork recognition algorithm, as it requires significant technical expertise, in order to ensure that the algorithm works in all lighting conditions and that the processes of data transition and image recognition are completed on the scale of milliseconds, even when visitors' smartphones are on a slow Internet connection. The main area of expenditure for such a centralised approach, such as IMS, could be considered the ongoing operational costs. Continuous software maintenance (i.e. bug reporting and resolution) and development (i.e. the addition of new products and suppliers); customer support for end users and data import of the digitised collections of museums are aspects that would need to be attended to on an ongoing basis. Although operational costs would not be insignificant, it could be argued that such a centralised approach has the potential to prove more optimal, in comparison to each individual museum maintaining its own customer support team and also its own technical team that looks after the maintenance of the respective museum's software integrations and custom hardware equipment.

Considering ways the aforementioned costs could be covered on an ongoing basis in order to achieve viability and long-term sustainability for an approach similar to IMS, these are mainly two; through a privately owned Software-as-a-Service (SaaS) venture, or through a collaboration across different museums. SaaS is described as "software that is owned, delivered and managed remotely", whilst being delivered "based on one set of

common code and data definitions" [19]. SaaS by definition "is consumed in a one-to-many model […] on a pay-for-use basis, or as a subscription" [19]. To maintain the nature of Print-on-Demand (i.e. to not require upfront payments), whilst allowing revenue generation for the company offering IMS as a SaaS, in order to cover its costs, museums could be charged for a commission on each order made. As Print-on-Demand suppliers keep increasing, driving prices downwards, it can be argued that Print-on-Demand will eventually be commoditised following the broader printing industry [20]. This trend allows for such a SaaS provider to charge for a commission, whilst maintaining reasonable prices for products.

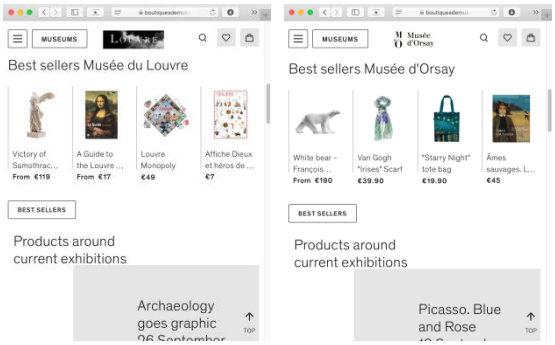

Figure 5: *The electronic stores of the Louvre and Le Musée d'Orsay*

Another option for implementing a solution similar to IMS, one that does rely on private initiative, would be through a collaborative venture between different museums. For such an approach, the example of France's national museums could be taken. The Louvre and Le Musée d'Orsay instead of having their own custom electronic stores, they all use branded sub-stores on the same platform (Figure 5). These are managed by RMN-GP (Réunion des Musées Nationaux – Grand Palais), the French National Museum Alliance, a public cultural institution operating under the supervision of the Ministry of Culture and Communication of France that "offers an all-inclusive integrated solution which includes the distribution, publishing and promotion of products" [21].

3. DISCUSSION

IMS has demonstrated potential in enabling museums and galleries to generate revenue from their digitised collections [8]. The proposed solution, IMS, combines recent advancements in Print-on-Demand automation with leading edge technologies to provide a mobile solution that substitutes custom-made kiosks with visitors' smartphones, enabling all museums to benefit from Print-on-Demand, without the need for an upfront financial investment [8]. More importantly, IMS counts numerous advantages for museums visitors in comparison to current Print-on-Demand solutions for museums, as it allows them to purchase their favourite works on a range of different products beyond wall art (e.g. t-shirts, smartphone cases) from their own device, even without downloading an additional application [8]. This paper examined the costs associated with IMS and ways such a project could become viable and sustainable for the long-term. The first approach is through a private venture that provides IMS as a SaaS. Adopting this approach would require a private company to take a financial risk, because, although it appears feasible, it remains unproven whether such a venture could generate enough revenue from commissions to cover expenses and generate profit. Another approach for implementing a solution similar to IMS, is through a collaborative project between museums. The example of RMN-GP could be followed, which manages the stores of all of France's national museums, freeing individual institutions from establishing relationships with suppliers and dealing with customer support with regards to merchandising. Adopting a model similar to RMN-GP would enable museums to outsource their retail efforts, not to a private company, but instead to a public cultural organisation that operates under the supervision of the Ministry of Culture.

Although digitised collections present an important resource with commercial value for museums and galleries, current efforts to monetise digitisation rely heavily on image licensing. As a result, museums are discouraged from joining OpenGLAM, as institutions are struggling to invent new business models to recover lost image fees [6]. IMS enables museums of all sizes to generate revenue from their digitisation with an innovative Print-on-Demand solution. At present, only well-resourced museums are able to take advantage of Print-on-Demand, since current solutions require significant upfront investment from museums, nullifying the greatest advantage of Print-on-Demand, i.e. the ability to pay for goods, after a purchase has been made [8]. For the proposed solution of

IMS to become viable and sustainable, so that it can serve and support a large number of museums, it would require, either a private company to invest in developing IMS as a SaaS, or a collaboration between different museums. In future work we will seek to further assess the potential of IMS, by making a series of improvements on the prototype and by running a second pilot in collaboration with an art museum that is part of OpenGLAM.

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