



Social Media Use in Project Management – An Exploratory Study of Multiple Transport Projects

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Brief Background to the Research

- The unprecedented investment in infrastructure has been witnessed in recent years
- To accelerate post Covid-19 with several countries
- Announced large infrastructure projects for economic revival
- Transport infrastructure projects have at least two characteristics that make them unique to study
 - First, the scale of these types of projects tends to be large, and the delivered infrastructure is designed to be in use for several decades
 - Second, transport infrastructure projects are of interest not only to internal stakeholders but also to citizens who are the future users



Research Aim

- Citizens can, especially in collaboration, have a strong influence on projects
- But their capacity for making their voices heard is limited
- A critical avenue for individual citizens to be heard is social media, which has become widely used in recent times to be able to express opinions publicly
- **This project aims to explore the opportunities that social media could offer to project managers at different stages of transport projects**



Research on Social Media in Project Management

- Improved project learning through social media (Rosa et al., 2016; Winter and Chaves, 2017)
- Better intra-project communication or collaboration through social media (Kanagarajoo et al., 2019; Zhang et al., 2018)
- Social media as a platform for branding (Ninan et al., 2019)
- Social media as a platform for managing external stakeholders (Ninan et al., 2020)
- The combined message of this early research seems to indicate several possibilities for utilising social media in project management



Exploratory Study of Multiple Transport Projects

- Can social media be used to evaluate the benefits derived from transport infrastructure projects after they are put into operation?
- Can social media be used to create value in infrastructure megaprojects?



Method

- We looked for meanings from the perception of social reality constructed by citizens as expressed in social media
- We designed this study as a multiple case study
- We chose to study **Sydney Metro Northwest**, and CBD and South East Light Rail
- Twitter is chosen as it provides a search API for the public to search their database with user-defined keywords and time range
- The keywords are the titles of projects



Benefits Realisation - Analysis Method

- 1st attempt: to search benefits keywords in the collected tweets - failed
 - End users did not use the same terms in their tweets to describe the benefits as the project promoters used in their mission statement
- 2nd attempt: to organise data into first order observations and then assemble them into a more structured aggregate dimensions of benefits by collapsing or clustering the first order observations that seemed to share some unifying benefits



Benefits Realisation - Results

| First Order Observations | Aggregate Dimensions | Tweet Example |
|-------------------------------------|--------------------------------|---|
| Fast | Travel time saved | "On the other side of the fence I'm actually having no problems and it's faster than the bus for me" (1/08/2019) |
| Time saving | | |
| Impressive first experience | Enhanced customer satisfaction | "New, Sydney Metro driverless trains.... New experience. Pretty impressed, gotta say." (11/07/2019) |
| Fun pretending they were the driver | | |
| Cleanliness | | |
| Quiet | City landscape | "There is so much new infrastructure and development happening within the CBD. Sydney's Pitt Street Station will become the city's newest landmark with a \$463 million contract awarded to build the new metro railway station and the buildings above it. #sydneyproperty #cityliving" (24/09/2019) |
| Aesthetics of the metro stations | | |
| More housing choices | Social benefits | "Grand Cherrybrook home is just a quick walk to Sydney metro northwest https://ift.tt/2Gb31t8 " (12/07/2019) |
| Better access to services | | |
| Complaints about doors | Identified operational issues | "the USB points in car 0501 don t work FYI" (15/09/2019) |
| Non-functional facilities | | |
| Lack of parking | | |
| Lack of connecting buses | | |



Benefits Realisation - Discussions

- Social media has the potential for assessing benefits realisation
- The true-to-life and meaningful stories in the tweets provide credibility that some benefits of the project were realised
- However, benefits could not be quantified, not all registered benefits could be mentioned
- **Supplementary evidence**
- It emphasised the multidimensional nature of benefits in infrastructure projects
- Different stakeholders, in this case citizens, can perceive, value and express these perceptions quite differently



Creating Value - Analysis Method

- We used content analysis and open coding of the tweets collected to understand what each tweet conveyed
- The process was very iterative and we took multiple readings of the tweets as some categories are often not obvious until the second or third reading
- We employed manual coding



Creating Value - Results and Discussions

- Addressing real time operational issues
 - An excellent platform where users post day to day operational issues surrounding the projects
 - We can create more value if we can systematically collect this big data, analyse them through algorithms, and efficiently communicate it to the service team to mitigate the current issue through timely action
 - *"The lift between the concourse and the platforms at North Ryde is out of service" (29 Sept 2019)*



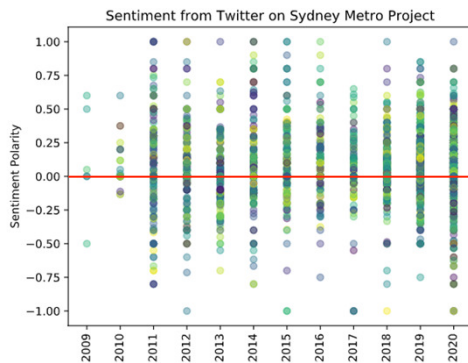
Creating Value - Results and Discussions

- Collecting suggestions to improve
 - In contrast to operational issues, suggestions to improve are more than addressing an operational defect on a particular day
 - Collecting such suggestions to improve can help the project create more value for the society as decision makers would know the main issues raised by the community
 - *"Your 15 second door opening is stupid and dangerous. People cannot get off the train in the fifteen seconds. Fix it before people get hurt" (16 Sept 2019)*



Creating Value - Results and Discussions

- Capturing live sentiments (overall, 41.4% positive, 18.5% negative)



Common words for negative comments



Common words for positive comments



Comparison of Different Social Media Platforms

- YouTube: comments under all relevant videos
- Google Review: reviews on its official page
- Facebook: posts on the Facebook public group

| Social Media | Positive | Negative | Neutral |
|---------------|----------|----------|---------|
| Twitter | 41.4% | 18.5% | 40.1% |
| Google Review | 73.5% | 13.0% | 13.5% |
| YouTube | 50.0% | 13.7% | 36.3% |
| Facebook | 87.1% | 6.9% | 6.0% |



Summary and Further Research Plan

- Social Media in Project Management – full of potential
 - Branding, managing external stakeholders, information sharing, etc. confirmed by others
 - Collecting real time operational issues and suggestions for improvement
 - Assessing benefits realisation – Supplementary evidence, automatic, enhanced algorithm to convert daily tweets into benefits terms
 - Capturing live sentiments – Understand factors influencing public sentiments, measure public acceptance/support, supplementary evidence for social license to operate
- Further research – contact Transport for NSW
 - Investigate what the current status of social media use is
 - Develop prototypes of social media use



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