

National Piping Centre E-Learning Portal and Livestreaming – Research report

Increasing access to and revenue streams from traditional music events and teaching

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Executive Summary

Background

The National Piping Centre (NPC), established in 1996, aims to be 'the world centre of excellence for the study and promotion of the Great Highland Bagpipe', providing 'encouragement and inspiration for the study and promotion of Scotland's national instrument'. Through the Digital R&D Fund for the Arts in Scotland, the NPC developed an E-Learning Portal, with associated livestreaming of piping events, to extend the reach of its existing teaching and events programming into the digital environment.

The NPC E-Learning Portal is a virtual classroom, enabling instructors from the NPC to deliver teaching on a one-to-many model, in real time and as recordings, on a subscription or a pay-per-view model, via Adobe Connect.

The Portal extends the capacity of the NPC's existing remote and/or international Skype teaching by creating an online portal using webinar technologies and live streaming services. The NPC partnered with Glasgow-based digital co-operative Yellow Brick House (YBH) for the project. The project was awarded £24,700 from the Fund.

The development of the E-Learning Portal responded to a particular business need identified by the NPC. Its premises are at capacity in terms of teaching rooms, and the virtual teaching environment and one-to-many model enables the expansion of the NPC's delivery beyond its physical walls, thus linking to broader developments in terms of E-Learning, VLEs and MOOCs.

The project

The aims of the E-learning Portal and livestreaming project were to:

- diversify the NPC's Higher Education offering by allowing the development of distance learning courses with HE partners
- broaden engagement with pipers around the world with limited access to tuition because of geographical barriers

- deepen the NPC's engagement by providing educational services which complement music tuition
- develop new revenue streams for tuition as well as engage with new markets in Scotland and around the world
- provide a model that could be utilised by other arts organisations in Scotland to deliver music education.

The key individuals at the NPC involved with the project were the Development Officer Andrea Boyd, Principal of the NPC Roddy MacLeod MBE, and Piping Instructor John Mulhearn. Key staff at YBH were David Craik, who oversaw planning and project-managed, and Dougal Perman who led on the video production and streaming.

The project was developed from June 2012, with events being livestreamed from August 2012. The E-Learning Portal went live in May 2013.

Results

In summary, the results of delivering livestreamed events and developing the E-Learning Portal were:

- A series of livestreamed events, with the highest viewer figures being 5317
- Successful delivery of bonded SIM devices for livestreaming in remote locations without strong mobile signals
- 20 full subscriptions for the E-Learning Portal in its first fortnight; 44 after six months
- By October 2013, 76 pay-per-view lessons purchased
- Visitors to the E-Learning Portal website averaging 1300 a month, with highest total visits from the UK, US and Canada

Insights

Insights derived from the development of livestreamed events and the E-Learning Portal relate in particular to Partnership, Planning and Vision; Revenue and Delivery Mode; and Teaching Traditional Music in an Online Environment. The key lessons learned from the project were:

- Digital technologies, combined with commercial approaches, have the capacity to bring traditional cultures to global audiences and to develop international markets.
- A careful and considered choice of technology partner will enable a beneficial ongoing relationship.
- A very clear focus and strongly articulated vision enables a collaborative and effective working relationship with the technology partner.
- Consideration of time and project-management, including realistic planning of launch dates and incorporating the need to test the technologies and train a variety of users is important.
- Consideration of how early and iterative market research could be embedded thoroughly into development processes would have enabled a more user-focused approach; nonetheless, this is taking place post-launch and with the live project.

Future

Future plans for the project include continuing analysis and assessment of the varying business models. Collaborative partnerships for the E-Learning Portal with universities and schools are being developed.

With additional funding from AmbITion Scotland, NPC have furthered capabilities (both in-house and with the NPC partner) to deliver further livestreamed events.

NPC has also published a version of its existing print and CD-Rom *The Highland Bagpipe Tutor Book*, as an iOS app.

1. Background

The National Piping Centre (NPC), established in 1996, aims to be ‘the world centre of excellence for the study and promotion of the Great Highland Bagpipe’, providing ‘encouragement and inspiration for the study and promotion of Scotland’s national instrument’.¹ Through the Digital R&D Fund for the Arts in Scotland, the NPC developed an E-Learning Portal, with associated livestreaming of piping events, to extend the reach of its existing teaching and events programming into the digital environment.

The NPC has a physical base in central Glasgow. Its premises incorporate teaching and practice spaces, offices, a small museum, a library and archives, a café bar, a small number of hotel rooms, and an auditorium used for performances and for hire for events such as weddings. The NPC has a staff of 48, and teaches over 900 students a month. With the Royal Conservatoire of Scotland, it teaches a BA in Scottish Music: Piping, as well as study abroad programmes with the Universities of Edinburgh, Glasgow and St Andrews. It runs the National Youth Pipe Band of Scotland and the Glasgow International Piping Festival (Piping Live!).²

The NPC E-Learning Portal is a virtual classroom, enabling instructors from the NPC to deliver teaching on a one-to-many model, in real time and as recordings, on a subscription or a pay-per-view model, via Adobe Connect. The Portal extends the capacity of the NPC’s existing remote and/or international Skype teaching by creating an online portal using webinar technologies and live streaming services. It also enables digital access to the NPC’s archive of print and audio resources, and via increased social media activity intends to drive engagement with and interest in piping in general and the NPC in particular.³

The development of the E-Learning Portal responded to a particular business need identified by NPC. Its premises are at capacity in terms of teaching rooms, and the virtual teaching environment and one-to-many model enables the expansion of the NPC’s delivery beyond its physical walls: ‘a virtual way of expanding our horizons’.⁴ The NPC business strategy is to ‘be self-sustaining by generating a surplus on activities to cover the costs of subsidising charitable piping activities’; the revenue from piping lessons is an important part of that surplus.⁵

At the time of application, the NPC had already engaged with digital technologies to extend its activities. Noting the Tradition, an oral history project supported by the Heritage Lottery Fund,

¹ National Piping Centre, ‘Digital R&D Fund for the Arts in Scotland Application’, April 2012.

² National Piping Centre, ‘Digital R&D Fund for the Arts in Scotland Application’, April 2012.

³ National Piping Centre, ‘Digital R&D Fund for the Arts in Scotland Application’, April 2012.

⁴ Interview with Roddy MacLeod and John Mulhearn, National Piping Centre, November 2012.

⁵ National Piping Centre, ‘Digital R&D Fund for the Arts in Scotland Application’, April 2012.

gathered crowdsourced recordings of individuals involved in piping in Scotland over the past fifty years. Over forty recordings and associated photographs were digitised and uploaded to the NPC website from 2011-2013, providing a historical resource and extending the role and purpose of the NPC's digital presence.⁶ A limited amount of teaching was already being delivered via Skype (on a one-to-one basis) before the development of the E-Learning Portal.

Distance learning has a history which extends back to correspondence courses in the 19th century, via the development of the Open University in the UK in 1971, and into the digital era via online learning, Virtual Learning Environments (VLEs) and Learning Management Systems (LMS) from the 1990s onwards. Online learning is not exclusively used for distance learning, with many universities using classrooms and VLEs as part of 'blended' learning delivery.

Digital technologies, however, have afforded particular opportunities to the development of distance learning, both by linking dispersed learners and teachers, and extending the possibilities for asynchronous study. These possibilities include the facilitation of participation via online forums, and access to series of podcasts and other digital teaching materials which can be watched and read to the learner's own schedule. These possibilities also therefore enable students from across time zones to study.

Online learning also presents a range of opportunities for students with different learning styles; to listen or watch again, to work independently and collaboratively, and to access learning materials from different devices and in varying locations. By the second decade of the 21st century, MOOCs (massive open online courses) have become a significant element of online learning, offering free global access to non-credit bearing university courses.

Digital technologies are facilitating this historical development, and presented an opportunity for the NPC to reach out to key potential audiences for piping lessons: in Scotland, to students based in rural and remote locations, and globally, from diasporic Scottish communities, and others interested in traditional Scottish music (the NPC had strong existing international links via summer schools with Germany, Italy and Switzerland as well as Canada and the United States).

As such, digital technology also provided the opportunity for the NPC to experiment with extending its reach outside its physical walls, and to lead the arts sector in terms of online learning practices. Such reach was already part of the NPC's activities, via its various partnerships and live events, but the significant change for NPC was the concerted move into the digital environment.

When putting together the Digital R&D Fund for the Arts in Scotland application, the NPC had a number of different initial ideas for digital development, which were then refined in order, pragmatically, to find a good fit of the proposed project to the Fund. The project was delivered with Yellow Brick House (YBH) as the technology partner, a Glasgow-based digital media co-operative, with individual partners and businesses covering video production and streaming, digital development and design, planning and project management. YBH has specialisms, and a client-base, in arts, culture, and in particular, music, with previous clients including Glasgow City of Music.⁷

The collaboration between NPC and YBH was new, and came about directly through the Nesta 'Digital Day'. Following that event the NPC Development Officer shortlisted twelve companies and then, after meeting with a shortlist of five, decided on one with whom to work. In addition to their technical expertise, YBH's evident knowledge of, and interest in, music – and particularly traditional

⁶ <http://www.thepipingcentre.co.uk/museum-heritage/noting-the-tradition/>; <https://www.facebook.com/pages/Noting-the-Tradition/270547276331018>.

⁷ Interview with David Craik, Yellow Brick House, January 2013.

music – was an important factor in NPC’s decision to work with them.⁸ The project was awarded £24,700 from the fund.⁹

2. The project

As articulated in the application, the aims of the E-Learning Portal and livestreaming project were to:

- diversify the NPC’s Higher Education offering by allowing the development of distance learning courses with HE partners
- broaden engagement with pipers around the world with limited access to tuition because of geographical barriers
- deepen the NPC’s engagement by providing educational services which complement music tuition
- develop new revenue streams for tuition as well as engage with new markets in Scotland and around the world
- provide a model that could be utilised by other arts organisations in Scotland to deliver music education.¹⁰

The overall research proposition for the NPC was therefore to gauge how the organisation could extend its educational, financial and cultural reach, both for its own purposes and as a model to other traditional music educators in Scotland.

The key individuals at the NPC involved with the initial formulation of the project were the Development Officer Andrea Boyd (who subsequently left the NPC), Principal of the NPC Roddy MacLeod MBE, and Piping Instructor John Mulhearn. Following Andrea’s departure, John stepped into the project management role. Additional staff members at the NPC with particular roles included the Director of Administration (with an overview of the business model and financial management), the Marketing Office (to oversee the marketing, advertising, PR and launch of the project), the NPC IT officer (to liaise with YBH in terms of technical aspects and integration into the existing NPC website), as well as the team of five piping instructors delivering the E-learning lessons.

YBH’s co-operative structure meant that a number of individuals and their technological expertise were brought in where appropriate to different aspects of the project. YBH’s flexible structure – given the multi-faceted nature of the project – was particularly beneficial to the development of the project. The overall planning and project management was overseen by David Craik at YBH, with Dougal Perman leading on the video production and streaming.

The E-Learning Portal was developed to a tight series of deadlines, with the first public-facing activity (a day of live-streaming during Piping Live! in August 2012) happening only three months into the project. A further two livestreaming events took place during the funded period: the Glenfiddich Piping Championship in October 2012 and the Piping Live! Launch Event in April 2013. All three events were free to watch, but users had to register, with nearly 2000 watching the Glenfiddich Piping Championship.¹¹ (Four livestreaming events were originally planned, but escalating costs meant the number delivered was cut back to three.)¹²

⁸ Field Notes from project meeting with Andrea Boyd and Roddy MacLeod, NPC, and David Craik, Yellow Brick House, July 2012; National Piping Centre, ‘Digital R&D Fund for the Arts in Scotland Application’, April 2012.

⁹ <http://www.nesta.org.uk/news/six-scottish-arts-and-cultural-organisations-selected-pioneer-digital-research-and-development>.

¹⁰ National Piping Centre, ‘Digital R&D Fund for the Arts in Scotland Application’, April 2012.

¹¹ National Piping Centre Direct Marketing Email, ‘E-Learning comes to the National Piping Centre’, April 2013.

¹² Interview with David Craik, Yellow Brick House, January 2013.

A survey was carried out with watchers of the livestreamed events, and the positive feedback, in addition to interactions via social media (Facebook and Twitter), led the NPC to believe that the future monetisation of livestreaming was a possibility. Beyond the funded period of the project, the NPC started to put paid-for (and archived on-demand) livestreams into place, including in February 2014 the Metro Piping Cup from Newark, NJ in the United States, for which a fee of \$10 was charged. During the funded period itself, the livestreamed events were used to harvest an additional 700 email addresses to the NPC database, useful in terms of marketing the E-Learning Portal.¹³

The E-Learning Portal itself was developed over summer/autumn 2012 and spring 2013. The project partners had already decided on the platforms for delivery in advance of the application to the fund: to build a WordPress website with integrated Adobe Connect classroom functionality. WordPress, as an open source project, encourages and enables developers and web managers across the world to develop and find technological solutions. WordPress can also be incorporated into existing websites with relative ease, allowing for the development of the E-Learning Portal as a microsite added onto the existing NPC website. Adobe Connect is an off-the-peg webinar and web conferencing technology, also used within educational environments for E-Learning.

In terms of the business model, the E-Learning Portal offered two choices to customers: either a monthly subscription (£30) or a pay-per-view mode (£5 a lesson), with some free content available on the home page of the Portal to demonstrate the learning mode and typical content to potential users. The Portal was also developed with customers able to participate in lessons in real time, or to use an archived, on-demand service to catch up on lessons missed, or ones delivered several months previously. Lessons consist of general materials (e.g. History and Repertoire, and Technique), as well as lessons ordered into graded levels (5-1) according to the NPC's existing system. Given the delivery mode, customers can access lessons in any graded level, as the online classroom is principally set up as a one-way communication mode.

The initial plan was to launch the E-Learning Portal on St Andrews Day (November 2012). However, this ambitious timescale proved too tight, and the eventual launch was pushed back to April 2013, with first delivery in May 2013. In the preceding months, the NPC undertook training on a weekly basis from February 2013 with its instructors to familiarise them with the technology, with a period of soft-delivery (a 'focus group') to existing Skype students before the launch in May 2013.¹⁴

The ambitious timescale the NPC set itself proved to be a challenge. Changes to that timescale, however, were not detrimental to the delivery of the project itself, not least because the projected launch dates were not made public. The departure of the original staff member who formulated the application also proved a disruption. However, this disruption was by no means an insurmountable one, given the alignment of the project with the NPC's overall mission, and the hands-on involvement of Roddy MacLeod as Principal of the NPC which ensured that the project continued to be prioritised in staff workloads.

The delays came about for a number of reasons, technological and otherwise. The main innovation identified by the NPC and YBH was in terms of the development of the business model and in the delivery of content in new ways. However, there were also degrees of technological challenge and innovation in developing the livestreaming and the E-Learning Portal.¹⁵ Although dealing with off-the-peg software (WordPress and Adobe Connect), YBH still had the challenge of integrating the software into one seamless system for users, which presented difficulties. Plug-ins are rarely as simple as vendors would suggest, an issue which, as technology partners, YBH were well aware of.¹⁶

¹³ Interview with Roddy MacLeod and John Mulhearn, National Piping Centre, November 2012.

¹⁴ Interview with John Mulhearn, National Piping Centre, May 2013.

¹⁵ National Piping Centre, 'Digital R&D Fund for the Arts in Scotland Application', April 2012; Interview with David Craik, Yellow Brick House, January 2013.

¹⁶ Interview with David Craik, Yellow Brick House, January 2013.

A particular challenge for the NPC was staff development and buy-in. Although some piping instructors had already delivered Skype teaching and therefore had some degree of familiarity with online learning, most did not. In addition the technologies used for the E-Learning Portal are more complex than the Skype software existing e-instructors were used to. NPC piping instructors stated 'anxiousness' about the transition of their teaching to the online environment, commenting that 'none of us are media professionals'.¹⁷ After going live, the NPC commented that 'it's a very unfamiliar way of teaching for us', 'a new skill to learn'.

The challenge of the new skill of teaching within a digital environment was one which the NPC need to address, and assess, over time – both as an organisation and as individual instructors.¹⁸ Given the mixed objectives of the project – pedagogical, cultural, social, and commercial – there is a need to ensure quality and excellence of the teaching provision alongside the financial drivers.

The first of the scheduled teacher training sessions indicated that there were tensions between these objectives. For the piping instructors, quality of the teaching and the excellence of the NPC brand was a crucial consideration, rather than the business opportunity it presented to the NPC.¹⁹ One of the criticisms frequently made of MOOCs is that they do not offer the same experience as in-class or indeed blended learning, as the one-to-many, or asynchronous model, does not allow for classroom interaction.²⁰ Although in terms of technology, Adobe Connect does allow for classroom interaction, the choices taken about modes of delivery make such interaction more or less available (e.g. whether communication in the digital classroom is principally set up to be one-way (a broadcast method) or two-way (a more discursive approach); providing archived lessons on demand offers convenience for the learner; and the possibility of reusing content as a business model, but disables interaction with the instructor).

3. Results

By the end of the project's funding period (March 2013), the NPC had put in place the technologies for both livestreaming and its E-Learning Portal. Three events were livestreamed, and the Portal was – after a short period of training the instructors and testing – ready for use. The registrations and viewers for the (initial, and free) livestreams varied depending on the event, ranging from 1723 for the Pipe Idol Final, 4323 for the Quartets Competition, and 5317 for the Glenfiddich Piping Championship.

Within the first two weeks of the E-Learning Portal going live, there were 20 full monthly subscribers, which NPC saw as 'more than [...] anticipated'.²¹ By October 2013, 44 subscriptions had been purchased. This figure was below the estimation made by NPC in its application (100 monthly subscribers within six months, rising to 300 within a year), but was supplemented by the pay-per-view lessons bought, which numbered 76 in total.²² From May-October 2013, the E-Learning Portal website averaged just over 1300 visits per month, with approximately two-thirds of the visits being returning traffic, and one-third new visitors (see Figure 1). In terms of the location of visitors to the site, the highest number of visits came from the UK (5154), followed by the US (3935), Canada (1550), and then Austria (765), Belgium (654), the Isle of Man (450), Germany (325), Ireland (222), Hong Kong (182) and the Netherlands (171) (see Figure 2).

¹⁷ Interview with Roddy MacLeod and John Mulhearn, National Piping Centre, November 2012.

¹⁸ Interview with John Mulhearn, National Piping Centre, May 2013.

¹⁹ Field Notes from National Piping Centre instructors' training session, February 2013.

²⁰ For commentary, see 'Online Mooc courses "could create divisions in society"', BBC News, 4 March 2014, <http://www.bbc.co.uk/news/education-26431790>.

²¹ Interview with John Mulhearn, National Piping Centre, May 2013.

²² National Piping Centre, 'Digital R&D Fund for the Arts in Scotland Application', April 2012.

Audience Overview

May 1, 2013 - Oct 31, 2013

Email Export Add to Dashboard Shortcut

All Visits 100.00%

Overview

Visits VS. Select a metric

Hourly Day Week Month

Visits



5,730 people visited this site



Returning Visitor New Visitor

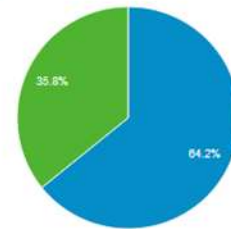


Figure 1: E-Learning Portal website traffic analysis, May-October 2013

Country / Territory	Acquisition			Behavior			Conversions		
	Visits	% New Visits	New Visits	Bounce Rate	Pages / Visit	Avg. Visit Duration	Goal Conversion Rate	Goal Completions	Goal Value
	14,770 <small>% of Total: 100.00% (14,770)</small>	35.83% <small>Site Avg: 35.77% (0.17%)</small>	5,292 <small>% of Total: 100.00% (5,292)</small>	33.28% <small>Site Avg: 33.28% (0.00%)</small>	3.78 <small>Site Avg: 3.78 (0.00%)</small>	00:04:11 <small>Site Avg: 00:04:11 (0.00%)</small>	0.00% <small>Site Avg: 0.00% (0.00%)</small>	0 <small>% of Total: 0.00% (0)</small>	\$0.00 <small>% of Total: 0.00% (0.00)</small>
1. United Kingdom	5,154	34.96%	1,802	29.12%	4.05	00:04:54	0.00%	0	\$0.00
2. United States	3,935	39.85%	1,568	35.10%	3.52	00:03:40	0.00%	0	\$0.00
3. Canada	1,550	38.32%	594	46.90%	2.84	00:02:43	0.00%	0	\$0.00
4. Australia	765	35.82%	274	27.71%	4.67	00:05:22	0.00%	0	\$0.00
5. Belgium	654	8.72%	57	24.46%	4.36	00:04:38	0.00%	0	\$0.00
6. Isle of Man	450	1.11%	5	19.78%	6.14	00:07:21	0.00%	0	\$0.00
7. Germany	325	53.54%	174	36.31%	3.65	00:03:10	0.00%	0	\$0.00
8. Ireland	222	41.89%	93	25.23%	3.39	00:04:25	0.00%	0	\$0.00
9. Hong Kong	182	17.50%	32	46.70%	3.52	00:03:34	0.00%	0	\$0.00
10. Netherlands	171	45.03%	77	32.16%	3.55	00:02:14	0.00%	0	\$0.00

Figure 2: E-Learning Portal website traffic analysis, May-October 2013 by location

These uptake figures from the first six months of the E-Learning Portal do not yet provide enough evidence to comment on the degrees of success with regards to the majority of the aims of the project. The Portal undoubtedly has the potential to fulfil all of its aims and to enable substantially the activities of NPC beyond its physical walls, and the early indications of subscriptions are showing that potential beginning to be fulfilled.

The projects has three different revenue streams – the two modes of payment for the E-Learning Portal (subscription and pay-per-view) and monetisation of livestreaming – but it is not yet clear which part of the business model will prove the most successful. The two modes of payment for the E-Learning Portal (the monthly subscription service and pay-per-view) and the two modes of delivery (live and recorded/archived) need careful analysis, in case it becomes evident that customers are attracted by modes which generate less revenue.

There are outstanding questions about what content and at what skill level are most appealing to the market, and also (in terms of live delivery) what time of the day sessions should best be delivered, given the international nature of the market. The E-Learning Portal technologies were tested with a small focus group, but many of these questions to do with the business model and content remain to be answered, as a market-research approach was not embedded into the development stage of the project. It is probable that only in six months' to two years' time user-behaviour and uptake will become clearer.²³

Analysis would suggest that – although the pay-per-view mode is more popular – only £380 had been generated from the activity by October 2013, given the £5 per lesson charge. However, as all content is archived, on-demand content, delivery is cost free. The 44 subscribers deliver a revenue of £1320 per month to the NPC, and as such, already demonstrate that the subscription model is more lucrative than the pay-per-view mode. However, while growing future subscriptions will increase revenue, this model also requires a constant programme of new lessons in order not to lose existing subscribers.

Challenges articulated by the NPC in October 2013 included those addressing time zones, with key audiences being based in the UK but also the US and Canada. Therefore, experimenting with the most popular times at which to deliver live lessons is part of the ongoing R&D process for NPC as it flexes its developing business model. Part of this ongoing process is an exploration of hiring North America-based tutors, who would be able to deliver live lessons in evening timeslots for their respective time zones.

The project plan adopted by the NPC did not allow for experimentation with content and delivery modes within the funded period of the project's development, and so market research aspects of R&D were not enabled. David Craik of YBH did articulate a difference between innovation (which YBH saw the project to be delivering very clearly in terms of the NPC business model) and what they perceived as genuine R&D, which had not happened: 'to my mind the real innovation in the project is – and has always been – in the business side of it [...] the fact that the Piping Centre are taking what they do and innovating in terms of business model, to do it around the world [...] I don't know of any other music learning institution [...] doing live lessons around the world'.²⁴ A longer-term and user-focused approach of testing beyond the funding period might enable that the innovation of the business model is effectively embedded with the ongoing project.²⁵

Throughout the development, the relationship between NPC and YBH was mutually viewed as very good. YBH perceived the relationship to be that of a client-supplier because of the way in which the fund was constructed, but did nonetheless feel that their input had been crucial in conceptualising as

²³ Interview with John Mulhearn, National Piping Centre, May 2013.

²⁴ Interview with David Craik, Yellow Brick House, January 2013.

²⁵ Interview with David Craik, Yellow Brick House, January 2013.

well as delivering the project, both at application stage and within the funded period. The interactions, collaborative working and mutual ownership of the project were strong, despite the relatively small budget, including the allocation of funding to YBH. YBH valued NPC's purpose and vision for the project, which had added-value benefits for their own business and technological development. YBH staff were able to expand their own portfolio and technological expertise. The degree and type of innovation in the project was primarily in the area of the still-developing E-Learning business model, but for YBH it allowed a degree of technological innovation in terms of the integration of systems and the successful bonded SIM device used in the livestreaming.

Livestreaming at a remote location (the Glenfiddich Piping Championship) with patchy access to mobile signals was a technological challenge, and the solution YBH used – a bonded SIM device with four SIM cards – enabled continuous, quality streaming with no drop of signal. This is an aspect of delivery that YBH were particularly concerned about, but the technological success has given them confidence that they can deliver further quality livestreaming of events in remote locations in Scotland.

Given the relatively small budget granted to the development and launch of the E-Learning Portal, the technology partner took an investment decision to give more time to the project than that for which they were formally contracted. There is a purpose to such a decision – the successful delivery and continued usage of the E-Learning Portal would provide a good case study for YBH for future clients. As a technology partner YBH demonstrated a nuanced understanding of the process of tendering and pitching for work, and of how to price digital services competitively within the Digital R&D Fund for the Arts in Scotland, with an eye to the development of their own range of clients and technological expertise.²⁶

By October 2013, it was evident that NPC was already progressing towards fulfilment of the majority of its aims, with future months and years offering the potential to embed further the digital developments enabled by the Digital R&D Fund for the Arts in Scotland. Already, it is clear that livestreaming and the E-Learning Portal are, in accordance with the project's aims, broadening engagement with pipers around the world with limited access to tuition because of geographical barriers; deepening the NPC's engagement by providing educational services which complement music tuition; and developing new revenue streams for tuition as well as engaging with new markets in Scotland and around the world. The aim to provide a model that could be utilised by other arts organisations in Scotland to deliver music education is explored in more depth in the subsequent section, while the intent to diversify the NPC's Higher Education offering by allowing the development of distance learning courses with HE partners is discussed in section 5.

4. Insights

Partnership, Planning and Vision

The E-Learning Portal and livestreaming project benefitted from a clearly articulated vision from NPC. This vision was a response to a business need (limited physical space), an expansion opportunity (reaching to virtual audiences), carefully aligned with the NPC's cultural mission (to be the 'world centre of excellence for the study and promotion of the Great Highland Bagpipe'). Coupled with a careful choice of partner, this clearly articulated vision mitigated the risk of the new relationship between NPC and YBH.

As the previous section indicated, the strong sense of vision for the project enabled YBH to grasp rapidly NPC's aims and aspirations. This strong sense of vision allowed YBH to begin the technological development with clear direction and strong communication with NPC. Although the

²⁶ Interview with David Craik, Yellow Brick House, January 2013.

initially projected launch dates for the Portal were moved, these changes were made for understandable reasons (for training the piping instructors and user-testing with a focus group) and ultimately benefited the project. That a launch date for the Portal itself was not publicised until it – and the instructors – were ready, meant that behind-the-scenes shifts did not impact on public perceptions of the NPC.

Revenue and Delivery Modes

With the evidence currently available from the E-Learning Portal, it is not yet possible to say which of the business models is the most successful. Take-up is higher for Pay-for-View, but subscriptions generate more revenue. Given the nature of the model, subscription revenue is by definition repeat revenue. However, monitoring the point at which students stop subscribing (i.e. after how many months) will also help NPC develop understanding of the subscription model.

Ongoing analysis will be important in terms of determining the popularity of the live and recorded/archived sessions, and also in terms of thinking about timing and delivery of the live sessions, in order to reach key international markets.

Teaching Traditional Music in an Online Environment

Given the global interest in traditional music, NPC perceived and effectively pursued a strategy for catering to a market via digital technologies which it otherwise wouldn't have been able to reach. The development of both the E-Learning Portal and the livestreamed events have demonstrated a desire for audiences to engage with traditional music in an online environment.

For the piping instructors, accustomed to traditional face-to-face teaching modes, or at least one-to-one via Skype, a switch to teaching in the Adobe Connect classroom did present challenges. These were both in terms of becoming accustomed to the technology, and in terms of anxieties around the continuation of quality teaching provision.

The former challenge was addressed via a number of training and trial sessions, both with YBH leading the training, and via the 'focus group' of existing Skype students. The challenge of the continuation of quality teaching provision is a broader issue, and relates to the ongoing discussion of the benefits and potential drawbacks of online, remote, and asynchronous learning referred to the Section 1. It is clear, however, that online delivery is for NPC a supplement to, rather than a replacement of, existing teaching methods, and enables a reach to students who would otherwise have no access to its teaching at all. Nonetheless – like any form of teaching – it will be important for NPC to seek feedback and conduct evaluations with its students, and also to discuss with its teaching staff the directions of its delivery, and the implications for their pedagogical practice.

Lessons Learned

- Digital technologies, combined with commercial approaches, have the capacity to bring traditional cultures to global audiences and to develop international markets.
- A careful and considered choice of technology partner will enable a beneficial ongoing relationship.
- A very clear focus and strongly articulated vision enables a collaborative and effective working relationship with the technology partner.
- Consideration of time and project-management, including realistic planning of launch dates and incorporating the need to test the technologies and train a variety of users is important.
- Consideration of how early and iterative market research could be embedded thoroughly into development processes would have enabled a more user-focused approach; nonetheless, this is taking place post-launch and with the live project.

5. Future

The E-Learning Portal – having been launched in late spring 2013 – is still only at its beginning and given the nature of both the Fund and the NPC's approach within it – future R&D will be necessary to determine the degree of its success and future shape. How effectively the NPC's E-Learning Portal might provide a model that could be utilised by other arts organisations in Scotland to deliver music education remains to be seen, depending on the flexing of the business model.

With additional funding from AmbITion Scotland, NPC have furthered capabilities (both in-house and with the NPC partner) to deliver further livestreamed events.²⁷

After the initial development and testing of the business model for both the E-Learning Portal and the livestreaming, the NPC has a number of forthcoming challenges and developments. Currently, the E-Learning Portal is not tied into its current Higher Education offering and partners. As such, the NPC are taking forwards discussions with their HE partners, as well as considering the provision of lessons specifically oriented towards schools.

At the same time as developing livestreaming and the E-Learning Portal, NPC was also taking forwards other digital education plans. These plans have included the conceptualisation and conversion of the NPC's existing *The Highland Bagpipe Tutor Book*, a print product produced and sold, with a CD-Rom add-on, via the NPC's physical and online shops. Over the course of 2012-13, the *Tutor Book* was developed as an iOS app with Ceol Mor Software and Publishing, and from January 2014 was made available in Apple's app store.

6. Further resources

Further project information

The National Piping Centre <http://www.thepipingcentre.co.uk/>

The National Piping Centre's E-Learning Portal: <http://elearning.thepipingcentre.co.uk/>

Noting the Tradition (the National Piping Centre's oral history project):
<http://www.thepipingcentre.co.uk/museum-heritage/noting-the-tradition/>

The National Piping Centre Bagpipe Tutor App (iOS): <http://www.thepipingcentre.co.uk/bagpipe-education/npc-tutor-book-app/>

The National Piping Centre livestreaming with AmbITion Scotland: <http://vimeo.com/81706128>

Yellow Brick House: <http://yellowbrickhouse.co.uk/>

Tools and guidance

²⁷ See <http://vimeo.com/81706128>.

Adobe Connect E-Learning and support pages:

<http://www.adobe.com/uk/products/adobeconnect/elearning.edu.html> <http://helpx.adobe.com/adobe-connect.html>

WordPress and support: <https://wordpress.org/> <https://wordpress.org/support/>

The University of Edinburgh's MOOC on E-Learning and Digital Cultures:

<https://www.coursera.org/course/edc>

Podcast guidance on developing MOOCs:

<http://www.timeshighereducation.co.uk/comment/podcasts/the-podcast-englands-first-coursera-moocs/2009232.article>

Website focusing on case studies, research, reports and thinking relating to aspects of virtual learning

<http://www.virtuallearning.org.uk/>

Further reading

Sam Brenton, 'E-learning - An Introduction', in Heather Fry, Steve Ketteridge, and Stephanie Marshall, eds., *A Handbook for Teaching and Learning in Higher Education: Enhancing Academic Practice* (Abingdon: Routledge, 2009; 3rd edn.), 85-98.

Zoe Corbyn, 'This Could be Huge' THE, 8 December 2012

<http://www.timeshighereducation.co.uk/features/this-could-be-huge/422034.article>

J P Cuthell, *Virtual Learning* (Ashgate: Aldershot, 2002).

'Online Mooc Courses "Could Create Divisions in Society"', BBC News, 4 March 2014,

<http://www.bbc.co.uk/news/education-26431790>.

Panagiotis Tsigaris, 'Moocs are a Good Alternative to Books', THE, 24 October 2013

<http://www.timeshighereducation.co.uk/comment/opinion/moocs-are-a-good-alternative-to-books/2008345.article>

Other examples

Ceol Mor Software and Publishing (with whom NPC developed the Bagpipe Tutor app):

<http://www.ceolmor-software.com/>

The Online Academy of Irish Music (OAIM), an online learning environment for traditional Irish music and song: <http://www.oaim.ie/>