

Enabling City-wide Audience Evaluation: Plymouth Artory Metrics Development



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Purpose of this report

This report provides a record of the process that was used to develop measures for the Artery project. It is also aimed at allowing other organisations considering adopting metrics to benefit from the collaborative effort that yielded the Artery smartphone app survey items.

About the report author

Dr Eric Jensen is a social scientist based at the University of Warwick, where he teaches on modules such as 'The Practice of Quantitative Research' and 'Media, Audiences and Social Change'. His forthcoming books include: *Doing Real Research: A Practical Guide to Social Research* (SAGE), *Making the Most of Public Engagement Events and Festivals: Research, Principles and Practice* (Cambridge University Press) and *Mediating Creativity: Technology and Public Engagement* (Palgrave). Jensen was the research partner on the Qualia project (qualia.org.uk), collaborating with i-DAT to develop and test the research and evaluation value of new technologies such as automated social media analysis, smartphone app-based data collection and automated smile measurement (funded by Nesta, Arts Council England and the Arts and Humanities Research Council). He has also been Principal Investigator on recent Arts & Humanities Research Council projects, including 'Using Social Media to Identify and Leverage Engagement (SMILE) with Arts and Culture' (Aug. 2014 - Aug. 2015) and 'The Role of Technology in Evaluating Cultural Value' (2014).

Introduction

Artory¹ is an incentivised ‘what’s on’ app for cultural events in Plymouth, which enables users to leave feedback and cultural organisations to understand their audiences better. The real-time data analytics provided by user feedback through the Artory system gives participating cultural organisations key audience information that can inform their engagement practices. The software behind Artory is open-source, meaning that once it has been piloted in Plymouth, it will be available for use by other cities to use. This city-wide initiative has been produced by i-DAT and Plymouth Arts Centre with the Plymouth Culture Guide Group: Theatre Royal Plymouth, Barbican Theatre, Plymouth City Museum and Gallery, The Gallery at Plymouth College of Art, Peninsula Arts Plymouth University, KARST, Ocean Studios, Take a Part, Plymouth Dance and Plymouth Culture.

The development of metrics for this project follows on from the Manchester Metrics (2013) report. It built on this prior work by bringing public-facing arts organisations from across Plymouth into dialogue with a social scientist specialising in public engagement evaluation and cultural impact research. This dialogue has yielded a research framework and specific audience profile and outcome measures that are both methodologically robust and useful for informing practice across a wide range of arts organisations. These specific measures were then implemented using the new Artory smartphone app, which provides smart ‘what’s on’ functionality for public arts audiences while seamlessly gathering feedback data for the Plymouth Artory Metrics Project.

This integration of enhancements to public audience experience and robust evaluation using cutting edge open source technology makes this pilot project unique. Other unique aspects of this project include:

- Provides practical means of establishing an effective sector-led metrics framework to evaluate arts and culture activities.
- Enables audience-led definition of quality of experience and depth of engagement, self-reported benefits of participation.
- Enables for first 1st time accurate evaluation of audience patterns, experiences across venues.
- Employing consistent measures of both audience characteristics and outcomes across different cultural experiences and locations.
- Enables new insights about the nature, drivers and patterns of cultural participation across Plymouth. For example, the data gathered through Artory would enable the development of predictive models, testing of existing assumptions about cultural audiences and their behaviour, etc.
- Will allow cultural organisations to make evidence-based decisions to improve audience experiences and extend participation.

This report describes the process that has been followed to develop metrics for use in this project shaped for the medium of smartphone app-based data collection, and the outcomes of the Artory Phase 1 evaluation design.

¹ The Artory app is designed and developed by Elixel with i-DAT. Artory is funded by Plymouth Arts Centre, i-DAT with Plymouth University, Elixel, Destination Plymouth, Plymouth City Council and Plymouth Culture.

Methods

To develop the set of metrics to be used in the Artory app, social scientist Dr Eric Jensen (University of Warwick) reviewed the Manchester Metrics report (Knell, 2014), distilling the key messages and presenting those to the Plymouth Culture Guide Group. He then prepared a set of possible outcome measures focusing on quality of experience and impact, as well as a set of demographic measures focusing on audience characteristics. Some of the possible measures were adapted from the Manchester Metrics report and others came from Dr Jensen's prior research on cultural audiences.

The Manchester Metrics project report offered a valuable starting point in that it provided one view of the kinds of outcomes that should be measured by arts organisations. General categories suggested in this report such as 'Quality of experience / depth of engagement' and some of the suggested 'outcome statements' offered a jumping off point for the Plymouth Artory Metrics Development process. However, the scope of outcomes discussed in the Manchester Metrics report also included areas that were not relevant for the present project (e.g. 'technical quality' of performances, artistic rigour, 'quality of creative process' and 'organisational health'). Moreover, the Manchester Metric project team did not include social science or research methods expertise. Therefore, some of the suggested 'outcome statements' in this report were not methodologically valid survey questions as written (therefore not usable for the present project).

Plymouth Artory Metrics Development workshop

A workshop was convened by Birgitte Aga (i-DAT) on the 4th of November 2014 to discuss the merits and limitations of the ideas from the Manchester Metrics project and the possible measures put forward by Dr Jensen.

This Metrics Development workshop was described to participants from the Culture Guide Group as follows:

The focus of the workshop will be to develop our own set of metrics for evaluating quality relating to individual cultural events. The output will be a set of 10–15 statements, measuring quality, which will be implemented in the 3rd level feedback function in the app.

Dr Eric Jensen will lead the workshop and start off with presenting some thoughts on the notion of measuring quality, the strength and weaknesses of the Manchester Metrics and propose a selection of specific statements he has developed which could capture the quality and impact of cultural experiences in Plymouth.

The intention is to use these statements proposed by Eric as a starting point which you can adapt, add to and change to develop a set of statements which you collectively feel would measure the quality and Impact of cultural experiences relating to events.

It would be useful if each of you attending could consider what your organisation would define as 'quality and impact of a cultural experience' and send across any related statements/questionnaires or frameworks (you are using or would like to use) before the workshop.

The workshop lasted for four hours, ending with an agreed set of audience profile measures, as well as a set of outcome statements that had support across multiple cultural organisations. This set of outcome statements then needed to be narrowed down further. Jensen refined the statements based on survey design principles, for example, ensuring the inclusion of both negative and positively framed statements for balance, as well as shortening the questions for use in a smartphone app. The statements were then placed into a web-based survey, which the full set of cultural organisations within the Plymouth Culture Guide Group were invited to complete to indicate their prioritisation of the different items by rating each one on a 7-point scale from 'very interested in using' to 'very disinterested in using' (with a 'neutral' midpoint). The results from this survey (n=9) were used to decide which outcome statements were included in the Artory app.

Results

To avoid over-taxing app users / respondents, three different levels of feedback are employed with audience members invited to opt into further levels of depth in providing feedback in order to unlock greater incentives. Level 1 is the most basic level, which includes a matching pre- and post-visit survey item evaluating expectations and outcomes.

Key demographic questions included in the app

Profile questions only need to be completed once for each user because response data automatically attaches to that individual. The profile can be completed progressively over time.

Some of the selected profile variables provide a picture of an organisations' audience demographic characteristics:

- **Gender**
- **Postcode**
- **Employment category**
- **Highest completed level of education**
- **Annual household income**

The two other profile questions also serve a useful practical purpose within the app. First, a measure asking about cultural genre preferences is used within the Artory system to recommend other appealing cultural activities the user may be unaware of.

- **Types of cultural events interested in**

The next item identifies the starting level of cultural participation of the user, thus allowing the system to suggest new sites offering similar cultural experiences that may be of interest.

- **Cultural venues visited in the last 12 months**

This item also allows for an evaluation of the impact of the Artory app itself. Users will be asked to refresh their responses to this item every 12 months, thereby enabling an evaluation of the extent of spread in Artory audience participation.

Pre-visit expectations and Level 1 outcome measures included in the app

During the workshop, the measures to be used for measuring expectations and outcomes at the first level of feedback were agreed.

PRE-EVENT QUESTION

It was decided there would be only one pre-visit item, which would be allocated/triggered when an app user places an event in the planner or attends a venue (location check).

- **What are you hoping to gain from attending this event? [tick all that apply]**
 - Fun Day Out
 - Learning
 - Cultural Experience

- Community Experience
- Inspiration
- Family Time
- Good Time with Friends
- Professional Networking
- Entertainment
- Other

POST-VISIT LEVEL 1 FEEDBACK QUESTION

The matching feedback question asked after the visit enables measurement of whether expectations have been met. That is, what is the extent of alignment between the expectation and Level 1 outcome responses?

•What do you feel you gained from this event? [tick all that apply]

- Fun Day Out
- Learning
- Cultural Experience
- Community Experience
- Inspiration
- Family Time
- Good Time with Friends
- Professional Networking
- Entertainment
- Other

If app users elect to progress to providing Level 2 feedback, it is then possible to evaluate the extent to which different expectations and outcomes yield satisfaction, enjoyment, etc.

Level 2 and 3 outcome measures included in the app

The full range of outcome statements that emerged from the Metrics Development process are as follows:

SATISFACTION

- 'Generally satisfied'
- 'Met expectations'
- 'Poor quality'
- 'Not to my taste'
- 'Poor use of my time'
- 'Good value'
- 'I'd like more experiences like this'

EXPERIENCE

- 'Saw new things or ideas'
- 'Bored'
- 'Felt relevant'

- 'Relevant to people like me'

- 'Great atmosphere'
- 'Enjoyable'
- 'Disappointing'
- 'Inspirational'
- 'Able to participate'
- 'Emotional experience'
- 'Exciting'
- 'I didn't get it'

IMPACT

- 'Made me think about things differently'
- 'It changed my views'
- 'Increased my interest in the event topic'

BEYOND THE PERFORMANCE/PRODUCTION

- I felt welcomed at the venue.
- The venue was uncomfortable.
- The venue was physically accessible.

Selecting Level 2 Questions

Given a limited number of questions to ask app users about their cultural experiences, the highest priority outcome is general satisfaction and enjoyment. It was important to also include a negative outcome measure ('Disappointing') to ensure balance to mitigate against acquiescence bias (Tourangeau, 2000; DeVaus, 2002).

The Level 2 outcome measures used in the Artery app were as follows:

Based on your experience of this event, please indicate your level of agreement with the following descriptions

- 'Generally Satisfied'
- 'Disappointing'
- 'Enjoyable'

App users indicate their level of agreement on each of these items on a sliding scale. Response options for each item are:

- Strongly Disagree
- Disagree
- Somewhat Disagree
- Neutral (rest position)
- Somewhat Agree
- Agree
- Strongly Agree

Finally, there is a further option at the bottom right hand side of the app screen, which says 'NOT APPLICABLE'.

The use of a standard 7-point Likert scale (strongly disagree to strongly agree) as the response options for these items has some key benefits:

- Uses a well-established (in the social sciences) survey design structure
- Enables the use of powerful statistical tests requiring continuous data
- Use of standard response options simplifies user experience of providing feedback and the data analytics structure

The full list of outcome statements considered for Level 2 and 3 of the Artory app were developed through the ranking of options by participating arts organisations in a web-based survey² following the Metrics Development workshop. These outcome statements were designed to be short and easy to answer on a smartphone app. The highest scoring items in this survey were selected, except where Dr Jensen had to include some slightly lower scoring items (viz., 'The venue was uncomfortable') in order to balance the quantity of positive and negative outcome statements.

Therefore the final list of outcome measures included for Level 3 are:

- 'Poor quality'
 - 'Great atmosphere'
 - 'Enjoyable' (placed in Level 2)
 - 'Disappointing' (placed in Level 2)
 - 'Inspirational'
 - 'Exciting'
 - 'I didn't get it'
 - 'Made me think about things differently'
 - 'Increased my interest in the event topic'
 - 'I felt welcomed at the venue.'
 - 'The venue was uncomfortable.'
 - 'The venue was physically accessible.'
 - 'Saw new things or ideas'
 - 'I'd like more experiences like this'
-

Conclusion

This report has summarised the process involved in taking discussions of an arts sector-led metrics framework from idea to reality. The design of survey items that were methodologically valid and usable in smartphone app-based data collection was undertaken by Dr Eric Jensen based on consultation with the Plymouth Culture Guide Group members. These items were then whittled down to a smaller number through a quantitative survey of Group members. Finally, Jensen balanced the measures and ensured the responses options were methodologically sound.

The results of these efforts are presented in this document so that other cultural organisations in the UK and beyond can benefit from the efforts and expertise that have been invested into the Artory project's metrics framework. This framework has been implemented through the Plymouth city pilot of the Artory smartphone app, which is currently (from 30 January 2015) generating audience expectations and outcome data.

References

De Vaus, D. A. (2002). *Surveys in social research*. London: George Allen & Unwin.

Knell, J. (2014). Manchester Metrics Pilot: Final Report of Stage One. Manchester: Arts Council England.

Tourangeau, R., Rips, L. & Rasinski, K. (2000). *The Psychology of Survey Response*. Cambridge: Cambridge University Press.

Appendix 1: Survey about Possible Outcome Statements

Survey of Organisations' Views for Plymouth Artory project

Artory Outcome Statements Survey

Please indicate below how interested you are in using the following items in the Artory mobile phone app. Please note that the questions below will all have the same 7-point Likert-scale response options structure, going from Strongly disagree to Strongly agree [neutral in the middle] with a 'Not Applicable' or 'Skip' option in the bottom right hand corner. Also, these questions have been deliberately truncated for ease of use on the app.

The results of this survey will be analysed quantitatively to identify which items are deemed to be most useful by the greatest number of participating arts organisations (these will then be used in the Phase 1 Artory App).

Please note that for methodological reasons, there needs to be a roughly equal balance of positively and negatively framed questions (the latter will be automatically reverse coded in the analysis).

Instruction to the respondent will be: 'Based on your experience of this event, please indicate your level of agreement with the following descriptions'.

Response options for all below will be:

- Strongly Disagree
 - Disagree
 - Somewhat Disagree
 - Neutral
 - Somewhat Agree
 - Agree
 - Strongly Agree
- + Tick box at bottom right: NOT APPLICABLE

SATISFACTION

'Generally satisfied'

'Met expectations'

'Poor quality'

'Not to my taste'

'Poor use of my time'

'Good value'

'I'd like more experiences like this'

EXPERIENCE

'Saw new things or ideas'

'Bored'

'Felt relevant'

'Relevant to people like me'

'Great atmosphere'

'Enjoyable'

'Disappointing'

'Inspirational'

'Able to participate'

'Emotional experience'

'Exciting'

'I didn't get it'

IMPACT

'Made me think about things differently'

'It changed my views'

'Increased my interest in the event topic'

BEYOND THE PERFORMANCE/PRODUCTION

I felt welcomed at the venue.

The venue was uncomfortable.

The venue was physically accessible.