

## *How the Arts and Culture Industry in Singapore is Taking on Big Data*

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### **Abstract**

Data is a big buzzword today and the arts and cultural industry is not immune to the hype. My paper looks at the way data science is impacting arts programming and policies. The arts groups and institutions in Singapore generally divide their data into two categories. One is institutional collections, which could include both physical artefacts and intangible knowledge; and the other is administrative data, which includes visitor analytics, traffic patterns and ticket sales. The way they handle the former is influenced by input from the latter category. Arts groups are now looking at visitor data to help them sharpen their programming and reach their target audiences. From multiple categories of data to the range of uses for each category of data, it is easy to be overwhelmed by the amount of data being generated by, and about, the arts industry. The key to managing this avalanche is to be very clear what kind of data one needs and how that helps one achieve one's goals.

Keywords: Big data, Arts and culture , Theatre, Archives

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This paper arose out of a story I wrote for The Straits Times, the largest English language broadsheet in Singapore. I am the senior culture correspondent for the paper where I have been covering the arts and culture industry in the country for more than 20 years and as such, I have been a close observer of trends in the industry. The information presented here is derived firsthand through face to face interviews as well as from direct sources, ie, the institutions themselves. My interest in big data arose out of a recent push by the Singapore government for a Smart Nation that utilises science and technology to improve processes. The arts and culture industry has taken to big data as a means to varied ends: to manage collections, share information, sharpen marketing and programming.

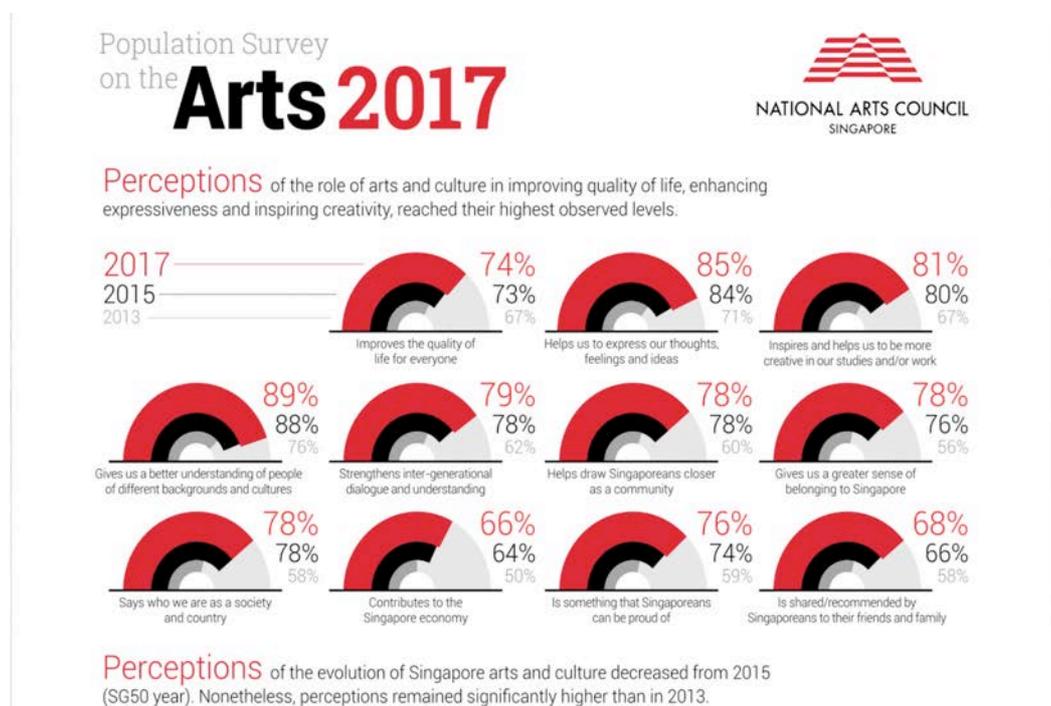
Generally there are two different types of data the industry has to deal with: hard data and soft data. Hard data refers, essentially, to the quantifiable numbers such as visitor analytics, traffic patterns and ticket sales. Soft data refers to databases for institutional collections, which includes artefacts, as well as institutional knowledge. I will address how data is collected, and how it is used in six case studies.

### Case study 1: National Arts Council

The National Arts Council is the central administrative body for the arts scene. It disburses government funding for the arts, manages arts venues and festivals, as well as planning and offering policy advice to the government.

In the process, it collects a lot of data about the arts in Singapore.

The big data aggregate the Council collates is the biennial Population Survey on the Arts.



**FIGURE 1: SCREENSHOT OF ONE SET OF STATISTICS CAPTURED BY THE NAC. (SOURCE: [WWW.NAC.GOV.SG](http://WWW.NAC.GOV.SG))**

Figure 1 gives some idea of the data that the Council collects. The survey looks at everything from arts attendances to the factors that affect arts consumption. In the past, the survey was focused on quantitative figures - how many ticketed versus non-ticketed attendances, how many arts events in a year etcetera. In recent years, however, the Council has recognised the importance of qualitative information and analysis, so it is now also looking at more intangible issues such as audience attitudes and perceptions.

The data the Council compiles is used in a variety of ways. The Council's chief research officer Dr Sharon Chang said: "We deliver data for policy-making."<sup>1</sup>

So the data has a concrete impact on cultural policies and funding.

In terms of cultural policy, Dr Chang explicitly relates the Council's data collection to the construction of such manifestos as the recently released Our SG Arts Plan, the Council's roadmap for arts development in the next five years.<sup>2</sup>

The data is also used as the rationale for fund disbursement. Dr Chang explained: "Data is a common platform which people use to allocate resources. If I were comparing three events, I have to prioritise. If I decide footfall is my priority, I will take the event with the highest number. But if reaching new segments is my priority, I might go for that little niche. But, again, I would need some data."

Data is a guide for the Council, who use it to justify expenditure and explain plans to the bureaucrats and policy wonks.

As an event organiser, the Council uses data to determine ticket prices.

The Singapore Writers Festival, for example, introduced a \$15 ticket in 2011. Since then, the price has been increased to \$20 in 2014 and \$25 in 2018.

The pricing policy is driven by data, including a "predicted average willingness to pay" and monthly household income, as well as post-event surveys to ensure that audiences feel the ticket price is value for money.

## **Case study 2: National Gallery Singapore**

The National Gallery Singapore is a relatively new institution - it opened in 2015 - and it has the world's largest collection of Singapore and Southeast Asian art. Because it is new, it has taken quite enthusiastically to the application of data science. Mr Chris Lee, its chief marketing officer, said that the Gallery looks at two categories of data.

One is business intelligence, data that will help it run its business better and track key performance indicators. This includes all the usual hard data: items such as ticket sales and budget, etcetera.

The second category is visitor analytics, which the Gallery has delved into extensively and in the most sophisticated fashion, compared to other cultural venues. The Gallery uses feedback surveys and sample testing to actively tweak its programming.

Its most recent blockbuster show was an extensive survey about the art movement Minimalism. Before the show even opened, the Gallery organised feedback sessions.

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<sup>1</sup> Direct quotes are taken from face to face interviews.

<sup>2</sup> For more information about Our SG Arts Plan, go to the Council's website at [www.nac.gov.sg](http://www.nac.gov.sg). I have also written an analysis of the roadmap (<https://www.straitstimes.com/lifestyle/arts/our-sg-arts-plan-points-to-importance-of-nurturing-an-audience-for-the-arts>).

When the feedback showed that audiences did not understand what the art movement was about, the Gallery added more explanations to its wall texts and added more engaging ancillary programmes, such as a toy piano concert.

Mr Lee said the Gallery plans to move these feedback sessions “upstream”, so that curators can make changes earlier to programming.

Visitorship is a key performance indicator for the Gallery, which explains why visitor tracking is a priority.<sup>3</sup> In fact, the Gallery has even commissioned a customer segmentation study to identify the types of audiences it attracts. Using the study, the Gallery is planning to target certain types of visitors based on what they look for at the venue. Mr Lee cited examples such as the edutainment visitor, who is motivated by knowledge acquisition, and the communitas visitor, who is keen on social belonging and heritage.

### **Case study 3: The Esplanade**

The Esplanade is Singapore’s premiere performing arts centre. Opened in 20XX, the Esplanade has played a central role in seeding major festivals and supporting the local arts scene. Its Mosaic Music Festival, for example, helped open up a market for world and indie music festivals, while its annual Baybeats festival is the only large scale platform for local music groups.

As a major force in developing audiences, the Esplanade is now facing major competition as the arts calendar in Singapore has become very crowded and it is an increasing struggle for venues and groups to attract audiences. Ticketed attendance in Singapore declined by 12 per cent from 2.06 million in 2012 to 1.81 million in 2016 so marketing is very important for arts venues.

Ms Eunice Yap, the Esplanade’s chief marketing officer, said that data helps the Esplanade better engage their visitors and plan their programming and operations in ways that better serve them.

“We recognise that as we get to know our patrons and visitors better, there is an opportunity for deeper engagement with them. This in turn helps us better serve and cater to their preferences. Understanding who our audiences are also informs our programming direction and how we can build new audiences for the diverse range of programmes we have invested in, that we believe are of value to society.

Consolidating data about their customers helped Esplanade streamline their marketing. They launched a membership card Esplanade&Me which offers behind-the-scenes access with tours and workshops. Using the data from that card, they created two subsidiary programmes to target particular demographics. PIP’s Club is for children aged 12 and below and their parents, and JOYears for seniors aged 55 and above. With feedback from customers, they further refined their marketing strategies. One example is that they send information to seniors via Whatsapp because they found that this demographic prefers that channel.

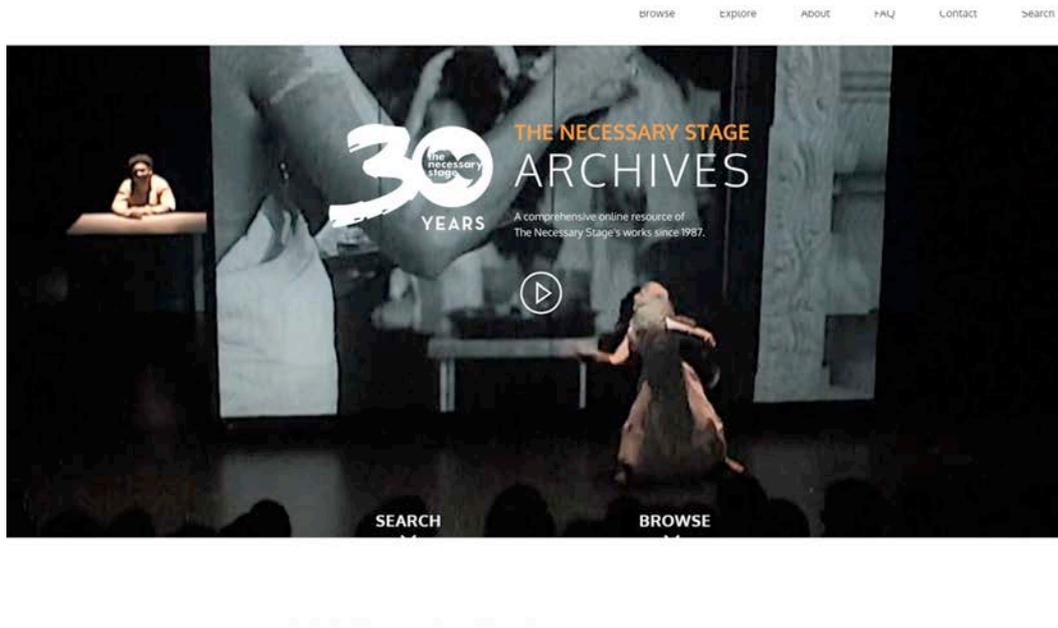
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<sup>3</sup> Before the Gallery opened, there was a stated target of five million visitors, an ambitious target since annual museum visitorship in 2016 was 5.1 million for the year.

## Case study 4: The Necessary Stage

The Necessary Stage, or TNS as it is also known, is one of the pioneer theatre companies in post independence Singapore, founded in 1987. As a case study, TNS is notable for its management of soft data.

It recently spent \$80,000 to put all its archival material online at [tnsarchives.com](http://tnsarchives.com). It is the only theatre company to have dedicated time and resources to sharing its collection in this way.



**FIGURE 2: HOMEPAGE OF TNSARCHIVES.COM.**

The archives are very comprehensive, ranging from photographs to theatre programmes to videos.

The videos especially are a boon to academia and researchers as they include everything from full-length productions to rehearsal videos. TNS being a pioneer company has nurtured a lot of actors and playwrights who have gone on to fruitful careers elsewhere, so this repository is invaluable documentation of not just one theatre company's history but also a substantial chunk of Singapore theatre history.

The videos are also pay per view, and general manager Melissa Lim said that the viewership ranges from 1 to 12 views a month. This may not sound like a lot of income but it is an unexpected revenue stream which contributes to the coffers.

Ms Lim said: ““Even though the numbers are low, the engagement is high. That is more meaningful than looking at real numbers.””

The company, like the other case studies in this paper, tracks demographics closely . This is especially important because TNS does a lot of experimental, blackbox theatre. They also organise a theatre festival targeted at the young. Ms Lim says 48% of its audience comprises students. The company tracks this demographic closely, reaching out via digital marketing tools and planning its programmes with scheduling

(no productions near examination periods for example) and ratings (which are based on ages) considerations.

### **Case study 5: Drama Box**

Drama Box is a Chinese language theatre group founded in 1990 and its artistic director Kok Heng Leun represented the arts community in Singapore's Parliament from 2016 to 2018.

One of Drama Box's longest running project is a community engagement art project called Both Sides Now. It started in 2013 as a commission from Khoo Teck Puat Hospital to talk about end-of-life issues.



**FIGURE 3: AN INTERACTIVE COMMUNITY SESSION FOR BOTH SIDES NOW.**

There are no hard numbers here, just stories and anecdotes from people on the ground. But this is soft data about social issues, which gets fed back to organisations, such as the Lien Foundation which does research on ageing and related issues, Khoo Teck Puat Hospital, and Agency For Integrated Care, a government initiative which coordinates caregiving for communities in Singapore.

This ongoing arts engagement programme has become a reliable way to feed grassroots level perceptions and attitudes to organisations and government. Mr Kok calls it “socially engaged work”, which “becomes both art and social work, transformative work”.

## Case study 6: National Heritage Board

The National Heritage Board was set up in 1993 and many of Singapore's museum assets come under its umbrella. Like the other institutions, the Board is very keen on visitor analytics for its museums. Besides people counting cameras, it has also tried a pilot wifi tracking project, where it tracks visitors based on their use of free wifi on museum premises.

Ms Cheryl Koh, the director of strategic communications and digital for the Board, said wifi tracking helps the museums not just with visitor count, but also with information like which galleries are popular and how much time people spend in each gallery. It also helps unearth wayfinding issues, such as blind spots where visitors get lost.

But the biggest data pool the Board has to manage is the National Collection, which comprises historical and cultural artefacts. The Board is in the process of digitising and putting online this collection. More than 100,000 items have been digitised and put online at the roots.sg website, and more items are being added. This process opens access to the National Collection, which like every other museum and/or national collection, is mostly confined to storage due to space and conservation

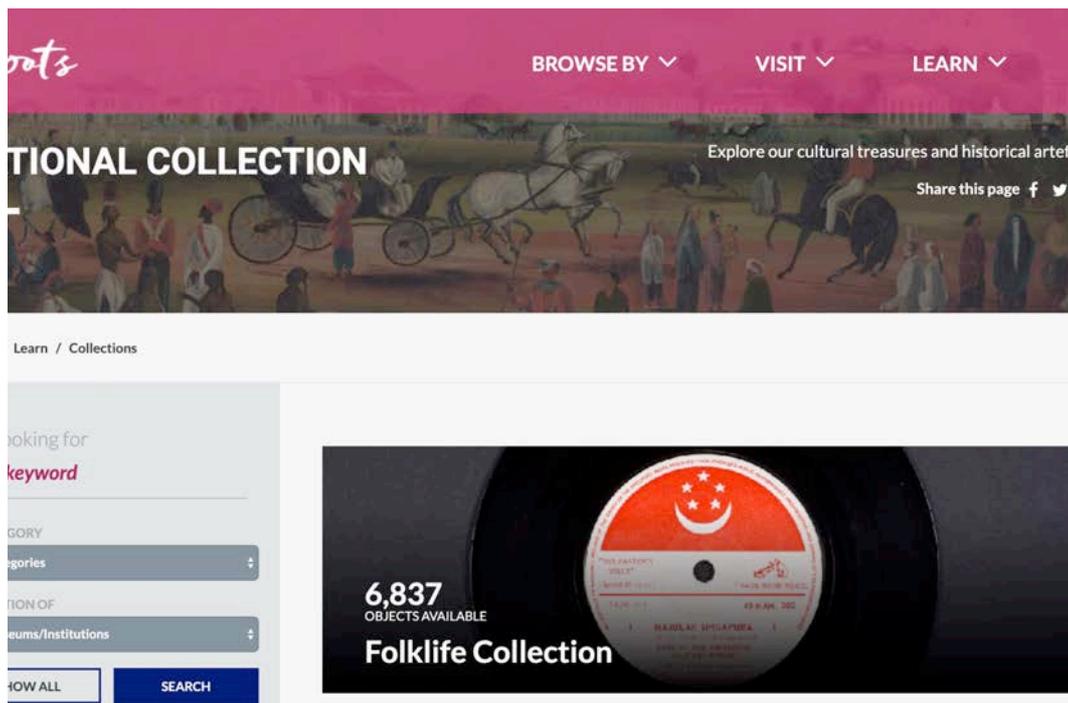


FIGURE 4: THE HOMEPAGE OF ROOTS.SG.

constraints.

Ms Koh explained the key concern driving the Board's digital initiatives: "How do we make the collection discoverable and shareable for our end user, and also for our visitor?"

The Board has a more ambitious plan to develop a Cultural Resource Ontology - a backend system that will link databases about arts, culture and heritage in Singapore so that researchers and laymen will be able to access the data more easily. There is a budget of about \$500,000 allocated to this project, and there are plans to pilot test cases by this year. There is also a data work group, comprising representatives from the Board, as well as other cultural institutions like the National Library Board and the National Gallery, which is looking at ways to link all their database resources.

## **Conclusions**

It is evident that data science can, and has been, usefully applied in various scenarios in the arts and culture industry in Singapore. There are a lot of questions raised by its application and usage.

For example, the National Gallery's use of feedback and sample audiences could be seen as a worrying trend. Curators should not be forced to dumb down programming to appeal to an audience.

On the other hand, digitisation of big data can bring about more openness and information sharing, as can be seen in TNS and the National Heritage Board's use of digital platforms to share archival information.

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